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$[\text{RemoveOr} \stackrel{\text{stmt}}{\to} \text{SystemQ} \vdash \forall \underline{\mathsf{a}}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \Rightarrow \underline{\mathsf{a}} \vdash \underline{\mathsf{a}}]$

$[\text{RemoveOr} \stackrel{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{\mathsf{a}}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \Rightarrow \underline{\mathsf{a}} \vdash \text{Repetition} \rhd \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \Rightarrow \underline{\mathsf{a}} \gg \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \Rightarrow \underline{\mathsf{a}}; \text{AutoImply} \gg \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{a}}; \text{FromNegations} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{a}} \rhd \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \Rightarrow \underline{\mathsf{a}} \gg \underline{\mathsf{a}}\rceil, \text{p}_0, \mathsf{c})]$

$[\text{ToNegatedAnd} \stackrel{\text{stmt}}{\to} \text{SystemQ} \vdash \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \vdash \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n})\text{n}]$

$[\text{ToNegatedAnd} \stackrel{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \vdash \text{AddDoubleNeg} \rhd \underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \gg \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n})\text{n}; \text{Repetition} \rhd \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n})\text{n} \gg \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n})\text{n}\rceil, \text{p}_0, \mathsf{c})]$

$[\text{ToNegatedAnd(1)} \stackrel{\text{stmt}}{\to} \text{SystemQ} \vdash \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \vdash \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n})\text{n}]$

$[\text{ToNegatedAnd(1)} \stackrel{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \vdash \underline{\mathsf{a}} \vdash \text{FromContradiction} \rhd \underline{\mathsf{a}} \rhd \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \gg \dot{\neg}\,(\underline{\mathsf{b}})\text{n}; \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \text{Ded} \rhd \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \vdash \underline{\mathsf{a}} \vdash \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \gg \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \Rightarrow \underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n}; \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \vdash \text{MP} \rhd \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \Rightarrow \underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \rhd \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \gg \underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n}; \text{ToNegatedAnd} \rhd \underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \gg \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n})\text{n}\rceil, \text{p}_0, \mathsf{c})]$

$[\text{IntroExist(Helper)} \stackrel{\text{stmt}}{\to} \text{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{(\text{v1})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \langle \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \equiv \dot{\neg}\,(\underline{\mathsf{b}})\text{n} | \underline{(\text{v1})} {:=}{=} \underline{\mathsf{x}}\rangle_{\text{Me}} \Vdash \forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \Rightarrow \dot{\neg}\,(\underline{\mathsf{a}})\text{n}]$

$[\text{IntroExist(Helper)} \stackrel{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{(\text{v1})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \langle \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \equiv \dot{\neg}\,(\underline{\mathsf{b}})\text{n} | \underline{(\text{v1})} {:=}{=} \underline{\mathsf{x}}\rangle_{\text{Me}} \Vdash \forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \vdash \text{A4} \mathbin{@} \underline{\mathsf{x}} \mathrel{\rhd\!\!\rhd} \langle \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \equiv \dot{\neg}\,(\underline{\mathsf{b}})\text{n} | \underline{(\text{v1})} {:=}{=} \underline{\mathsf{x}}\rangle_{\text{Me}} \rhd \forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \gg \dot{\neg}\,(\underline{\mathsf{a}})\text{n}; \forall \underline{\mathsf{x}}\colon \forall \underline{(\text{v1})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \text{Ded} \rhd \forall \underline{\mathsf{x}}\colon \forall \underline{(\text{v1})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \langle \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \equiv \dot{\neg}\,(\underline{\mathsf{b}})\text{n} | \underline{(\text{v1})} {:=}{=} \underline{\mathsf{x}}\rangle_{\text{Me}} \Vdash \forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \vdash \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \gg \langle \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \equiv \dot{\neg}\,(\underline{\mathsf{b}})\text{n} | \underline{(\text{v1})} {:=}{=} \underline{\mathsf{x}}\rangle_{\text{Me}} \Vdash \forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \Rightarrow \dot{\neg}\,(\underline{\mathsf{a}})\text{n}\rceil, \text{p}_0, \mathsf{c})]$

$[\text{IntroExist} \stackrel{\text{stmt}}{\to} \text{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{(\text{v1})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \langle \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \equiv \dot{\neg}\,(\underline{\mathsf{b}})\text{n} | \underline{(\text{v1})} {:=}{=} \underline{\mathsf{x}}\rangle_{\text{Me}} \Vdash \underline{\mathsf{a}} \vdash \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n}]$

$[\text{IntroExist} \stackrel{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{(\text{v1})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \langle \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \equiv \dot{\neg}\,(\underline{\mathsf{b}})\text{n} | \underline{(\text{v1})} {:=}{=} \underline{\mathsf{x}}\rangle_{\text{Me}} \Vdash \text{IntroExist(Helper)} \mathbin{@} \underline{\mathsf{x}} \mathrel{\rhd\!\!\rhd} \langle \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \equiv \dot{\neg}\,(\underline{\mathsf{b}})\text{n} | \underline{(\text{v1})} {:=}{=} \underline{\mathsf{x}}\rangle_{\text{Me}} \gg \forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \Rightarrow \dot{\neg}\,(\underline{\mathsf{a}})\text{n}; \underline{\mathsf{a}} \vdash \text{AddDoubleNeg} \rhd \underline{\mathsf{a}} \gg \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n}; \text{MT} \rhd \forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \Rightarrow \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \rhd \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \gg \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n}; \text{Repetition} \rhd \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n} \gg \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n}\rceil, \text{p}_0, \mathsf{c})]$

$[\text{ExistMP} \stackrel{\text{stmt}}{\to} \text{SystemQ} \vdash \forall \underline{(\text{v1})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \vdash \underline{\mathsf{b}}]$

$[\text{ExistMP} \stackrel{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{(\text{v1})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \vdash \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \vdash \text{MT} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \gg \dot{\neg}\,(\underline{\mathsf{a}})\text{n}; \text{Gen} \rhd \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \gg \forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n}; \text{Repetition} \rhd \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \gg \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n}; \text{FromContradiction} \rhd \forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n} \rhd \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \gg \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n}; \forall \underline{(\text{v1})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \text{Ded} \rhd \forall \underline{(\text{v1})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \vdash \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \vdash \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n} \gg \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n}; \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \vdash \text{MP2} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \Rightarrow \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \gg \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n}; \text{prop lemma imply negation} \rhd \dot{\neg}\,(\underline{\mathsf{b}})\text{n} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n} \gg \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n}; \text{RemoveDoubleNeg} \rhd \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n} \gg \underline{\mathsf{b}}\rceil, \text{p}_0, \mathsf{c})]$

$[\text{ExistMP2} \stackrel{\text{stmt}}{\to} \text{SystemQ} \vdash \forall \underline{(\text{v1})}\colon \forall \underline{(\text{v2})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \forall \underline{\mathsf{c}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \vdash \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v1})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\text{n})\text{n} \vdash \dot{\neg}\,(\forall_{\text{obj}} \underline{(\text{v2})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\text{n})\text{n} \vdash \underline{\mathsf{c}}]$

$[\mathrm{ExistMP2} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{b}})\mathrm{n})\mathrm{n} \vdash \mathrm{ExistMP} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}}; \mathrm{ExistMP} \rhd \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{b}})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{c}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{TwiceExistMP} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{b}}]$

$[\mathrm{TwiceExistMP} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \vdash \mathrm{ExistMP} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{b}}; \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \mathrm{Ded} \rhd \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{b}} \gg \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{b}}; \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{MP} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{b}} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{b}}; \mathrm{ExistMP} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{b}} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{b}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{TwiceExistMP2} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{(\mathrm{v3})}\colon \forall\underline{(\mathrm{v4})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v4})}\colon \dot{\neg}(\underline{\mathsf{b}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{c}}]$

$[\mathrm{TwiceExistMP2} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{(\mathrm{v3})}\colon \forall\underline{(\mathrm{v4})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v4})}\colon \dot{\neg}(\underline{\mathsf{b}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{TwiceExistMP} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}}; \mathrm{TwiceExistMP} \rhd \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v4})}\colon \dot{\neg}(\underline{\mathsf{b}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{c}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{AllNegated(Imply)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{AllNegated(Imply)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \vdash \mathrm{A4} \mathbin{@} \underline{\mathsf{x}} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n}; \mathrm{RemoveDoubleNeg} \rhd \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{a}}; \mathrm{Gen} \rhd \underline{\mathsf{a}} \gg \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}}; \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \mathrm{Ded} \rhd \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \gg \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}}; \mathrm{Contrapositive} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ExistNegated(Imply)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n}]$

$[\mathrm{ExistNegated(Imply)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{Repetition} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{RemoveDoubleNeg} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n}; \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \mathrm{Ded} \rhd \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\underline{\mathsf{a}})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{AddAll} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{b}}]$

$[\mathrm{AddAll} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \vdash$

$\mathrm{A4} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \gg \underline{\mathsf{a}}; \mathrm{MP} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \underline{\mathsf{a}} \gg \underline{\mathsf{b}}; \mathrm{Gen} \rhd \underline{\mathsf{b}} \gg$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{b}}; \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \mathrm{Ded} \rhd \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \vdash$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{b}} \gg \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{b}}; \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \mathrm{MP} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{b}} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \gg \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{b}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{AddExist(Helper1)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{y}}\colon \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \forall\underline{\mathsf{d}}\colon \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \Rightarrow$
$\underline{\mathsf{a}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}]$

$[\mathrm{AddExist(Helper1)} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{y}}\colon \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \forall\underline{\mathsf{d}}\colon \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \vdash$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n} \vdash \mathrm{A4} \mathbin{@} \underline{\mathsf{y}} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n} \gg$
$\dot\neg(\underline{\mathsf{b}})\mathrm{n}; \mathrm{MT} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \dot\neg(\underline{\mathsf{b}})\mathrm{n} \gg \dot\neg(\underline{\mathsf{a}})\mathrm{n}; \mathrm{MT} \rhd \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \rhd \dot\neg(\underline{\mathsf{a}})\mathrm{n} \gg$
$\dot\neg(\underline{\mathsf{c}})\mathrm{n}; \mathrm{Gen} \rhd \dot\neg(\underline{\mathsf{c}})\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n}; \mathrm{Repetition} \rhd \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n}; \mathrm{FromContradiction} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n} \rhd$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}; \forall\underline{\mathsf{y}}\colon \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \forall\underline{\mathsf{d}}\colon \mathrm{Ded} \rhd$
$\forall\underline{\mathsf{y}}\colon \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \forall\underline{\mathsf{d}}\colon \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \vdash$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n} \vdash \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n} \gg$
$\langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{AddExist(Helper2)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{y}}\colon \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \forall\underline{\mathsf{d}}\colon \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \Rightarrow$
$\underline{\mathsf{a}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}]$

$[\mathrm{AddExist(Helper2)} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{y}}\colon \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \forall\underline{\mathsf{d}}\colon \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \vdash$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \vdash \mathrm{AddExist(Helper1)} \unrhd \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \gg$
$\underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}; \mathrm{MP3} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \underline{\mathsf{c}} \Rightarrow$
$\underline{\mathsf{a}} \rhd \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}; \mathrm{prop\ lemma\ imply\ negation} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}; \forall\underline{\mathsf{y}}\colon \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \forall\underline{\mathsf{d}}\colon \mathrm{Ded} \rhd$
$\forall\underline{\mathsf{y}}\colon \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \forall\underline{\mathsf{d}}\colon \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \vdash$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \vdash \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n} \gg \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \Vdash$
$\underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{AddExist} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{y}}\colon \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \forall\underline{\mathsf{d}}\colon \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \vdash$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}]$

$[\mathrm{AddExist} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{y}}\colon \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \forall\underline{\mathsf{d}}\colon \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \vdash$
$\mathrm{AddExist(Helper2)} \unrhd \langle \dot\neg(\underline{\mathsf{b}})\mathrm{n} \equiv \dot\neg(\underline{\mathsf{d}})\mathrm{n} | \underline{(\mathrm{v2})} {:=}{=} \underline{\mathsf{y}} \rangle_{\mathrm{Me}} \gg \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot\neg(\underline{\mathsf{c}})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot\neg(\underline{\mathsf{d}})\mathrm{n})\mathrm{n}; \mathrm{MP2} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \Rightarrow$

$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\underline{\mathsf{c}})n)n \Rightarrow \dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\underline{\mathsf{d}})n)n \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \underline{\mathsf{c}} \Rightarrow \underline{\mathsf{a}} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot\neg(\underline{\mathsf{c}})n)n \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{(v2)}{:}\,\dot\neg(\underline{\mathsf{d}})n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{AddExist(SimpleAnt)} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{y}}{:}\,\forall(v1){:}\,\forall(v2){:}\,\forall\underline{\mathsf{a}}{:}\,\forall\underline{\mathsf{b}}{:}\,\forall\underline{\mathsf{d}}{:}\,\langle\dot\neg(\underline{\mathsf{b}})n{\equiv}\dot\neg(\underline{\mathsf{d}})n|(v2){:}{=}{=}\underline{\mathsf{y}}\rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\underline{\mathsf{a}})n)n \Rightarrow \dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\underline{\mathsf{d}})n)n]$

$[\mathrm{AddExist(SimpleAnt)} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{y}}{:}\,\forall(v1){:}\,\forall(v2){:}\,\forall\underline{\mathsf{a}}{:}\,\forall\underline{\mathsf{b}}{:}\,\forall\underline{\mathsf{d}}{:}\,\langle\dot\neg(\underline{\mathsf{b}})n{\equiv}\dot\neg(\underline{\mathsf{d}})n|(v2){:}{=}{=}\underline{\mathsf{y}}\rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\mathrm{AutoImply} \gg \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{a}};\ \mathrm{AddExist} @ \underline{\mathsf{y}} \,\triangleright\!\!\triangleright\, \langle\dot\neg(\underline{\mathsf{b}})n{\equiv}\dot\neg(\underline{\mathsf{d}})n|(v2){:}{=}{=}\underline{\mathsf{y}}\rangle_{\mathrm{Me}} \rhd \underline{\mathsf{a}} \Rightarrow$
$\underline{\mathsf{b}} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{a}} \gg \dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\underline{\mathsf{a}})n)n \Rightarrow \dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\underline{\mathsf{d}})n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{AddExist(Simple)} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall(v1){:}\,\forall(v2){:}\,\forall\underline{\mathsf{a}}{:}\,\forall\underline{\mathsf{b}}{:}\,\underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\underline{\mathsf{a}})n)n \Rightarrow \dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\underline{\mathsf{b}})n)n]$

$[\mathrm{AddExist(Simple)} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall(v1){:}\,\forall(v2){:}\,\forall\underline{\mathsf{a}}{:}\,\forall\underline{\mathsf{b}}{:}\,\underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\mathrm{AutoImply} \gg \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{a}};\ \mathrm{AddExist} @ (v2) \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{a}} \gg$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\underline{\mathsf{a}})n)n \Rightarrow \dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\underline{\mathsf{b}})n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{AEA-negated} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall(v1){:}\,\forall(v2){:}\,\forall(v3){:}\,\forall\underline{\mathsf{a}}{:}\,\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \vdash$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n)n)n]$

$[\mathrm{AEA-negated} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall(v1){:}\,\forall(v2){:}\,\forall(v3){:}\,\forall\underline{\mathsf{a}}{:}\,\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \vdash$
$\mathrm{AllNegated(Imply)} \gg \dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n \Rightarrow \dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n;\ \mathrm{AddAll} \rhd$
$\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n \Rightarrow \dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n \gg \forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n \Rightarrow$
$\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n;\ \mathrm{ExistNegated(Imply)} \gg$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \Rightarrow$
$\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n;\ \mathrm{ImplyTransitivity} \rhd$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \Rightarrow$
$\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n \rhd \forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n \Rightarrow$
$\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n \gg \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \Rightarrow$
$\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n;\ \mathrm{AddExist(Simple)} \rhd$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \Rightarrow \forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n \gg$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n)n)n;\ \mathrm{AllNegated(Imply)} \gg$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n)n)n;\ \mathrm{ImplyTransitivity} \rhd$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n)n)n \rhd$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n)n)n \gg$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n)n)n;\ \mathrm{MP} \rhd$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n)n)n \rhd$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\underline{\mathsf{a}})n)n)n \gg$
$\dot\neg(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg(\dot\neg(\underline{\mathsf{a}})n)n)n)n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{AddEAE} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{v1})}\colon \forall \underline{(\mathrm{v2})}\colon \forall \underline{(\mathrm{v3})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{AddEAE} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{v1})}\colon \forall \underline{(\mathrm{v2})}\colon \forall \underline{(\mathrm{v3})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\mathrm{AddExist(Simple)} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \gg \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\mathrm{n})\mathrm{n}; \mathrm{AddAll} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\mathrm{n})\mathrm{n}; \mathrm{AddExist(Simple)} \rhd$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{b}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{EAE}-\mathrm{MP} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{v1})}\colon \forall \underline{(\mathrm{v2})}\colon \forall \underline{(\mathrm{v3})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{b}}]$

$[\mathrm{EAE}-\mathrm{MP} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{v2})}\colon \forall \underline{(\mathrm{v3})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \vdash \mathrm{A4} @ \underline{(\mathrm{v2})} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n}; \mathrm{ExistMP} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \gg$
$\underline{\mathsf{b}}; \forall \underline{(\mathrm{v1})}\colon \forall \underline{(\mathrm{v2})}\colon \forall \underline{(\mathrm{v3})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \mathrm{Ded} \rhd \forall \underline{(\mathrm{v2})}\colon \forall \underline{(\mathrm{v3})}\colon \forall \underline{\mathsf{a}}\colon \forall \underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{b}} \gg \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow$
$\underline{\mathsf{b}}; \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{MP} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{b}} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \gg \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow$
$\underline{\mathsf{b}}; \mathrm{ExistMP} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n} \Rightarrow$
$\underline{\mathsf{b}} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{b}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{EEA}-\mathrm{negated} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall \underline{(\mathrm{v1})}\colon \forall \underline{(\mathrm{v2})}\colon \forall \underline{(\mathrm{v3})}\colon \forall \underline{\mathsf{a}}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{EEA}-\mathrm{negated} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall \underline{(\mathrm{v1})}\colon \forall \underline{(\mathrm{v2})}\colon \forall \underline{(\mathrm{v3})}\colon \forall \underline{\mathsf{a}}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{AllNegated(Imply)} \gg \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{AddAll} \rhd$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ExistNegated(Imply)} \gg$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n}; \mathrm{ImplyTransitivity} \rhd$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{AddAll} \rhd$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}\,(\dot{\neg}\,(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ExistNegated(Imply)} \gg$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ImplyTransitivity} \rhd$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \rhd$

$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MP} \rhd$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n} \rhd$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v3})}\colon \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{leqTransitivity} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} <= \underline{\mathsf{z}} \vdash \underline{\mathsf{x}} <= \underline{\mathsf{z}}]$

$[\mathrm{leqTransitivity} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} <= \underline{\mathsf{z}} \vdash \mathrm{leqTransitivityAxiom} \gg \underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \underline{\mathsf{y}} <= \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{x}} <= \underline{\mathsf{z}}; \mathrm{MP2} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \underline{\mathsf{y}} <= \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{x}} <= \underline{\mathsf{z}} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \rhd \underline{\mathsf{y}} <= \underline{\mathsf{z}} \gg \underline{\mathsf{x}} <= \underline{\mathsf{z}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{leqAntisymmetry} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} <= \underline{\mathsf{x}} \vdash \underline{\mathsf{x}} = \underline{\mathsf{y}}]$

$[\mathrm{leqAntisymmetry} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} <= \underline{\mathsf{x}} \vdash \mathrm{leqAntisymmetryAxiom} \gg \underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \underline{\mathsf{y}} <= \underline{\mathsf{x}} \Rightarrow \underline{\mathsf{x}} = \underline{\mathsf{y}}; \mathrm{MP2} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \underline{\mathsf{y}} <= \underline{\mathsf{x}} \Rightarrow \underline{\mathsf{x}} = \underline{\mathsf{y}} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \rhd \underline{\mathsf{y}} <= \underline{\mathsf{x}} \gg \underline{\mathsf{x}} = \underline{\mathsf{y}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{leqAddition} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash (\underline{\mathsf{x}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{z}})]$

$[\mathrm{leqAddition} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash \mathrm{leqAdditionAxiom} \gg \underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow (\underline{\mathsf{x}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{z}}); \mathrm{MP} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow (\underline{\mathsf{x}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{z}}) \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{z}})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{leqMultiplication} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon 0 <= \underline{\mathsf{z}} \vdash \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}})]$

$[\mathrm{leqMultiplication} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon 0 <= \underline{\mathsf{z}} \vdash \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash \mathrm{leqMultiplicationAxiom} \gg 0 <= \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}); \mathrm{MP2} \rhd 0 <= \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \rhd 0 <= \underline{\mathsf{z}} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{Reciprocal} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n} \vdash (\underline{\mathsf{x}} * \mathrm{rec}\underline{\mathsf{x}}) = 1]$

$[\mathrm{Reciprocal} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n} \vdash \mathrm{ReciprocalAxiom} \gg \dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n} \Rightarrow (\underline{\mathsf{x}} * \mathrm{rec}\underline{\mathsf{x}}) = 1; \mathrm{MP} \rhd \dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n} \Rightarrow (\underline{\mathsf{x}} * \mathrm{rec}\underline{\mathsf{x}}) = 1 \rhd \dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n} \gg (\underline{\mathsf{x}} * \mathrm{rec}\underline{\mathsf{x}}) = 1\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{eqLeq} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{x}} <= \underline{\mathsf{y}}]$

$[\mathrm{eqLeq} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \mathrm{EqLeqAxiom} \gg \underline{\mathsf{x}} = \underline{\mathsf{y}} \Rightarrow \underline{\mathsf{x}} <= \underline{\mathsf{y}}; \mathrm{MP} \rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \Rightarrow \underline{\mathsf{x}} <= \underline{\mathsf{y}} \rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \gg \underline{\mathsf{x}} <= \underline{\mathsf{y}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{eqAddition} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{z}})]$

$[\mathrm{eqAddition} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \mathrm{EqAdditionAxiom} \gg \underline{\mathsf{x}} = \underline{\mathsf{y}} \Rightarrow (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{z}}); \mathrm{MP} \rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \Rightarrow (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{z}}) \rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{z}})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{eqMultiplication} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash (\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}})]$

$[\mathrm{eqMultiplication} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \mathrm{EqMultiplicationAxiom} \gg \underline{\mathsf{x}} = \underline{\mathsf{y}} \Rightarrow (\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}); \mathrm{MP} \rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \Rightarrow (\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}})\rceil, \mathrm{p}_0, \mathsf{c})]$

[Equality $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{x}} = \underline{\mathsf{z}} \vdash \underline{\mathsf{y}} = \underline{\mathsf{z}}$]

[Equality $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{x}} = \underline{\mathsf{z}} \vdash$ EqualityAxiom $\gg \underline{\mathsf{x}} = \underline{\mathsf{y}} \Rightarrow \underline{\mathsf{x}} = \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{y}} = \underline{\mathsf{z}};$ MP2 $\rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \Rightarrow \underline{\mathsf{x}} = \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{y}} = \underline{\mathsf{z}} \rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \rhd \underline{\mathsf{x}} = \underline{\mathsf{z}} \gg \underline{\mathsf{y}} = \underline{\mathsf{z}}\rceil, \mathrm{p}_0, \mathsf{c})$]

[eqReflexivity $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \underline{\mathsf{x}} = \underline{\mathsf{x}}$]

[eqReflexivity $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon$ leqReflexivity $\gg \underline{\mathsf{x}} <= \underline{\mathsf{x}};$ leqAntisymmetry $\rhd \underline{\mathsf{x}} <= \underline{\mathsf{x}} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{x}} \gg \underline{\mathsf{x}} = \underline{\mathsf{x}}\rceil, \mathrm{p}_0, \mathsf{c})$]

[eqSymmetry $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} = \underline{\mathsf{x}}$]

[eqSymmetry $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash$ eqReflexivity $\gg \underline{\mathsf{x}} = \underline{\mathsf{x}};$ Equality $\rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \rhd \underline{\mathsf{x}} = \underline{\mathsf{x}} \gg \underline{\mathsf{y}} = \underline{\mathsf{x}}\rceil, \mathrm{p}_0, \mathsf{c})$]

[eqTransitivity $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} = \underline{\mathsf{z}} \vdash \underline{\mathsf{x}} = \underline{\mathsf{z}}$]

[eqTransitivity $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} = \underline{\mathsf{z}} \vdash$ eqSymmetry $\rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \gg \underline{\mathsf{y}} = \underline{\mathsf{x}};$ Equality $\rhd \underline{\mathsf{y}} = \underline{\mathsf{x}} \rhd \underline{\mathsf{y}} = \underline{\mathsf{z}} \gg \underline{\mathsf{x}} = \underline{\mathsf{z}}\rceil, \mathrm{p}_0, \mathsf{c})$]

[eqTransitivity4 $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} = \underline{\mathsf{z}} \vdash \underline{\mathsf{z}} = \underline{\mathsf{u}} \vdash \underline{\mathsf{x}} = \underline{\mathsf{u}}$]

[eqTransitivity4 $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} = \underline{\mathsf{z}} \vdash \underline{\mathsf{z}} = \underline{\mathsf{u}} \vdash$ eqTransitivity $\rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \rhd \underline{\mathsf{y}} = \underline{\mathsf{z}} \gg \underline{\mathsf{x}} = \underline{\mathsf{z}};$ eqTransitivity $\rhd \underline{\mathsf{x}} = \underline{\mathsf{z}} \rhd \underline{\mathsf{z}} = \underline{\mathsf{u}} \gg \underline{\mathsf{x}} = \underline{\mathsf{u}}\rceil, \mathrm{p}_0, \mathsf{c})$]

[eqTransitivity5 $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon \forall \underline{\mathsf{v}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} = \underline{\mathsf{z}} \vdash \underline{\mathsf{z}} = \underline{\mathsf{u}} \vdash \underline{\mathsf{u}} = \underline{\mathsf{v}} \vdash \underline{\mathsf{x}} = \underline{\mathsf{v}}$]

[eqTransitivity5 $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon \forall \underline{\mathsf{v}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} = \underline{\mathsf{z}} \vdash \underline{\mathsf{z}} = \underline{\mathsf{u}} \vdash \underline{\mathsf{u}} = \underline{\mathsf{v}} \vdash$ eqTransitivity4 $\rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \rhd \underline{\mathsf{y}} = \underline{\mathsf{z}} \rhd \underline{\mathsf{z}} = \underline{\mathsf{u}} \gg \underline{\mathsf{x}} = \underline{\mathsf{u}};$ eqTransitivity $\rhd \underline{\mathsf{x}} = \underline{\mathsf{u}} \rhd \underline{\mathsf{u}} = \underline{\mathsf{v}} \gg \underline{\mathsf{x}} = \underline{\mathsf{v}}\rceil, \mathrm{p}_0, \mathsf{c})$]

[eqTransitivity6 $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon \forall \underline{\mathsf{v}}\colon \forall \underline{\mathsf{w}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} = \underline{\mathsf{z}} \vdash \underline{\mathsf{z}} = \underline{\mathsf{u}} \vdash \underline{\mathsf{u}} = \underline{\mathsf{v}} \vdash \underline{\mathsf{v}} = \underline{\mathsf{w}} \vdash \underline{\mathsf{x}} = \underline{\mathsf{w}}$]

[eqTransitivity6 $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon \forall \underline{\mathsf{v}}\colon \forall \underline{\mathsf{w}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{y}} = \underline{\mathsf{z}} \vdash \underline{\mathsf{z}} = \underline{\mathsf{u}} \vdash \underline{\mathsf{u}} = \underline{\mathsf{v}} \vdash \underline{\mathsf{v}} = \underline{\mathsf{w}} \vdash$ eqTransitivity5 $\rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \rhd \underline{\mathsf{y}} = \underline{\mathsf{z}} \rhd \underline{\mathsf{z}} = \underline{\mathsf{u}} \rhd \underline{\mathsf{u}} = \underline{\mathsf{v}} \gg \underline{\mathsf{x}} = \underline{\mathsf{v}};$ eqTransitivity $\rhd \underline{\mathsf{x}} = \underline{\mathsf{v}} \rhd \underline{\mathsf{v}} = \underline{\mathsf{w}} \gg \underline{\mathsf{x}} = \underline{\mathsf{w}}\rceil, \mathrm{p}_0, \mathsf{c})$]

[EqAdditionLeft $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash (\underline{\mathsf{z}} + \underline{\mathsf{x}}) = (\underline{\mathsf{z}} + \underline{\mathsf{y}})$]

[EqAdditionLeft $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash$ eqAddition $\rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{z}});$ plusCommutativity $\gg (\underline{\mathsf{z}} + \underline{\mathsf{x}}) = (\underline{\mathsf{x}} + \underline{\mathsf{z}});$ plusCommutativity $\gg (\underline{\mathsf{y}} + \underline{\mathsf{z}}) = (\underline{\mathsf{z}} + \underline{\mathsf{y}});$ eqTransitivity4 $\rhd (\underline{\mathsf{z}} + \underline{\mathsf{x}}) = (\underline{\mathsf{x}} + \underline{\mathsf{z}}) \rhd (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{z}}) \rhd (\underline{\mathsf{y}} + \underline{\mathsf{z}}) = (\underline{\mathsf{z}} + \underline{\mathsf{y}}) \gg (\underline{\mathsf{z}} + \underline{\mathsf{x}}) = (\underline{\mathsf{z}} + \underline{\mathsf{y}})\rceil, \mathrm{p}_0, \mathsf{c})$]

[EqMultiplicationLeft $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash (\underline{\mathsf{z}} * \underline{\mathsf{x}}) = (\underline{\mathsf{z}} * \underline{\mathsf{y}})$]

[EqMultiplicationLeft $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash$ eqMultiplication $\rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}});$ timesCommutativity $\gg (\underline{\mathsf{z}} * \underline{\mathsf{x}}) = (\underline{\mathsf{x}} * \underline{\mathsf{z}});$ timesCommutativity $\gg (\underline{\mathsf{y}} * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * \underline{\mathsf{y}});$ eqTransitivity4 $\rhd (\underline{\mathsf{z}} * \underline{\mathsf{x}}) = (\underline{\mathsf{x}} * \underline{\mathsf{z}}) \rhd (\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \rhd (\underline{\mathsf{y}} * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * \underline{\mathsf{y}}) \gg (\underline{\mathsf{z}} * \underline{\mathsf{x}}) = (\underline{\mathsf{z}} * \underline{\mathsf{y}})\rceil, \mathrm{p}_0, \mathsf{c})$]

[PlusF(Sym) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + \underline{(\mathrm{fy})}[\underline{\mathsf{m}}]) = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\, (\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\, (\dot{\neg}\, (\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\, (\dot{\neg}\, (\dot{\neg}\, (\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{d}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]]$

$[\mathrm{PlusF(Sym)} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \mathrm{PlusF} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P(P(Union(\{N, Q\})))} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{d}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + \underline{(\mathrm{fy})}[\underline{\mathsf{m}}]); \mathrm{eqSymmetry} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P(P(Union(\{N, Q\})))} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{d}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + \underline{(\mathrm{fy})}[\underline{\mathsf{m}}]) \gg (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + \underline{(\mathrm{fy})}[\underline{\mathsf{m}}]) = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P(P(Union(\{N, Q\})))} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{d}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{plus0Left} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon (0 + \underline{\mathsf{x}}) = \underline{\mathsf{x}}]$

$[\mathrm{plus0Left} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \mathrm{plus0} \gg (\underline{\mathsf{x}} + 0) = \underline{\mathsf{x}}; \mathrm{plusCommutativity} \gg (0 + \underline{\mathsf{x}}) = (\underline{\mathsf{x}} + 0); \mathrm{eqTransitivity} \rhd (0 + \underline{\mathsf{x}}) = (\underline{\mathsf{x}} + 0) \rhd (\underline{\mathsf{x}} + 0) = \underline{\mathsf{x}} \gg (0 + \underline{\mathsf{x}}) = \underline{\mathsf{x}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{times1Left} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon (1 * \underline{\mathsf{x}}) = \underline{\mathsf{x}}]$

$[\mathrm{times1Left} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \mathrm{times1} \gg (\underline{\mathsf{x}} * 1) = \underline{\mathsf{x}}; \mathrm{timesCommutativity} \gg (1 * \underline{\mathsf{x}}) = (\underline{\mathsf{x}} * 1); \mathrm{eqTransitivity} \rhd (1 * \underline{\mathsf{x}}) = (\underline{\mathsf{x}} * 1) \rhd (\underline{\mathsf{x}} * 1) = \underline{\mathsf{x}} \gg (1 * \underline{\mathsf{x}}) = \underline{\mathsf{x}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{Induction} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \langle\underline{\mathsf{b}} \equiv \underline{\mathsf{a}} | \underline{(\mathrm{v1})} := = 0\rangle_{\mathrm{Me}} \Vdash \langle\underline{\mathsf{c}} \equiv \underline{\mathsf{a}} | \underline{(\mathrm{v1})} := = (\underline{(\mathrm{v1})} + 1)\rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{b}} \vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{c}} \vdash \underline{\mathsf{a}}]$

$[\mathrm{Induction} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \forall\underline{\mathsf{c}}\colon \langle\underline{\mathsf{b}} \equiv \underline{\mathsf{a}} | \underline{(\mathrm{v1})} := = 0\rangle_{\mathrm{Me}} \Vdash \langle\underline{\mathsf{c}} \equiv \underline{\mathsf{a}} | \underline{(\mathrm{v1})} := = (\underline{(\mathrm{v1})} + 1)\rangle_{\mathrm{Me}} \Vdash \underline{\mathsf{b}} \vdash \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{c}} \vdash \mathrm{Gen} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{c}} \gg \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{c}}; \mathrm{InductionAxiom} \unrhd \langle\underline{\mathsf{b}} \equiv \underline{\mathsf{a}} | \underline{(\mathrm{v1})} := = 0\rangle_{\mathrm{Me}} \unrhd \langle\underline{\mathsf{c}} \equiv \underline{\mathsf{a}} | \underline{(\mathrm{v1})} := = (\underline{(\mathrm{v1})} + 1)\rangle_{\mathrm{Me}} \gg \underline{\mathsf{b}} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{c}} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}}; \mathrm{MP2} \rhd \underline{\mathsf{b}} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{c}} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \rhd \underline{\mathsf{b}} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{c}} \gg \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}}; \mathrm{A4} @ \underline{(\mathrm{v1})} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \underline{\mathsf{a}} \gg \underline{\mathsf{a}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToSeries} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{sy})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})} \vdash \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n} \vdash \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

[ToSeries $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{fx})}: \forall \underline{(\mathrm{sy})}: \forall_{\mathrm{obj}} \overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})} \vdash \forall_{\mathrm{obj}} \overline{(\mathrm{s1})}: \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}: \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n} \vdash$
Repetition $\rhd \forall_{\mathrm{obj}} \overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}} \overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n};$ JoinConjuncts $\rhd \forall_{\mathrm{obj}} \overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd$
$\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n};$ Repetition $\rhd \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n};$ JoinConjuncts $\rhd \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}: \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \rhd \forall_{\mathrm{obj}} \overline{(\mathrm{s1})}: \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}: \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$

$\dot\neg(\forall_{obj}\overline{(op1)}{:}\, \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\, \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}{:}\, \forall_{obj}\overline{(f2)}{:}\, \forall_{obj}\overline{(f3)}{:}\, \forall_{obj}\overline{(f4)}{:}\, \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}{:}\, \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}{:}\, \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n; \mathrm{Repetition} \rhd \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}{:}\, \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\, \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\, \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}{:}\, \forall_{obj}\overline{(f2)}{:}\, \forall_{obj}\overline{(f3)}{:}\, \forall_{obj}\overline{(f4)}{:}\, \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}{:}\, \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}{:}\, \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}{:}\, \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\, \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\, \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}{:}\, \forall_{obj}\overline{(f2)}{:}\, \forall_{obj}\overline{(f3)}{:}\, \forall_{obj}\overline{(f4)}{:}\, \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}{:}\, \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}{:}\, \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{FromSeries} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(fx)}{:}\, \forall\underline{(sy)}{:}\, \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}{:}\, \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\, \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\, \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}{:}\, \forall_{obj}\overline{(f2)}{:}\, \forall_{obj}\overline{(f3)}{:}\, \forall_{obj}\overline{(f4)}{:}\, \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}{:}\, \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}{:}\, \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \vdash \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}{:}\, \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\, \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\, \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}{:}\, \forall_{obj}\overline{(f2)}{:}\, \forall_{obj}\overline{(f3)}{:}\, \forall_{obj}\overline{(f4)}{:}\, \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}{:}\, \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}{:}\, \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fx)})n)n)n)n]$

$[\mathrm{FromSeries} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(fx)}{:}\, \forall\underline{(sy)}{:}\, \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}{:}\, \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\, \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\, \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}{:}\, \forall_{obj}\overline{(f2)}{:}\, \forall_{obj}\overline{(f3)}{:}\, \forall_{obj}\overline{(f4)}{:}\, \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}{:}\, \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}{:}\, \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \vdash \mathrm{Repetition} \rhd \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}{:}\, \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\, \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\, \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$

$\dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \text{Repetition} \rhd \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \text{Repetition} \rhd \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \text{Repetition} \rhd \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})}\in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})}\in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})}\in\underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\}\in\underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})}=\overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})}\in \mathrm{N}\Rightarrow\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon\dot\neg(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\}\in\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{NeqSymmetry} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon\forall\underline{\mathsf{y}}\colon \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n} \vdash \dot\neg(\underline{\mathsf{y}} = \underline{\mathsf{x}})\mathrm{n}]$

$[\mathrm{NeqSymmetry} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon\forall\underline{\mathsf{y}}\colon \underline{\mathsf{y}} = \underline{\mathsf{x}} \vdash \mathrm{eqSymmetry} \rhd \underline{\mathsf{y}} = \underline{\mathsf{x}} \gg \underline{\mathsf{x}} = \underline{\mathsf{y}}; \forall\underline{\mathsf{x}}\colon\forall\underline{\mathsf{y}}\colon \mathrm{Ded} \rhd \forall\underline{\mathsf{x}}\colon\forall\underline{\mathsf{y}}\colon \underline{\mathsf{y}} = \underline{\mathsf{x}} \vdash \underline{\mathsf{x}} = \underline{\mathsf{y}} \gg \underline{\mathsf{y}} = \underline{\mathsf{x}} \Rightarrow \underline{\mathsf{x}} = \underline{\mathsf{y}}; \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n} \vdash \mathrm{MT} \rhd \underline{\mathsf{y}} = \underline{\mathsf{x}} \Rightarrow \underline{\mathsf{x}} = \underline{\mathsf{y}} \rhd \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n} \gg \dot\neg(\underline{\mathsf{y}} = \underline{\mathsf{x}})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveNonzero} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(\underline{\mathsf{x}} = 0)\mathrm{n}]$

$[\mathrm{PositiveNonzero} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{Repetition} \rhd \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 = \underline{\mathsf{x}})\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot\neg(0 = \underline{\mathsf{x}})\mathrm{n} \gg \dot\neg(\underline{\mathsf{x}} = 0)\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SubNeqLeft} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon\forall\underline{\mathsf{y}}\colon\forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{z}})\mathrm{n} \vdash \dot\neg(\underline{\mathsf{y}} = \underline{\mathsf{z}})\mathrm{n}]$

$[\mathrm{SubNeqLeft} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon\forall\underline{\mathsf{y}}\colon\forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{z}})\mathrm{n} \vdash \mathrm{EqualityAxiom} \gg \underline{\mathsf{y}} = \underline{\mathsf{x}} \Rightarrow \underline{\mathsf{y}} = \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{x}} = \underline{\mathsf{z}}; \mathrm{eqSymmetry} \rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \gg \underline{\mathsf{y}} = \underline{\mathsf{x}}; \mathrm{MP} \rhd \underline{\mathsf{y}} = \underline{\mathsf{x}} \Rightarrow \underline{\mathsf{y}} = \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{x}} = \underline{\mathsf{z}} \rhd \underline{\mathsf{y}} = \underline{\mathsf{x}} \gg \underline{\mathsf{y}} = \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{x}} = \underline{\mathsf{z}}; \mathrm{Contrapositive} \rhd \underline{\mathsf{y}} = \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{x}} = \underline{\mathsf{z}} \gg \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{z}})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{y}} = \underline{\mathsf{z}})\mathrm{n}; \mathrm{MP} \rhd \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{z}})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{y}} = \underline{\mathsf{z}})\mathrm{n} \rhd \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{z}})\mathrm{n} \gg \dot\neg(\underline{\mathsf{y}} = \underline{\mathsf{z}})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{InPair}(1) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}]$

$[\mathrm{InPair}(1) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon \mathrm{eqReflexivity} \gg \underline{(\mathrm{sx})} = \underline{(\mathrm{sx})}; \mathrm{WeakenOr2} \rhd \underline{(\mathrm{sx})} = \underline{(\mathrm{sx})} \gg \dot\neg(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx})})\mathrm{n} \Rightarrow \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}; \mathrm{Formula2Pair} \rhd \dot\neg(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx})})\mathrm{n} \Rightarrow \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \gg \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{InPair}(2) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon \underline{(\mathrm{sy})} \in \{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}]$

$[\mathrm{InPair}(2) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon \mathrm{eqReflexivity} \gg \underline{(\mathrm{sy})} = \underline{(\mathrm{sy})}; \mathrm{WeakenOr1} \rhd \underline{(\mathrm{sy})} = \underline{(\mathrm{sy})} \gg \dot\neg(\underline{(\mathrm{sy})} = \underline{(\mathrm{sx})})\mathrm{n} \Rightarrow \underline{(\mathrm{sy})} = \underline{(\mathrm{sy})}; \mathrm{Formula2Pair} \rhd \dot\neg(\underline{(\mathrm{sy})} = \underline{(\mathrm{sx})})\mathrm{n} \Rightarrow \underline{(\mathrm{sy})} = \underline{(\mathrm{sy})} \gg \underline{(\mathrm{sy})} \in \{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromSingleton} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sy})}\} \vdash \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}]$

$[\mathrm{FromSingleton} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sy})}\} \vdash \mathrm{Repetition} \rhd \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sy})}\} \gg \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sy})}\}; \mathrm{Pair2Formula} \rhd \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sy})}\} \gg \dot\neg(\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})})\mathrm{n} \Rightarrow \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}; \mathrm{RemoveOr} \rhd \dot\neg(\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})})\mathrm{n} \Rightarrow \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \gg \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToSingleton} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \vdash \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sy})}\}]$

[ToSingleton $\overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \vdash \mathrm{WeakenOr1} \rhd \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \gg \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})})\mathrm{n} \Rightarrow \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}; \mathrm{Formula2Pair} \rhd \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})})\mathrm{n} \Rightarrow \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \gg \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})}, \underline{(\mathrm{sy})}\}; \mathrm{Repetition} \rhd \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})}, \underline{(\mathrm{sy})}\} \gg \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})}, \underline{(\mathrm{sy})}\}\rceil, \mathrm{p}_0, \mathsf{c})$]

[FromSameSingleton $\overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\} = \{\underline{(\mathrm{sy})}, \underline{(\mathrm{sy})}\} \vdash \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}$]

[FromSameSingleton $\overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\} = \{\underline{(\mathrm{sy})}, \underline{(\mathrm{sy})}\} \vdash \mathrm{eqReflexivity} \gg \underline{(\mathrm{sx})} = \underline{(\mathrm{sx})}; \mathrm{ToSingleton} \rhd \underline{(\mathrm{sx})} = \underline{(\mathrm{sx})} \gg \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}; \mathrm{SENC1} \rhd \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\} = \{\underline{(\mathrm{sy})}, \underline{(\mathrm{sy})}\} \rhd \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\} \gg \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})}, \underline{(\mathrm{sy})}\}; \mathrm{FromSingleton} \rhd \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sy})}, \underline{(\mathrm{sy})}\} \gg \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}\rceil, \mathrm{p}_0, \mathsf{c})$]

[SingletonmembersEqual $\overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \forall \underline{(\mathrm{sz})}\colon \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \vdash \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}$]

[SingletonmembersEqual $\overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \forall \underline{(\mathrm{sz})}\colon \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \vdash \mathrm{InPair}(1) \gg \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}; \mathrm{SENC1} \rhd \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \rhd \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} \gg \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\}; \mathrm{FromSingleton} \rhd \underline{(\mathrm{sx})} \in \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \gg \underline{(\mathrm{sx})} = \underline{(\mathrm{sz})}; \mathrm{InPair}(2) \gg \underline{(\mathrm{sy})} \in \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}; \mathrm{SENC1} \rhd \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \rhd \underline{(\mathrm{sy})} \in \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} \gg \underline{(\mathrm{sy})} \in \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\}; \mathrm{FromSingleton} \rhd \underline{(\mathrm{sy})} \in \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \gg \underline{(\mathrm{sy})} = \underline{(\mathrm{sz})}; \mathrm{eqSymmetry} \rhd \underline{(\mathrm{sy})} = \underline{(\mathrm{sz})} \gg \underline{(\mathrm{sz})} = \underline{(\mathrm{sy})}; \mathrm{eqTransitivity} \rhd \underline{(\mathrm{sx})} = \underline{(\mathrm{sz})} \rhd \underline{(\mathrm{sz})} = \underline{(\mathrm{sy})} \gg \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}\rceil, \mathrm{p}_0, \mathsf{c})$]

[UnequalsNotInSingleton $\overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \forall \underline{(\mathrm{sz})}\colon \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})})\mathrm{n} \vdash \dot{\neg}\,(\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\})\mathrm{n}$]

[UnequalsNotInSingleton $\overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \forall \underline{(\mathrm{sz})}\colon \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \vdash \mathrm{SingletonmembersEqual} \rhd \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \gg \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}; \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \forall \underline{(\mathrm{sz})}\colon \mathrm{Ded} \rhd \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \forall \underline{(\mathrm{sz})}\colon \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \vdash \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \gg \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \Rightarrow \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})}; \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})})\mathrm{n} \vdash \mathrm{MT} \rhd \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\} \Rightarrow \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \rhd \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})})\mathrm{n} \gg \dot{\neg}\,(\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sz})}, \underline{(\mathrm{sz})}\})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})$]

[NonsingletonmembersUnequal $\overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \dot{\neg}\,(\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\})\mathrm{n} \vdash \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})})\mathrm{n}$]

[NonsingletonmembersUnequal $\overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \vdash \mathrm{eqReflexivity} \gg \underline{(\mathrm{sx})} = \underline{(\mathrm{sx})}; \mathrm{SamePair} \rhd \underline{(\mathrm{sx})} = \underline{(\mathrm{sx})} \rhd \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \gg \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}; \mathrm{Repetition} \rhd \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} \gg \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}; \mathrm{eqSymmetry} \rhd \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} \gg \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}; \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \mathrm{Ded} \rhd \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sy})}\colon \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \vdash \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\} \gg \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \Rightarrow \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}; \dot{\neg}\,(\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\})\mathrm{n} \vdash \mathrm{MT} \rhd \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \Rightarrow \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\} \rhd \dot{\neg}\,(\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\} = \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\})\mathrm{n} \gg \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})$]

[FromOrderedPair $\overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{sx})}\colon \forall \underline{(\mathrm{sx1})}\colon \forall \underline{(\mathrm{sy})}\colon \forall \underline{(\mathrm{sy1})}\colon \{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sx1})}\}, \{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}\} \vdash \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}$]

[FromOrderedPair $\stackrel{\text{proof}}{\rightarrow}$ λc.λx.𝒫(⌈SystemQ ⊢
∀(sx): ∀(sx1): ∀(sy): ∀(sy1): (sx1) = (sy1) ⊢ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}} ⊢ Repetition ▷ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}} ≫ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}}; eqReflexivity ≫ (sx1) =
(sx1); SamePair ▷ (sx1) = (sx1) ▷ (sx1) = (sy1) ≫ {(sx1), (sx1)} =
{(sx1), (sy1)}; Repetition ▷ {(sx1), (sx1)} = {(sx1), (sy1)} ≫ {(sx1), (sx1)} =
{(sx1), (sy1)}; eqReflexivity ≫ {(sx1), (sx1)} =
{(sx1), (sx1)}; SamePair ▷ {(sx1), (sx1)} = {(sx1), (sx1)} ▷ {(sx1), (sx1)} =
{(sx1), (sy1)} ≫ {{(sx1), (sx1)}, {(sx1), (sx1)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}}; Repetition ▷ {{(sx1), (sx1)}, {(sx1), (sx1)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}} ≫ {{(sx1), (sx1)}, {(sx1), (sx1)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}}; eqSymmetry ▷ {{(sx1), (sx1)}, {(sx1), (sx1)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}} ≫ {{(sx1), (sx1)}, {(sx1), (sy1)}} =
{{(sx1), (sx1)}, {(sx1), (sx1)}}; eqTransitivity ▷ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}} ▷ {{(sx1), (sx1)}, {(sx1), (sy1)}} =
{{(sx1), (sx1)}, {(sx1), (sx1)}} ≫ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx1), (sx1)}, {(sx1), (sx1)}}; InPair(1) ≫ {(sx), (sx)} ∈
{{(sx), (sx)}, {(sx), (sy)}}; SENC1 ▷ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx1), (sx1)}, {(sx1), (sx1)}} ▷ {(sx), (sx)} ∈ {{(sx), (sx)}, {(sx), (sy)}} ≫
{(sx), (sx)} ∈ {{(sx1), (sx1)}, {(sx1), (sx1)}}; FromSingleton ▷ {(sx), (sx)} ∈
{{(sx1), (sx1)}, {(sx1), (sx1)}} ≫ {(sx), (sx)} =
{(sx1), (sx1)}; FromSameSingleton ▷ {(sx), (sx)} = {(sx1), (sx1)} ≫ (sx) =
(sx1); eqSymmetry ▷ {(sx), (sx)} = {(sx1), (sx1)} ≫ {(sx1), (sx1)} =
{(sx), (sx)}; SameSingleton ▷ {(sx1), (sx1)} = {(sx), (sx)} ≫
{{(sx1), (sx1)}, {(sx1), (sx1)}} =
{{(sx), (sx)}, {(sx), (sx)}}; eqTransitivity ▷ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx1), (sx1)}, {(sx1), (sx1)}} ▷ {{(sx1), (sx1)}, {(sx1), (sx1)}} =
{{(sx), (sx)}, {(sx), (sx)}} ≫ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx), (sx)}, {(sx), (sx)}}; InPair(2) ≫ {(sx), (sy)} ∈
{{(sx), (sx)}, {(sx), (sy)}}; SENC1 ▷ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx), (sx)}, {(sx), (sx)}} ▷ {(sx), (sy)} ∈ {{(sx), (sx)}, {(sx), (sy)}} ≫
{(sx), (sy)} ∈ {{(sx), (sx)}, {(sx), (sx)}}; FromSingleton ▷ {(sx), (sy)} ∈
{{(sx), (sx)}, {(sx), (sx)}} ≫ {(sx), (sy)} =
{(sx), (sx)}; SingletonmembersEqual ▷ {(sx), (sy)} = {(sx), (sx)} ≫ (sx) =
(sy); eqSymmetry ▷ (sx) = (sy) ≫ (sy) = (sx); eqTransitivity4 ▷ (sy) =
(sx) ▷ (sx) = (sx1) ▷ (sx1) = (sy1) ≫ (sy) = (sy1); JoinConjuncts ▷ (sx) =
(sx1) ▷ (sy) = (sy1) ≫ $\dot{\neg}$((sx) = (sx1) ⇒ $\dot{\neg}$((sy) =
(sy1))n)n; ∀(sx): ∀(sx1): ∀(sy): ∀(sy1): $\dot{\neg}$((sx1) = (sy1))n ⊢
{{(sx), (sx)}, {(sx), (sy)}} = {{(sx1), (sx1)}, {(sx1), (sy1)}} ⊢
Repetition ▷ {{(sx), (sx)}, {(sx), (sy)}} = {{(sx1), (sx1)}, {(sx1), (sy1)}} ≫
{{(sx), (sx)}, {(sx), (sy)}} = {{(sx1), (sx1)}, {(sx1), (sy1)}}; InPair(1) ≫
{(sx), (sx)} ∈ {{(sx), (sx)}, {(sx), (sy)}}; SENC1 ▷ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}} ▷ {(sx), (sx)} ∈ {{(sx), (sx)}, {(sx), (sy)}} ≫
{(sx), (sx)} ∈ {{(sx1), (sx1)}, {(sx1), (sy1)}}; Pair2Formula ▷ {(sx), (sx)} ∈

$\{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \gg \dot{\neg}(\{\overline{(sx)}, \overline{(sx)}\} = \{\overline{(sx1)}, \overline{(sx1)}\})\mathrm{n} \Rightarrow \{\overline{(sx)}, \overline{(sx)}\} = \{\overline{(sx1)}, \overline{(sy1)}\}; \mathrm{UnequalsNotInSingleton} \rhd \dot{\neg}(\overline{(sx1)} = \overline{(sy1)})\mathrm{n} \gg \dot{\neg}(\{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sx)}\})\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot{\neg}(\{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sx)}\})\mathrm{n} \gg \dot{\neg}(\{\overline{(sx)}, \overline{(sx)}\} = \{\overline{(sx1)}, \overline{(sy1)}\})\mathrm{n}; \mathrm{NegateDisjunct2} \rhd \dot{\neg}(\{\overline{(sx)}, \overline{(sx)}\} = \{\overline{(sx1)}, \overline{(sx1)}\})\mathrm{n} \Rightarrow \{\overline{(sx)}, \overline{(sx)}\} = \{\overline{(sx1)}, \overline{(sy1)}\} \rhd \dot{\neg}(\{\overline{(sx)}, \overline{(sx)}\} = \{\overline{(sx1)}, \overline{(sy1)}\})\mathrm{n} \gg \{\overline{(sx)}, \overline{(sx)}\} = \{\overline{(sx1)}, \overline{(sx1)}\}; \mathrm{FromSameSingleton} \rhd \{\overline{(sx)}, \overline{(sx)}\} = \{\overline{(sx1)}, \overline{(sx1)}\} \gg \overline{(sx)} = \overline{(sx1)}; \mathrm{InPair}(2) \gg \{\overline{(sx1)}, \overline{(sy1)}\} \in \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\}; \mathrm{SENC2} \rhd \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \rhd \{\overline{(sx1)}, \overline{(sy1)}\} \in \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \gg \{\overline{(sx1)}, \overline{(sy1)}\} \in \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\}; \mathrm{Pair2Formula} \rhd \{\overline{(sx1)}, \overline{(sy1)}\} \in \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} \gg \dot{\neg}(\{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sx)}\})\mathrm{n} \Rightarrow \{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sy)}\}; \mathrm{NegateDisjunct1} \rhd \dot{\neg}(\{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sx)}\})\mathrm{n} \Rightarrow \{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sy)}\} \rhd \dot{\neg}(\{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sx)}\})\mathrm{n} \gg \{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sy)}\}; \mathrm{InPair}(2) \gg \overline{(sy)} \in \{\overline{(sx)}, \overline{(sy)}\}; \mathrm{SENC2} \rhd \{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sy)}\} \rhd \overline{(sy)} \in \{\overline{(sx)}, \overline{(sy)}\} \gg \overline{(sy)} \in \{\overline{(sx1)}, \overline{(sy1)}\}; \mathrm{Pair2Formula} \rhd \overline{(sy)} \in \{\overline{(sx1)}, \overline{(sy1)}\} \gg \dot{\neg}(\overline{(sy)} = \overline{(sx1)})\mathrm{n} \Rightarrow \overline{(sy)} = \overline{(sy1)}; \mathrm{UnequalsNotInSingleton} \rhd \dot{\neg}(\overline{(sx1)} = \overline{(sy1)})\mathrm{n} \gg \dot{\neg}(\{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sx)}\})\mathrm{n}; \mathrm{SubNeqLeft} \rhd \{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sy)}\} \rhd \dot{\neg}(\{\overline{(sx1)}, \overline{(sy1)}\} = \{\overline{(sx)}, \overline{(sx)}\})\mathrm{n} \gg \dot{\neg}(\{\overline{(sx)}, \overline{(sy)}\} = \{\overline{(sx)}, \overline{(sx)}\})\mathrm{n}; \mathrm{NonsingletonmembersUnequal} \rhd \dot{\neg}(\{\overline{(sx)}, \overline{(sy)}\} = \{\overline{(sx)}, \overline{(sx)}\})\mathrm{n} \gg \dot{\neg}(\overline{(sx)} = \overline{(sy)})\mathrm{n}; \mathrm{SubNeqLeft} \rhd \overline{(sx)} = \overline{(sx1)} \rhd \dot{\neg}(\overline{(sx)} = \overline{(sy)})\mathrm{n} \gg \dot{\neg}(\overline{(sx1)} = \overline{(sy)})\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot{\neg}(\overline{(sx1)} = \overline{(sy)})\mathrm{n} \gg \dot{\neg}(\overline{(sy)} = \overline{(sx1)})\mathrm{n}; \mathrm{NegateDisjunct1} \rhd \dot{\neg}(\overline{(sy)} = \overline{(sx1)})\mathrm{n} \Rightarrow \overline{(sy)} = \overline{(sy1)} \rhd \dot{\neg}(\overline{(sy)} = \overline{(sx1)})\mathrm{n} \gg \overline{(sy)} = \overline{(sy1)}; \mathrm{JoinConjuncts} \rhd \overline{(sx)} = \overline{(sx1)} \rhd \overline{(sy)} = \overline{(sy1)} \gg \dot{\neg}(\overline{(sx)} = \overline{(sx1)} \Rightarrow \dot{\neg}(\overline{(sy)} = \overline{(sy1)})\mathrm{n})\mathrm{n}; \forall\overline{(sx)}: \forall\overline{(sx1)}: \forall\overline{(sy)}: \forall\overline{(sy1)}: \mathrm{Ded} \rhd \forall\overline{(sx)}: \forall\overline{(sx1)}: \forall\overline{(sy)}: \forall\overline{(sy1)}: \overline{(sx1)} = \overline{(sy1)} \vdash \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \vdash \dot{\neg}(\overline{(sx)} = \overline{(sx1)} \Rightarrow \dot{\neg}(\overline{(sy)} = \overline{(sy1)})\mathrm{n})\mathrm{n} \gg \overline{(sx1)} = \overline{(sy1)} \Rightarrow \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \Rightarrow \dot{\neg}(\overline{(sx)} = \overline{(sx1)} \Rightarrow \dot{\neg}(\overline{(sy)} = \overline{(sy1)})\mathrm{n})\mathrm{n}; \mathrm{Ded} \rhd \forall\overline{(sx)}: \forall\overline{(sx1)}: \forall\overline{(sy)}: \forall\overline{(sy1)}: \dot{\neg}(\overline{(sx1)} = \overline{(sy1)})\mathrm{n} \vdash \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \vdash \dot{\neg}(\overline{(sx)} = \overline{(sx1)} \Rightarrow \dot{\neg}(\overline{(sy)} = \overline{(sy1)})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\overline{(sx1)} = \overline{(sy1)})\mathrm{n} \Rightarrow \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \Rightarrow \dot{\neg}(\overline{(sx)} = \overline{(sx1)} \Rightarrow \dot{\neg}(\overline{(sy)} = \overline{(sy1)})\mathrm{n})\mathrm{n}; \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \vdash \mathrm{FromNegations} \rhd \overline{(sx1)} = \overline{(sy1)} \Rightarrow \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \Rightarrow \dot{\neg}(\overline{(sx)} = \overline{(sx1)} \Rightarrow \dot{\neg}(\overline{(sy)} = \overline{(sy1)})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\overline{(sx1)} = \overline{(sy1)})\mathrm{n} \Rightarrow \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \Rightarrow \dot{\neg}(\overline{(sx)} = \overline{(sx1)} \Rightarrow \dot{\neg}(\overline{(sy)} = \overline{(sy1)})\mathrm{n})\mathrm{n} \gg \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \Rightarrow \dot{\neg}(\overline{(sx)} = \overline{(sx1)} \Rightarrow \dot{\neg}(\overline{(sy)} = \overline{(sy1)})\mathrm{n})\mathrm{n}; \mathrm{MP} \rhd \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \Rightarrow \dot{\neg}(\overline{(sx)} = \overline{(sx1)} \Rightarrow \dot{\neg}(\overline{(sy)} = \overline{(sy1)})\mathrm{n})\mathrm{n} \rhd \{\{\overline{(sx)}, \overline{(sx)}\}, \{\overline{(sx)}, \overline{(sy)}\}\} = \{\{\overline{(sx1)}, \overline{(sx1)}\}, \{\overline{(sx1)}, \overline{(sy1)}\}\} \gg \dot{\neg}(\overline{(sx)} = \overline{(sx1)} \Rightarrow \dot{\neg}(\overline{(sy)} = \overline{(sy1)})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromOrderedPair}(1) \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$

$\forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sx1})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sy1})}\colon\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \vdash \underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})}]$

$[\mathrm{FromOrderedPair}(1) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sx1})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sy1})}\colon\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \vdash \mathrm{FromOrderedPair} \rhd \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \gg \dot{\neg}(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromOrderedPair}(2) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sx1})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sy1})}\colon\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \vdash \underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})}]$

$[\mathrm{FromOrderedPair}(2) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sx1})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sy1})}\colon\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \vdash \mathrm{FromOrderedPair} \rhd \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \gg \dot{\neg}(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SameMember}(2) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sz})}\colon\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \vdash \underline{(\mathrm{sy})} \in \underline{(\mathrm{sz})} \vdash \underline{(\mathrm{sx})} \in \underline{(\mathrm{sz})}]$

$[\mathrm{SameMember}(2) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sz})}\colon\underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \vdash \underline{(\mathrm{sy})} \in \underline{(\mathrm{sz})} \vdash \mathrm{eqSymmetry} \rhd \underline{(\mathrm{sx})} = \underline{(\mathrm{sy})} \gg \underline{(\mathrm{sy})} = \underline{(\mathrm{sx})}; \mathrm{SameMember} \rhd \underline{(\mathrm{sy})} = \underline{(\mathrm{sx})} \rhd \underline{(\mathrm{sy})} \in \underline{(\mathrm{sz})} \gg \underline{(\mathrm{sx})} \in \underline{(\mathrm{sz})}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToBinaryUnion}(1) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sz})}\colon\forall\underline{(\mathrm{su})}\colon\underline{(\mathrm{sx})} \in \underline{(\mathrm{sy})} \vdash \underline{(\mathrm{sx})} \in \mathrm{Union}(\{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})]$

$[\mathrm{ToBinaryUnion}(1) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sz})}\colon\forall\underline{(\mathrm{su})}\colon\underline{(\mathrm{sx})} \in \underline{(\mathrm{sy})} \vdash \mathrm{InPair}(1) \gg \underline{(\mathrm{sy})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\}; \mathrm{JoinConjuncts} \rhd \underline{(\mathrm{sx})} \in \underline{(\mathrm{sy})} \rhd \underline{(\mathrm{sy})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\} \gg \dot{\neg}(\underline{(\mathrm{sx})} \in \underline{(\mathrm{sy})} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})\mathrm{n})\mathrm{n}; \mathrm{IntroExist} @ \underline{(\mathrm{sy})} \rhd \dot{\neg}(\underline{(\mathrm{sx})} \in \underline{(\mathrm{sy})} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{su})}\colon\dot{\neg}(\dot{\neg}(\underline{(\mathrm{sx})} \in \underline{(\mathrm{su})} \Rightarrow \dot{\neg}(\underline{(\mathrm{su})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Formula2Union} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{su})}\colon\dot{\neg}(\dot{\neg}(\underline{(\mathrm{sx})} \in \underline{(\mathrm{su})} \Rightarrow \dot{\neg}(\underline{(\mathrm{su})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{sx})} \in \mathrm{Union}(\{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\}); \mathrm{Repetition} \rhd \underline{(\mathrm{sx})} \in \mathrm{Union}(\{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\}) \gg \underline{(\mathrm{sx})} \in \mathrm{Union}(\{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToBinaryUnion}(2) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sz})}\colon\forall\underline{(\mathrm{su})}\colon\underline{(\mathrm{sx})} \in \underline{(\mathrm{sz})} \vdash \underline{(\mathrm{sx})} \in \mathrm{Union}(\{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})]$

$[\mathrm{ToBinaryUnion}(2) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sz})}\colon\forall\underline{(\mathrm{su})}\colon\underline{(\mathrm{sx})} \in \underline{(\mathrm{sz})} \vdash \mathrm{InPair}(2) \gg \underline{(\mathrm{sz})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\}; \mathrm{JoinConjuncts} \rhd \underline{(\mathrm{sx})} \in \underline{(\mathrm{sz})} \rhd \underline{(\mathrm{sz})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\} \gg \dot{\neg}(\underline{(\mathrm{sx})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}(\underline{(\mathrm{sz})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})\mathrm{n})\mathrm{n}; \mathrm{IntroExist} @ \underline{(\mathrm{sz})} \rhd \dot{\neg}(\underline{(\mathrm{sx})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}(\underline{(\mathrm{sz})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{su})}\colon\dot{\neg}(\dot{\neg}(\underline{(\mathrm{sx})} \in \underline{(\mathrm{su})} \Rightarrow \dot{\neg}(\underline{(\mathrm{su})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Formula2Union} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{su})}\colon\dot{\neg}(\dot{\neg}(\underline{(\mathrm{sx})} \in \underline{(\mathrm{su})} \Rightarrow \dot{\neg}(\underline{(\mathrm{su})} \in \{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{sx})} \in \mathrm{Union}(\{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\}); \mathrm{Repetition} \rhd \underline{(\mathrm{sx})} \in \mathrm{Union}(\{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\}) \gg \underline{(\mathrm{sx})} \in \mathrm{Union}(\{\underline{(\mathrm{sy})},\underline{(\mathrm{sz})}\})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromOrderedPair}(\mathrm{TwoLevels}) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sz})}\colon\forall\underline{(\mathrm{su})}\colon\underline{(\mathrm{sx})} \in$

$\underline{(sy)} \vdash \underline{(sy)} \in \{\{\underline{(sz)},\underline{(sz)}\},\{\underline{(sz)},\underline{(su)}\}\} \vdash \dot{\neg}(\underline{(sx)}=\underline{(sz)})n \Rightarrow \underline{(sx)}=\underline{(su)}]$

[FromOrderedPair(TwoLevels) $\stackrel{\text{proof}}{\to}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon\forall\underline{(sz)}\colon\forall\underline{(su)}\colon \underline{(sx)} \in \underline{(sy)} \vdash \underline{(sy)} \in \{\{\underline{(sz)},\underline{(sz)}\},\{\underline{(sz)},\underline{(su)}\}\} \vdash$ Repetition $\rhd \underline{(sy)} \in \{\{\underline{(sz)},\underline{(sz)}\},\{\underline{(sz)},\underline{(su)}\}\} \gg \underline{(sy)} \in \{\{\underline{(sz)},\underline{(sz)}\},\{\underline{(sz)},\underline{(su)}\}\}$; Pair2Formula $\rhd \underline{(sy)} \in \{\{\underline{(sz)},\underline{(sz)}\},\{\underline{(sz)},\underline{(su)}\}\} \gg \dot{\neg}(\underline{(sy)} = \{\underline{(sz)},\underline{(sz)}\})n \Rightarrow \underline{(sy)} = \{\underline{(sz)},\underline{(su)}\}; \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon\forall\underline{(sz)}\colon\forall\underline{(su)}\colon \underline{(sy)} = \{\underline{(sz)},\underline{(sz)}\} \vdash \underline{(sx)} \in \underline{(sy)} \vdash$ SENC1 $\rhd \underline{(sy)} = \{\underline{(sz)},\underline{(sz)}\} \rhd \underline{(sx)} \in \underline{(sy)} \gg \underline{(sx)} \in \{\underline{(sz)},\underline{(sz)}\}$; FromSingleton $\rhd \underline{(sx)} \in \{\underline{(sz)},\underline{(sz)}\} \gg \underline{(sx)} = \underline{(sz)}$; WeakenOr2 $\rhd \underline{(sx)} = \underline{(sz)} \gg \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)}; \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon\forall\underline{(sz)}\colon\forall\underline{(su)}\colon \underline{(sy)} = \{\underline{(sz)},\underline{(su)}\} \vdash \underline{(sx)} \in \underline{(sy)} \vdash$ SENC1 $\rhd \underline{(sy)} = \{\underline{(sz)},\underline{(su)}\} \rhd \underline{(sx)} \in \underline{(sy)} \gg \underline{(sx)} \in \{\underline{(sz)},\underline{(su)}\}$; Pair2Formula $\rhd \underline{(sx)} \in \{\underline{(sz)},\underline{(su)}\} \gg \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)}$; Ded $\rhd \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon\forall\underline{(sz)}\colon\forall\underline{(su)}\colon \underline{(sy)} = \{\underline{(sz)},\underline{(sz)}\} \vdash \underline{(sx)} \in \underline{(sy)} \vdash \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)} \gg \underline{(sy)} = \{\underline{(sz)},\underline{(sz)}\} \Rightarrow \underline{(sx)} \in \underline{(sy)} \Rightarrow \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)}$; Ded $\rhd \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon\forall\underline{(sz)}\colon\forall\underline{(su)}\colon \underline{(sy)} = \{\underline{(sz)},\underline{(su)}\} \vdash \underline{(sx)} \in \underline{(sy)} \vdash \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)} \gg \underline{(sy)} = \{\underline{(sz)},\underline{(su)}\} \Rightarrow \underline{(sx)} \in \underline{(sy)} \Rightarrow \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)}$; FromDisjuncts $\rhd \dot{\neg}(\underline{(sy)} = \{\underline{(sz)},\underline{(sz)}\})n \Rightarrow \underline{(sy)} = \{\underline{(sz)},\underline{(su)}\} \rhd \underline{(sy)} = \{\underline{(sz)},\underline{(sz)}\} \Rightarrow \underline{(sx)} \in \underline{(sy)} \Rightarrow \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)} \rhd \underline{(sy)} = \{\underline{(sz)},\underline{(su)}\} \Rightarrow \underline{(sx)} \in \underline{(sy)} \Rightarrow \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)} \gg \underline{(sx)} \in \underline{(sy)} \Rightarrow \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)}$; MP $\rhd \underline{(sx)} \in \underline{(sy)} \Rightarrow \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)} \rhd \underline{(sx)} \in \underline{(sy)} \gg \dot{\neg}(\underline{(sx)} = \underline{(sz)})n \Rightarrow \underline{(sx)} = \underline{(su)}\rceil, p_0, \mathsf{c})]$

[CartProdIsRelation $\stackrel{\text{stmt}}{\to}$ SystemQ $\vdash \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \{ph \in P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n]$

[CartProdIsRelation $\stackrel{\text{proof}}{\to}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon \overline{(r1)} \in \{ph \in P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \vdash$ Sep2Formula $\rhd \overline{(r1)} \in \{ph \in P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \gg \dot{\neg}(\overline{(r1)} \in P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \Rightarrow \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n)n)n$; SecondConjunct $\rhd \dot{\neg}(\overline{(r1)} \in P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \Rightarrow \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n)n)n \gg \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n; \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon$ Ded $\rhd$

$\forall\underline{(sx)}\colon\forall\underline{(sy)}\colon\overline{(r1)} \in \{ph \in P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \vdash$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \gg \overline{(r1)} \in \{ph \in$
$P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(a_{Ph} =$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n; Gen \rhd \overline{(r1)} \in \{ph \in$
$P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(a_{Ph} =$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \gg \forall_{obj}\overline{(r1)}\colon\overline{(r1)} \in \{ph \in$
$P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(a_{Ph} =$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n; Repetition \rhd$
$\forall_{obj}\overline{(r1)}\colon\overline{(r1)} \in \{ph \in P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \gg \forall_{obj}\overline{(r1)}\colon\overline{(r1)} \in \{ph \in$
$P(P(Union(\{\underline{(sx)},\underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(a_{Ph} =$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\rceil, p_0, c)]$

$[FromSubset \overset{stmt}{\rightarrow} SystemQ \vdash \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon\forall\underline{(sz)}\colon\forall_{obj}\overline{(s1)}\colon\overline{(s1)} \in \underline{(sx)} \Rightarrow \overline{(s1)} \in$
$\underline{(sy)} \vdash \underline{(sz)} \in \underline{(sx)} \vdash \underline{(sz)} \in \underline{(sy)}]$

$[FromSubset \overset{proof}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil SystemQ \vdash \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon\forall\underline{(sz)}\colon\forall_{obj}\overline{(s1)}\colon\overline{(s1)} \in$
$\underline{(sx)} \Rightarrow \overline{(s1)} \in \underline{(sy)} \vdash \underline{(sz)} \in \underline{(sx)} \vdash Repetition \rhd \forall_{obj}\overline{(s1)}\colon\overline{(s1)} \in \underline{(sx)} \Rightarrow \overline{(s1)} \in$
$\underline{(sy)} \gg \forall_{obj}\overline{(s1)}\colon\overline{(s1)} \in \underline{(sx)} \Rightarrow \overline{(s1)} \in \underline{(sy)}; A4 @ \underline{(sz)} \rhd \forall_{obj}\overline{(s1)}\colon\overline{(s1)} \in \underline{(sx)} \Rightarrow$
$\overline{(s1)} \in \underline{(sy)} \gg \underline{(sz)} \in \underline{(sx)} \Rightarrow \underline{(sz)} \in \underline{(sy)}; MP \rhd \underline{(sz)} \in \underline{(sx)} \Rightarrow \underline{(sz)} \in \underline{(sy)} \rhd \underline{(sz)} \in$
$\underline{(sx)} \gg \underline{(sz)} \in \underline{(sy)}\rceil, p_0, c)]$

$[SubsetIsRelation \overset{stmt}{\rightarrow} SystemQ \vdash \forall\underline{(sx)}\colon\forall\underline{(sy)}\colon\forall\underline{(sz)}\colon\forall\underline{(su)}\colon\forall_{obj}\overline{(r1)}\colon\overline{(r1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sz)} \Rightarrow \dot{\neg}(\overline{(op2)} \in$

$\underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \underline{(\mathrm{sy})} \Rightarrow \overline{(\mathrm{s1})} \in \underline{(\mathrm{sx})} \vdash \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sy})} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$
$[\mathrm{SubsetIsRelation} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sz})}\colon \forall\underline{(\mathrm{su})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \underline{(\mathrm{sy})} \Rightarrow$
$\overline{(\mathrm{s1})} \in \underline{(\mathrm{sx})} \vdash \overline{(\mathrm{r1})} \in \underline{(\mathrm{sy})} \vdash \mathrm{Repetition} \rhd \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\underline{(\mathrm{sx})} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in$
$\underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{r1})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{A4} @ \overline{(\mathrm{r1})} \rhd \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FromSubset} \rhd$
$\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \underline{(\mathrm{sy})} \Rightarrow \overline{(\mathrm{s1})} \in \underline{(\mathrm{sx})} \rhd \overline{(\mathrm{r1})} \in \underline{(\mathrm{sy})} \gg \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})}; \mathrm{MP} \rhd \overline{(\mathrm{r1})} \in$
$\underline{(\mathrm{sx})} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in$
$\underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \overline{(\mathrm{r1})} \in$
$\underline{(\mathrm{sx})} \gg \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in$
$\underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{r1})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sz})}\colon \forall\underline{(\mathrm{su})}\colon \mathrm{Ded} \rhd$
$\forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sz})}\colon \forall\underline{(\mathrm{su})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \underline{(\mathrm{sy})} \Rightarrow$
$\overline{(\mathrm{s1})} \in \underline{(\mathrm{sx})} \vdash \overline{(\mathrm{r1})} \in \underline{(\mathrm{sy})} \vdash \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow$
$\dot{\neg}\,((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{r1})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in$
$\underline{(\mathrm{sy})} \Rightarrow \overline{(\mathrm{s1})} \in \underline{(\mathrm{sx})} \Rightarrow \overline{(\mathrm{r1})} \in \underline{(\mathrm{sy})} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}\,((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \underline{(\mathrm{sy})} \Rightarrow$

$\overline{(s1)} \in \underline{(sx)} \vdash \mathrm{MP2} \rhd \forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(sx)} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in \underline{(sz)} \Rightarrow \dot{\neg}((\overline{(op2)} \in \underline{(su)})n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in$
$\underline{(sy)} \Rightarrow \overline{(s1)} \in \underline{(sx)} \Rightarrow \overline{(r1)} \in \underline{(sy)} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in \underline{(sz)} \Rightarrow \dot{\neg}((\overline{(op2)} \in \underline{(su)})n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \rhd \forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(sx)} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in \underline{(sz)} \Rightarrow \dot{\neg}((\overline{(op2)} \in \underline{(su)})n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \rhd \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \underline{(sy)} \Rightarrow$
$\overline{(s1)} \in \underline{(sx)} \gg \overline{(r1)} \in \underline{(sy)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in$
$\underline{(sz)} \Rightarrow \dot{\neg}((\overline{(op2)} \in \underline{(su)})n)n \Rightarrow \dot{\neg}((\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n; \mathrm{Gen} \rhd \overline{(r1)} \in \underline{(sy)} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in \underline{(sz)} \Rightarrow \dot{\neg}((\overline{(op2)} \in \underline{(su)})n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg \forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\underline{(sy)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in \underline{(sz)} \Rightarrow \dot{\neg}((\overline{(op2)} \in$
$\underline{(su)})n)n \Rightarrow \dot{\neg}((\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n; \mathrm{Repetition} \rhd \forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\underline{(sy)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in \underline{(sz)} \Rightarrow \dot{\neg}((\overline{(op2)} \in$
$\underline{(su)})n)n \Rightarrow \dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg$
$\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(sy)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in \underline{(sz)} \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in \underline{(su)})n)n \Rightarrow \dot{\neg}((\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\rceil, p_0, \mathsf{c})]$
$[\mathrm{CPseparationIsRelation} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{a}}\colon \forall\underline{(sx)}\colon \forall\underline{(sy)}\colon \forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \underline{\mathsf{a}}\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n]$
$[\mathrm{CPseparationIsRelation} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{a}}\colon \forall\underline{(sx)}\colon \forall\underline{(sy)}\colon \overline{(s1)} \in$
$\{ph \in \{ph \in P(P(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \underline{\mathsf{a}}\} \vdash$
$\mathrm{Separation2formula}(1) \rhd \overline{(s1)} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \underline{\mathsf{a}}\} \gg \overline{(s1)} \in \{ph \in$
$P(P(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}; \forall\underline{\mathsf{a}}\colon \forall\underline{(sx)}\colon \forall\underline{(sy)}\colon \mathrm{Ded} \rhd$
$\forall\underline{\mathsf{a}}\colon \forall\underline{(sx)}\colon \forall\underline{(sy)}\colon \overline{(s1)} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid$

$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid \underline{\mathsf{a}}\} \vdash \overline{(s1)} \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \gg \forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \{ph \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid \underline{\mathsf{a}}\} \Rightarrow \overline{(s1)} \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\}; Repetition \rhd \forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \{ph \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid \underline{\mathsf{a}}\} \Rightarrow \overline{(s1)} \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \gg \forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \{ph \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid \underline{\mathsf{a}}\} \Rightarrow \overline{(s1)} \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\}; CartProdIsRelation \gg$
$\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n; SubsetIsRelation \rhd$
$\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \rhd \forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \{ph \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid \underline{\mathsf{a}}\} \Rightarrow \overline{(s1)} \in \{ph \in P(P(Union(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \gg \forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \{ph \in \{ph \in$

$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \underline{\mathsf{a}}\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToCartProd}(\mathrm{Helper}) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \forall\underline{(\mathrm{sz})}\colon \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \vdash \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \vdash \underline{(\mathrm{sz})} \in \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \vdash \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \underline{(\mathrm{sz})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\})]$

$[\mathrm{ToCartProd}(\mathrm{Helper}) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \forall\underline{(\mathrm{sz})}\colon \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \vdash \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \vdash \underline{(\mathrm{sz})} \in \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \vdash \overline{(\mathrm{s1})} \in \underline{(\mathrm{sz})} \vdash \mathrm{FromOrderedPair}(\mathrm{TwoLevels}) \rhd \overline{(\mathrm{s1})} \in \underline{(\mathrm{sz})} \rhd \underline{(\mathrm{sz})} \in \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \gg \dot{\neg}((\overline{(\mathrm{s1})} = \underline{(\mathrm{sx})})\mathrm{n} \Rightarrow \overline{(\mathrm{s1})} = \underline{(\mathrm{sy})};$
$\forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy1})}\colon \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \vdash \overline{(\mathrm{s1})} = \underline{(\mathrm{sx})} \vdash \mathrm{SameMember}(2) \rhd \overline{(\mathrm{s1})} = \underline{(\mathrm{sx})} \rhd \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \gg \overline{(\mathrm{s1})} \in \underline{(\mathrm{sx1})}; \mathrm{ToBinaryUnion}(1) \rhd \overline{(\mathrm{s1})} \in \underline{(\mathrm{sx1})} \gg \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\});$
$\forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \vdash \overline{(\mathrm{s1})} = \underline{(\mathrm{sy})} \vdash \mathrm{SameMember}(2) \rhd \overline{(\mathrm{s1})} = \underline{(\mathrm{sy})} \rhd \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \gg \overline{(\mathrm{s1})} \in \underline{(\mathrm{sy1})}; \mathrm{ToBinaryUnion}(2) \rhd \overline{(\mathrm{s1})} \in \underline{(\mathrm{sy1})} \gg \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\});$
$\mathrm{Ded} \rhd \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy1})}\colon \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \vdash \overline{(\mathrm{s1})} = \underline{(\mathrm{sx})} \vdash \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}) \gg \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \Rightarrow \overline{(\mathrm{s1})} = \underline{(\mathrm{sx})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\});$
$\mathrm{MP} \rhd \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \Rightarrow \overline{(\mathrm{s1})} = \underline{(\mathrm{sx})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}) \rhd \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \gg \overline{(\mathrm{s1})} = \underline{(\mathrm{sx})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\});$
$\mathrm{Ded} \rhd \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \vdash \overline{(\mathrm{s1})} = \underline{(\mathrm{sy})} \vdash \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}) \gg \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \Rightarrow \overline{(\mathrm{s1})} = \underline{(\mathrm{sy})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\});$
$\mathrm{MP} \rhd \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \Rightarrow \overline{(\mathrm{s1})} = \underline{(\mathrm{sy})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}) \rhd \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \gg \overline{(\mathrm{s1})} = \underline{(\mathrm{sy})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\});$
$\mathrm{FromDisjuncts} \rhd \dot{\neg}((\overline{(\mathrm{s1})} = \underline{(\mathrm{sx})})\mathrm{n} \Rightarrow \overline{(\mathrm{s1})} = \underline{(\mathrm{sy})} \rhd \overline{(\mathrm{s1})} = \underline{(\mathrm{sx})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}) \rhd \overline{(\mathrm{s1})} = \underline{(\mathrm{sy})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}) \gg \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\});$
$\forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \forall\underline{(\mathrm{sz})}\colon \mathrm{Ded} \rhd \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \forall\underline{(\mathrm{sz})}\colon \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \vdash \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \vdash \underline{(\mathrm{sz})} \in \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \vdash \overline{(\mathrm{s1})} \in \underline{(\mathrm{sz})} \vdash \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}) \gg \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \Rightarrow \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \Rightarrow \underline{(\mathrm{sz})} \in \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \Rightarrow \overline{(\mathrm{s1})} \in \underline{(\mathrm{sz})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\});$
$\underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \vdash \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \vdash \underline{(\mathrm{sz})} \in \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \vdash \mathrm{MP3} \rhd \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \Rightarrow \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \Rightarrow \underline{(\mathrm{sz})} \in \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \Rightarrow \overline{(\mathrm{s1})} \in \underline{(\mathrm{sz})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}) \rhd \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \rhd \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})} \rhd \underline{(\mathrm{sz})} \in \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \gg \overline{(\mathrm{s1})} \in \underline{(\mathrm{sz})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\});$
$\mathrm{Gen} \rhd \overline{(\mathrm{s1})} \in \underline{(\mathrm{sz})} \Rightarrow \overline{(\mathrm{s1})} \in \mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}) \gg$

$\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \underline{(sz)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}); \mathrm{Repetition} \rhd \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \underline{(sz)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}) \gg \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \underline{(sz)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToCartProd} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(sx)}\colon\forall\underline{(sx1)}\colon\forall\underline{(sy)}\colon\forall\underline{(sy1)}\colon \underline{(sx)} \in \underline{(sx1)} \vdash \underline{(sy)} \in \underline{(sy1)} \vdash \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \underline{(sx1)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy1)})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}]$

$[\mathrm{ToCartProd} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(sx)}\colon\forall\underline{(sx1)}\colon\forall\underline{(sy)}\colon\forall\underline{(sy1)}\colon \underline{(sx)} \in \underline{(sx1)} \vdash \underline{(sy)} \in \underline{(sy1)} \vdash \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \vdash \mathrm{ToCartProd(Helper)} \rhd \underline{(sx)} \in \underline{(sx1)} \rhd \underline{(sy)} \in \underline{(sy1)} \rhd \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \gg \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \overline{(s1)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}); \mathrm{Formula2Power} \rhd \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \overline{(s1)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}) \gg \overline{(s1)} \in \mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})); \forall\underline{(sx)}\colon\forall\underline{(sx1)}\colon\forall\underline{(sy)}\colon\forall\underline{(sy1)}\colon \mathrm{Ded} \rhd \forall\underline{(sx)}\colon\forall\underline{(sx1)}\colon\forall\underline{(sy)}\colon\forall\underline{(sy1)}\colon \underline{(sx)} \in \underline{(sx1)} \vdash \underline{(sy)} \in \underline{(sy1)} \vdash \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \vdash \overline{(s1)} \in \mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})) \gg \underline{(sx)} \in \underline{(sx1)} \Rightarrow \underline{(sy)} \in \underline{(sy1)} \Rightarrow \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \Rightarrow \overline{(s1)} \in \mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})); \underline{(sx)} \in \underline{(sx1)} \vdash \underline{(sy)} \in \underline{(sy1)} \vdash \mathrm{MP2} \rhd \underline{(sx)} \in \underline{(sx1)} \Rightarrow \underline{(sy)} \in \underline{(sy1)} \Rightarrow \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \Rightarrow \overline{(s1)} \in \mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})) \rhd \underline{(sx)} \in \underline{(sx1)} \rhd \underline{(sy)} \in \underline{(sy1)} \gg \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \Rightarrow \overline{(s1)} \in \mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})); \mathrm{Gen} \rhd \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \Rightarrow \overline{(s1)} \in \mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})) \gg \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \Rightarrow \overline{(s1)} \in \mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})); \mathrm{Repetition} \rhd \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \Rightarrow \overline{(s1)} \in \mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})) \gg \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \Rightarrow \overline{(s1)} \in \mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})); \mathrm{Formula2Power} \rhd \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \Rightarrow \overline{(s1)} \in \mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})) \gg \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}))); \mathrm{eqReflexivity} \gg \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} = \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\}; \mathrm{JoinConjuncts} \rhd \underline{(sx)} \in \underline{(sx1)} \rhd \underline{(sy)} \in \underline{(sy1)} \gg \dot\neg(\underline{(sx)} \in \underline{(sx1)} \Rightarrow \dot\neg(\underline{(sy)} \in \underline{(sy1)})n)n; \mathrm{JoinConjuncts} \rhd \dot\neg(\underline{(sx)} \in \underline{(sx1)} \Rightarrow \dot\neg(\underline{(sy)} \in \underline{(sy1)})n)n \rhd \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} = \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \gg \dot\neg(\dot\neg(\underline{(sx)} \in \underline{(sx1)} \Rightarrow \dot\neg(\underline{(sy)} \in \underline{(sy1)})n)n \Rightarrow \dot\neg(\{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} = \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\})n)n; \mathrm{IntroExist} @ \underline{(sy)} \rhd \dot\neg(\dot\neg(\underline{(sx)} \in \underline{(sx1)} \Rightarrow \dot\neg(\underline{(sy)} \in \underline{(sy1)})n)n \Rightarrow \dot\neg(\{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} = \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\})n)n \gg \dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\underline{(sx)} \in \underline{(sx1)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy1)})n)n \Rightarrow \dot\neg(\{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} = \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \overline{(op2)}\}\})n)n)n)n; \mathrm{IntroExist} @ \underline{(sx)} \rhd \dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\underline{(sx)} \in \underline{(sx1)} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sy1)})n)n \Rightarrow$

$\dot\neg(\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} =$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} =$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Formula2Sep} \rhd$
$\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}))) \rhd$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Repetition} \rhd$
$\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{CrsIsRelation} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{CrsIsRelation} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \vdash \mathrm{Repetition} \rhd \overline{(\mathrm{s1})} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \gg \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\}; \mathrm{Sep2Formula} \rhd \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$

$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \gg \dot{\neg}\,(\overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\overline{(\mathrm{s1})} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}\,(\overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\overline{(\mathrm{s1})} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \forall\underline{\mathsf{x}}\colon \mathrm{Ded} \rhd \forall\underline{\mathsf{x}}\colon \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \vdash \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Gen} \rhd \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Repetition} \rhd$
$\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$

{{(crs1), (crs1)}, {(crs1), x}})n)n} ⇒ (s1) ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n}; CartProdIsRelation ≫
∀$_{\mathrm{obj}}$(r1): (r1) ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} ⇒
∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n; SubsetIsRelation ⊳
∀$_{\mathrm{obj}}$(r1): (r1) ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} ⇒
∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⊳ ∀$_{\mathrm{obj}}$(s1): (s1) ∈ {ph ∈
{ph ∈ P(P(Union({N, Q}))) | ∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈
N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} =
{{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀$_{\mathrm{obj}}$(crs1): ∸(c_{Ph} =
{{(crs1), (crs1)}, {(crs1), x}})n)n} ⇒ (s1) ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} ≫ ∀$_{\mathrm{obj}}$(r1): (r1) ∈
{ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀$_{\mathrm{obj}}$(crs1): ∸(c_{Ph} =
{{(crs1), (crs1)}, {(crs1), x}})n)n} ⇒
∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n⌉, p_0, c)]

[CrsIsFunction $\stackrel{\mathrm{stmt}}{\to}$ SystemQ ⊢ ∀x: ∸(∀$_{\mathrm{obj}}$(r1): (r1) ∈ {ph ∈ {ph ∈
P(P(Union({N, Q}))) | ∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸(∀$_{\mathrm{obj}}$(crs1): ∸(c_{Ph} = {{(crs1), (crs1)}, {(crs1), x}})n)n} ⇒
∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⇒
∸(∀$_{\mathrm{obj}}$(f1): ∀$_{\mathrm{obj}}$(f2): ∀$_{\mathrm{obj}}$(f3): ∀$_{\mathrm{obj}}$(f4): {{(f1), (f1)}, {(f1), (f2)}} ∈ {ph ∈ {ph ∈
P(P(Union({N, Q}))) | ∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸(∀$_{\mathrm{obj}}$(crs1): ∸(c_{Ph} = {{(crs1), (crs1)}, {(crs1), x}})n)n} ⇒
{{(f3), (f3)}, {(f3), (f4)}} ∈ {ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀$_{\mathrm{obj}}$(op1): ∸(∸(∀$_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀$_{\mathrm{obj}}$(crs1): ∸(c_{Ph} =
{{(crs1), (crs1)}, {(crs1), x}})n)n} ⇒ (f1) = (f3) ⇒ (f2) = (f4))n)n]

[CrsIsFunction $\stackrel{\mathrm{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀x: {{(f1), (f1)}, {(f1), (f2)}} =
{{(crs1), (crs1)}, {(crs1), x}} ⊢ {{(f3), (f3)}, {(f3), (f4)}} =
{{(crs1), (crs1)}, {(crs1), x}} ⊢ FromOrderedPair ⊳ {{(f1), (f1)}, {(f1), (f2)}} =

$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\} \gg \dot\neg\,(\overline{(\mathrm{f1})} = \overline{(\mathrm{crs1})} \Rightarrow \dot\neg\,(\overline{(\mathrm{f2})} =$
$\underline{\mathsf{x}})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot\neg\,(\overline{(\mathrm{f1})} = \overline{(\mathrm{crs1})} \Rightarrow \dot\neg\,(\overline{(\mathrm{f2})} = \underline{\mathsf{x}})\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{f2})} =$
$\underline{\mathsf{x}}; \mathrm{FromOrderedPair} \rhd \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\} \gg \dot\neg\,(\overline{(\mathrm{f3})} = \overline{(\mathrm{crs1})} \Rightarrow \dot\neg\,(\overline{(\mathrm{f4})} =$
$\underline{\mathsf{x}})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot\neg\,(\overline{(\mathrm{f3})} = \overline{(\mathrm{crs1})} \Rightarrow \dot\neg\,(\overline{(\mathrm{f4})} = \underline{\mathsf{x}})\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{f4})} =$
$\underline{\mathsf{x}}; \mathrm{eqSymmetry} \rhd \overline{(\mathrm{f4})} = \underline{\mathsf{x}} \gg \underline{\mathsf{x}} = \overline{(\mathrm{f4})}; \mathrm{eqTransitivity} \rhd \overline{(\mathrm{f2})} = \underline{\mathsf{x}} \rhd \underline{\mathsf{x}} = \overline{(\mathrm{f4})} \gg$
$\overline{(\mathrm{f2})} = \overline{(\mathrm{f4})}; \forall \underline{\mathsf{x}} \colon \mathrm{Ded} \rhd \forall \underline{\mathsf{x}} \colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\} \vdash \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\} \vdash \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})} \gg \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})}; \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})} \colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \vdash \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})} \colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \vdash \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \vdash$
$\mathrm{Sep2Formula} \rhd \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})} \colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \gg \dot\neg\,(\{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})} \colon \dot\neg\,(\{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd$
$\dot\neg\,(\{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})} \colon \dot\neg\,(\{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})} \colon \dot\neg\,(\{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}; \mathrm{Sep2Formula} \rhd \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})} \colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \gg \dot\neg\,(\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})} \colon \dot\neg\,(\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd$
$\dot\neg\,(\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow$

$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n}; \mathrm{ExistMP2} \rhd \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\} \Rightarrow \overline{(\mathrm{f2})} =$
$\overline{(\mathrm{f4})} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})}; \forall\underline{\mathrm{x}}\colon \mathrm{Ded} \rhd$
$\forall\underline{\mathrm{x}}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n}\} \vdash \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n}\} \vdash \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \vdash \overline{(\mathrm{f2})} =$
$\overline{(\mathrm{f4})} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow$
$\overline{(\mathrm{f2})} = \overline{(\mathrm{f4})}; \mathrm{CrsIsRelation} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{JoinConjuncts} \rhd$
$\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd$
$\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathrm{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$

$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},\underline{x}\}\})n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)} \gg$
$\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},\underline{x}\}\})n)n\} \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} = \{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},\underline{x}\}\})n)n\} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},\underline{x}\}\})n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n\rceil, p_0, \mathsf{c})]$
$[CrsIsTotal \overset{stmt}{\rightarrow} SystemQ \vdash \forall\underline{m}\colon \forall\underline{x}\colon \lambda\mathsf{c}.TypeRational0(\lceil\underline{x}\rceil) \Vdash \underline{m} \in N \vdash$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\underline{x}\}\} \in \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},\underline{x}\}\})n)n\}]$
$[CrsIsTotal \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil SystemQ \vdash \forall\underline{m}\colon \forall\underline{x}\colon \lambda\mathsf{c}.TypeRational0(\lceil\underline{x}\rceil) \Vdash \underline{m} \in$
$N \vdash RationalType \unrhd \lambda\mathsf{c}.TypeRational0(\lceil\underline{x}\rceil) \gg \underline{x} \in Q; ToCartProd \rhd \underline{m} \in$
$N \rhd \underline{x} \in Q \gg \{\{\underline{m},\underline{m}\},\{\underline{m},\underline{x}\}\} \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}; eqReflexivity \gg$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\underline{x}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\underline{x}\}\}; IntroExist @ \underline{m} \rhd \{\{\underline{m},\underline{m}\},\{\underline{m},\underline{x}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\underline{x}\}\} \gg \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\{\{\underline{m},\underline{m}\},\{\underline{m},\underline{x}\}\} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},\underline{x}\}\})n)n; Formula2Sep \rhd \{\{\underline{m},\underline{m}\},\{\underline{m},\underline{x}\}\} \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \rhd$
$\dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\{\{\underline{m},\underline{m}\},\{\underline{m},\underline{x}\}\} = \{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},\underline{x}\}\})n)n \gg$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\underline{x}\}\} \in \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},\underline{x}\}\})n)n\}\rceil, p_0, \mathsf{c})]$
$[CrsIsSeries \overset{stmt}{\rightarrow} SystemQ \vdash \forall\underline{x}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} = \{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},\underline{x}\}\})n)n\} \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \{ph \in \{ph \in$

$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\{\{(\mathrm{f3}),(\mathrm{f3})\},\{(\mathrm{f3}),(\mathrm{f4})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{s1})\colon (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}\,(\{\{(\mathrm{s1}),(\mathrm{s1})\},\{(\mathrm{s1}),(\mathrm{s2})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{CrsIsSeries} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon (\mathrm{s1}) \in \mathrm{N} \vdash \mathrm{CrsIsTotal} \rhd (\mathrm{s1}) \in \mathrm{N} \gg$
$\{\{(\mathrm{s1}),(\mathrm{s1})\},\{(\mathrm{s1}),\underline{\mathsf{x}}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\}; \mathrm{IntroExist} @ \underline{\mathsf{x}} \rhd (\mathrm{s1}) \in \mathrm{N} \gg$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}\,(\{\{(\mathrm{s1}),(\mathrm{s1})\},\{(\mathrm{s1}),(\mathrm{s2})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}; \forall\underline{\mathsf{x}}\colon \mathrm{Ded} \rhd \forall\underline{\mathsf{x}}\colon (\mathrm{s1}) \in \mathrm{N} \vdash$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}\,(\{\{(\mathrm{s1}),(\mathrm{s1})\},\{(\mathrm{s1}),(\mathrm{s2})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n} \gg (\mathrm{s1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}\,(\{\{(\mathrm{s1}),(\mathrm{s1})\},\{(\mathrm{s1}),(\mathrm{s2})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}; \mathrm{Gen} \rhd (\mathrm{s1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}\,(\{\{(\mathrm{s1}),(\mathrm{s1})\},\{(\mathrm{s1}),(\mathrm{s2})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}(\mathrm{s1})\colon (\mathrm{s1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}\,(\{\{(\mathrm{s1}),(\mathrm{s1})\},\{(\mathrm{s1}),(\mathrm{s2})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}; \mathrm{CrsIsFunction} \gg \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{r1})\colon (\mathrm{r1}) \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\mathrm{r1}) = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}(f1)\colon \forall_{\mathrm{obj}}(f2)\colon \forall_{\mathrm{obj}}(f3)\colon \forall_{\mathrm{obj}}(f4)\colon \{\{(f1),(f1)\},\{(f1),(f2)\}\} \in \{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\})))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(crs1)\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{(crs1),(crs1)\},\{(crs1),\underline{x}\}\})n)n\} \Rightarrow$
$\{\{(f3),(f3)\},\{(f3),(f4)\}\} \in \{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\})))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(crs1)\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(crs1),(crs1)\},\{(crs1),\underline{x}\}\})n)n\} \Rightarrow (f1) = (f3) \Rightarrow (f2) =$
$(f4))n)n; \mathrm{JoinConjuncts} \rhd \dot{\neg}(\forall_{\mathrm{obj}}(r1)\colon (r1) \in \{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\})))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(crs1)\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{(crs1),(crs1)\},\{(crs1),\underline{x}\}\})n)n\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(f1)\colon \forall_{\mathrm{obj}}(f2)\colon \forall_{\mathrm{obj}}(f3)\colon \forall_{\mathrm{obj}}(f4)\colon \{\{(f1),(f1)\},\{(f1),(f2)\}\} \in \{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\})))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(crs1)\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{(crs1),(crs1)\},\{(crs1),\underline{x}\}\})n)n\} \Rightarrow$
$\{\{(f3),(f3)\},\{(f3),(f4)\}\} \in \{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\})))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(crs1)\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(crs1),(crs1)\},\{(crs1),\underline{x}\}\})n)n\} \Rightarrow (f1) = (f3) \Rightarrow (f2) =$
$(f4))n)n \rhd \forall_{\mathrm{obj}}(s1)\colon (s1) \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(s2)\colon \dot{\neg}(\{\{(s1),(s1)\},\{(s1),(s2)\}\} \in$
$\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\})))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(crs1)\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(crs1),(crs1)\},\{(crs1),\underline{x}\}\})n)n\})n)n \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(r1)\colon (r1) \in \{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\})))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(crs1)\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{(crs1),(crs1)\},\{(crs1),\underline{x}\}\})n)n\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(f1)\colon \forall_{\mathrm{obj}}(f2)\colon \forall_{\mathrm{obj}}(f3)\colon \forall_{\mathrm{obj}}(f4)\colon \{\{(f1),(f1)\},\{(f1),(f2)\}\} \in \{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\})))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(crs1)\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{(crs1),(crs1)\},\{(crs1),\underline{x}\}\})n)n\} \Rightarrow$
$\{\{(f3),(f3)\},\{(f3),(f4)\}\} \in \{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\})))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(crs1)\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(crs1),(crs1)\},\{(crs1),\underline{x}\}\})n)n\} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(s1)\colon (s1) \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(s2)\colon \dot{\neg}(\{\{(s1),(s1)\},\{(s1),(s2)\}\} \in \{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\})))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$

$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{CrsLookup} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{m}}\colon \forall \underline{\mathsf{x}}\colon \underline{\mathsf{m}} \in \mathrm{N} \vdash \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \underline{\mathsf{x}}]$

$[\mathrm{CrsLookup} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{m}}\colon \forall \underline{\mathsf{x}}\colon \underline{\mathsf{m}} \in \mathrm{N} \vdash \mathrm{CrsIsSeries} \gg$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MemberOfSeries} \rhd \underline{\mathsf{m}} \in$
$\mathrm{N} \rhd \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\}; \mathrm{CrsIsTotal} \rhd \underline{\mathsf{m}} \in \mathrm{N} \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{\mathsf{x}}\}\} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\}; \mathrm{eqReflexivity} \gg \underline{\mathsf{m}} =$
$\underline{\mathsf{m}}; \mathrm{UniqueMember} \rhd \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{\mathsf{x}}\}\} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \rhd \underline{\mathsf{m}} = \underline{\mathsf{m}} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot\neg((\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(crs1)} \colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{\mathsf{x}}\}\})n)n\}[\underline{\mathsf{m}}] = \underline{\mathsf{x}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[0f \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{m}} \colon \underline{\mathsf{m}} \in \mathrm{N} \vdash \{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg((\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(crs1)} \colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] = 0]$

$[0f \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{m}} \colon \underline{\mathsf{m}} \in \mathrm{N} \vdash \mathrm{CrsLookup} \rhd \underline{\mathsf{m}} \in \mathrm{N} \gg \{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot\neg((\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(crs1)} \colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] =$
$0; \mathrm{Repetition} \rhd \{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg((\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(crs1)} \colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] = 0 \gg \{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot\neg((\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(crs1)} \colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] = 0\rceil, \mathrm{p}_0, \mathsf{c})]$

$[1f \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{m}} \colon \underline{\mathsf{m}} \in \mathrm{N} \vdash \{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg((\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(crs1)} \colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\underline{\mathsf{m}}] = 1]$

$[1f \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{m}} \colon \underline{\mathsf{m}} \in \mathrm{N} \vdash \mathrm{CrsLookup} \rhd \underline{\mathsf{m}} \in \mathrm{N} \gg \{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot\neg((\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(crs1)} \colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\underline{\mathsf{m}}] =$
$1; \mathrm{Repetition} \rhd \{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg((\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(crs1)} \colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\underline{\mathsf{m}}] = 1 \gg \{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot\neg((\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(crs1)} \colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\underline{\mathsf{m}}] = 1\rceil, \mathrm{p}_0, \mathsf{c})]$

———-(6.11.06, lemmaer fra kvanti, mod kronologien)

$[\mathrm{DistributionOut} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon ((\underline{\mathsf{x}} * \underline{\mathsf{y}}) + (\underline{\mathsf{x}} * \underline{\mathsf{z}})) = (\underline{\mathsf{x}} * (\underline{\mathsf{y}} + \underline{\mathsf{z}}))]$

$[\mathrm{DistributionOut} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \mathrm{Distribution} \gg$
$(\underline{\mathsf{x}} * (\underline{\mathsf{y}} + \underline{\mathsf{z}})) = ((\underline{\mathsf{x}} * \underline{\mathsf{y}}) + (\underline{\mathsf{x}} * \underline{\mathsf{z}})); \mathrm{eqSymmetry} \rhd (\underline{\mathsf{x}} * (\underline{\mathsf{y}} + \underline{\mathsf{z}})) =$
$((\underline{\mathsf{x}} * \underline{\mathsf{y}}) + (\underline{\mathsf{x}} * \underline{\mathsf{z}})) \gg ((\underline{\mathsf{x}} * \underline{\mathsf{y}}) + (\underline{\mathsf{x}} * \underline{\mathsf{z}})) = (\underline{\mathsf{x}} * (\underline{\mathsf{y}} + \underline{\mathsf{z}}))\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{Three2twoTerms} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \forall \underline{\mathsf{u}} \colon (\underline{\mathsf{y}} + \underline{\mathsf{z}}) = \underline{\mathsf{u}} \vdash ((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + \underline{\mathsf{z}}) =$
$(\underline{\mathsf{x}} + \underline{\mathsf{u}})]$

$[\mathrm{Three2twoTerms} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \forall \underline{\mathsf{u}} \colon (\underline{\mathsf{y}} + \underline{\mathsf{z}}) = \underline{\mathsf{u}} \vdash$
$\mathrm{EqAdditionLeft} \rhd (\underline{\mathsf{y}} + \underline{\mathsf{z}}) = \underline{\mathsf{u}} \gg (\underline{\mathsf{x}} + (\underline{\mathsf{y}} + \underline{\mathsf{z}})) = (\underline{\mathsf{x}} + \underline{\mathsf{u}}); \mathrm{plusAssociativity} \gg$
$((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + \underline{\mathsf{z}}) = (\underline{\mathsf{x}} + (\underline{\mathsf{y}} + \underline{\mathsf{z}})); \mathrm{eqTransitivity} \rhd ((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + \underline{\mathsf{z}}) =$

$(\underline{x}+(\underline{y}+\underline{z}))\rhd(\underline{x}+(\underline{y}+\underline{z}))=(\underline{x}+\underline{u})\gg((\underline{x}+\underline{y})+\underline{z})=(\underline{x}+\underline{u})\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{Three2threeTerms}\overset{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon((\underline{x}+\underline{y})+\underline{z})=((\underline{x}+\underline{z})+\underline{y})]$

$[\mathrm{Three2threeTerms}\overset{\mathrm{proof}}{\rightarrow}\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon\mathrm{plusCommutativity}\gg(\underline{y}+\underline{z})=(\underline{z}+\underline{y});\mathrm{Three2twoTerms}\rhd(\underline{y}+\underline{z})=(\underline{z}+\underline{y})\gg((\underline{x}+\underline{y})+\underline{z})=(\underline{x}+(\underline{z}+\underline{y}));\mathrm{plusAssociativity}\gg((\underline{x}+\underline{z})+\underline{y})=(\underline{x}+(\underline{z}+\underline{y}));\mathrm{eqSymmetry}\rhd((\underline{x}+\underline{z})+\underline{y})=(\underline{x}+(\underline{z}+\underline{y}))\gg(\underline{x}+(\underline{z}+\underline{y}))=((\underline{x}+\underline{z})+\underline{y});\mathrm{eqTransitivity}\rhd((\underline{x}+\underline{y})+\underline{z})=(\underline{x}+(\underline{z}+\underline{y}))\rhd(\underline{x}+(\underline{z}+\underline{y}))=((\underline{x}+\underline{z})+\underline{y})\gg((\underline{x}+\underline{y})+\underline{z})=((\underline{x}+\underline{z})+\underline{y})\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{Three2twoFactors}\overset{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon\forall\underline{u}\colon(\underline{y}*\underline{z})=\underline{u}\vdash((\underline{x}*\underline{y})*\underline{z})=(\underline{x}*\underline{u})]$

$[\mathrm{Three2twoFactors}\overset{\mathrm{proof}}{\rightarrow}\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon\forall\underline{u}\colon(\underline{y}*\underline{z})=\underline{u}\vdash\mathrm{EqMultiplicationLeft}\rhd(\underline{y}*\underline{z})=\underline{u}\gg(\underline{x}*(\underline{y}*\underline{z}))=(\underline{x}*\underline{u});\mathrm{timesAssociativity}\gg((\underline{x}*\underline{y})*\underline{z})=(\underline{x}*(\underline{y}*\underline{z}));\mathrm{eqTransitivity}\rhd((\underline{x}*\underline{y})*\underline{z})=(\underline{x}*(\underline{y}*\underline{z}))\rhd(\underline{x}*(\underline{y}*\underline{z}))=(\underline{x}*\underline{u})\gg((\underline{x}*\underline{y})*\underline{z})=(\underline{x}*\underline{u})\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{x}=\mathrm{x}+(\mathrm{y}-\mathrm{y})\overset{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash\forall\underline{x}\colon\forall\underline{y}\colon\underline{x}=(\underline{x}+(\underline{y}+(-\mathrm{u}\underline{y})))]$

$[\mathrm{x}=\mathrm{x}+(\mathrm{y}-\mathrm{y})\overset{\mathrm{proof}}{\rightarrow}\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash\forall\underline{x}\colon\forall\underline{y}\colon\mathrm{plus0}\gg(\underline{x}+0)=\underline{x};\mathrm{Negative}\gg(\underline{y}+(-\mathrm{u}\underline{y}))=0;\mathrm{eqSymmetry}\rhd(\underline{y}+(-\mathrm{u}\underline{y}))=0\gg0=(\underline{y}+(-\mathrm{u}\underline{y}));\mathrm{EqAdditionLeft}\rhd0=(\underline{y}+(-\mathrm{u}\underline{y}))\gg(\underline{x}+0)=(\underline{x}+(\underline{y}+(-\mathrm{u}\underline{y})));\mathrm{Equality}\rhd(\underline{x}+0)=\underline{x}\rhd(\underline{x}+0)=(\underline{x}+(\underline{y}+(-\mathrm{u}\underline{y})))\gg\underline{x}=(\underline{x}+(\underline{y}+(-\mathrm{u}\underline{y})))\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{x}=\mathrm{x}+\mathrm{y}-\mathrm{y}\overset{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash\forall\underline{x}\colon\forall\underline{y}\colon\underline{x}=((\underline{x}+\underline{y})+(-\mathrm{u}\underline{y}))]$

$[\mathrm{x}=\mathrm{x}+\mathrm{y}-\mathrm{y}\overset{\mathrm{proof}}{\rightarrow}\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash\forall\underline{x}\colon\forall\underline{y}\colon\mathrm{x}=\mathrm{x}+(\mathrm{y}-\mathrm{y})\gg\underline{x}=(\underline{x}+(\underline{y}+(-\mathrm{u}\underline{y})));\mathrm{plusAssociativity}\gg((\underline{x}+\underline{y})+(-\mathrm{u}\underline{y}))=(\underline{x}+(\underline{y}+(-\mathrm{u}\underline{y})));\mathrm{eqSymmetry}\rhd((\underline{x}+\underline{y})+(-\mathrm{u}\underline{y}))=(\underline{x}+(\underline{y}+(-\mathrm{u}\underline{y})))\gg(\underline{x}+(\underline{y}+(-\mathrm{u}\underline{y})))=((\underline{x}+\underline{y})+(-\mathrm{u}\underline{y}));\mathrm{eqTransitivity}\rhd\underline{x}=(\underline{x}+(\underline{y}+(-\mathrm{u}\underline{y})))\rhd(\underline{x}+(\underline{y}+(-\mathrm{u}\underline{y})))=((\underline{x}+\underline{y})+(-\mathrm{u}\underline{y}))\gg\underline{x}=((\underline{x}+\underline{y})+(-\mathrm{u}\underline{y}))\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{x}=\mathrm{x}*\mathrm{y}*(1/\mathrm{y})\overset{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash\forall\underline{x}\colon\forall\underline{y}\colon\dot{\neg}\,(\underline{y}=0)\mathrm{n}\vdash\underline{x}=((\underline{x}*\underline{y})*\mathrm{rec}\underline{y})]$

$[\mathrm{x}=\mathrm{x}*\mathrm{y}*(1/\mathrm{y})\overset{\mathrm{proof}}{\rightarrow}\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash\forall\underline{x}\colon\forall\underline{y}\colon\dot{\neg}\,(\underline{y}=0)\mathrm{n}\vdash\mathrm{times1}\gg(\underline{x}*1)=\underline{x};\mathrm{Reciprocal}\rhd\dot{\neg}\,(\underline{y}=0)\mathrm{n}\gg(\underline{y}*\mathrm{rec}\underline{y})=1;\mathrm{Three2twoFactors}\rhd(\underline{y}*\mathrm{rec}\underline{y})=1\gg((\underline{x}*\underline{y})*\mathrm{rec}\underline{y})=(\underline{x}*1);\mathrm{eqTransitivity}\rhd((\underline{x}*\underline{y})*\mathrm{rec}\underline{y})=(\underline{x}*1)\rhd(\underline{x}*1)=\underline{x}\gg((\underline{x}*\underline{y})*\mathrm{rec}\underline{y})=\underline{x};\mathrm{eqSymmetry}\rhd((\underline{x}*\underline{y})*\mathrm{rec}\underline{y})=\underline{x}\gg\underline{x}=((\underline{x}*\underline{y})*\mathrm{rec}\underline{y})\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{x}*0+\mathrm{x}=\mathrm{x}\overset{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash\forall\underline{x}\colon((\underline{x}*0)+\underline{x})=\underline{x}]$

$[\mathrm{x}*0+\mathrm{x}=\mathrm{x}\overset{\mathrm{proof}}{\rightarrow}\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash\forall\underline{x}\colon\mathrm{times1}\gg(\underline{x}*1)=\underline{x};\mathrm{eqSymmetry}\rhd(\underline{x}*1)=\underline{x}\gg\underline{x}=(\underline{x}*1);\mathrm{EqAdditionLeft}\rhd\underline{x}=(\underline{x}*1)\gg((\underline{x}*0)+\underline{x})=((\underline{x}*0)+(\underline{x}*1));\mathrm{Distribution}\gg(\underline{x}*(0+1))=((\underline{x}*0)+(\underline{x}*1));\mathrm{eqSymmetry}\rhd(\underline{x}*(0+1))=((\underline{x}*0)+(\underline{x}*1))\gg((\underline{x}*0)+(\underline{x}*1))=(\underline{x}*(0+1));\mathrm{plus0Left}\gg(0+1)=1;\mathrm{EqMultiplicationLeft}\rhd(0+1)=1\gg(\underline{x}*(0+1))=(\underline{x}*1);\mathrm{eqTransitivity5}\rhd((\underline{x}*0)+\underline{x})=((\underline{x}*0)+(\underline{x}*1))\rhd((\underline{x}*0)+(\underline{x}*1))=(\underline{x}*(0+1))\rhd(\underline{x}*(0+1))=(\underline{x}*1)\rhd(\underline{x}*1)=\underline{x}\gg((\underline{x}*0)+\underline{x})=\underline{x}\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{x}*0=0\overset{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash\forall\underline{x}\colon(\underline{x}*0)=0]$

$[\mathrm{x}*0=0\overset{\mathrm{proof}}{\rightarrow}\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash\forall\underline{x}\colon\mathrm{x}=\mathrm{x}+(\mathrm{y}-\mathrm{y})\gg(\underline{x}*0)=((\underline{x}*0)+(\underline{x}+(-\mathrm{u}\underline{x})));\mathrm{plusAssociativity}\gg(((\underline{x}*0)+\underline{x})+(-\mathrm{u}\underline{x}))=((\underline{x}*0)+(\underline{x}+(-\mathrm{u}\underline{x})));\mathrm{eqSymmetry}\rhd(((\underline{x}*0)+\underline{x})+(-\mathrm{u}\underline{x}))=$

$((\underline{x}*0)+(\underline{x}+(-\mathrm{u}\underline{x}))) \gg ((\underline{x}*0)+(\underline{x}+(-\mathrm{u}\underline{x}))) = (((\underline{x}*0)+\underline{x})+(-\mathrm{u}\underline{x})); \mathrm{x}*0+\mathrm{x} = \mathrm{x} \gg ((\underline{x}*0)+\underline{x}) = \underline{x}; \mathrm{eqAddition} \rhd ((\underline{x}*0)+\underline{x}) = \underline{x} \gg (((\underline{x}*0)+\underline{x})+(-\mathrm{u}\underline{x})) = (\underline{x}+(-\mathrm{u}\underline{x})); \mathrm{Negative} \gg (\underline{x}+(-\mathrm{u}\underline{x})) = 0; \mathrm{eqTransitivity5} \rhd (\underline{x}*0) = ((\underline{x}*0)+(\underline{x}+(-\mathrm{u}\underline{x}))) \rhd ((\underline{x}*0)+(\underline{x}+(-\mathrm{u}\underline{x}))) = (((\underline{x}*0)+\underline{x})+(-\mathrm{u}\underline{x})) \rhd (((\underline{x}*0)+\underline{x})+(-\mathrm{u}\underline{x})) = (\underline{x}+(-\mathrm{u}\underline{x})) \rhd (\underline{x}+(-\mathrm{u}\underline{x})) = 0 \gg (\underline{x}*0) = 0\rceil, \mathrm{p}_0, \mathsf{c})]$

$[(-1)*(-1)+(-1)*1=0 \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash (((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1)) = 0]$

$[(-1)*(-1)+(-1)*1=0 \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \mathrm{DistributionOut} \gg (((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1)) = ((-\mathrm{u}1)*((-\mathrm{u}1)+1)); \mathrm{Negative} \gg (1+(-\mathrm{u}1)) = 0; \mathrm{plusCommutativity} \gg ((-\mathrm{u}1)+1) = (1+(-\mathrm{u}1)); \mathrm{eqTransitivity} \rhd ((-\mathrm{u}1)+1) = (1+(-\mathrm{u}1)) \rhd (1+(-\mathrm{u}1)) = 0 \gg ((-\mathrm{u}1)+1) = 0; \mathrm{EqMultiplicationLeft} \rhd ((-\mathrm{u}1)+1) = 0 \gg ((-\mathrm{u}1)*((-\mathrm{u}1)+1)) = ((-\mathrm{u}1)*0); \mathrm{x}*0 = 0 \gg ((-\mathrm{u}1)*0) = 0; \mathrm{eqTransitivity4} \rhd (((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1)) = ((-\mathrm{u}1)*((-\mathrm{u}1)+1)) \rhd ((-\mathrm{u}1)*((-\mathrm{u}1)+1)) = ((-\mathrm{u}1)*0) \rhd ((-\mathrm{u}1)*0) = 0 \gg (((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1)) = 0\rceil, \mathrm{p}_0, \mathsf{c})]$

$[(-1)*(-1)=1 \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash ((-\mathrm{u}1)*(-\mathrm{u}1)) = 1]$

$[(-1)*(-1)=1 \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \mathrm{x} = \mathrm{x}+(\mathrm{y}-\mathrm{y}) \gg ((-\mathrm{u}1)*(-\mathrm{u}1)) = (((-\mathrm{u}1)*(-\mathrm{u}1))+(1+(-\mathrm{u}1))); \mathrm{times1} \gg ((-\mathrm{u}1)*1) = (-\mathrm{u}1); \mathrm{eqSymmetry} \rhd ((-\mathrm{u}1)*1) = (-\mathrm{u}1) \gg (-\mathrm{u}1) = ((-\mathrm{u}1)*1); \mathrm{EqAdditionLeft} \rhd (-\mathrm{u}1) = ((-\mathrm{u}1)*1) \gg (1+(-\mathrm{u}1)) = (1+((-\mathrm{u}1)*1)); \mathrm{EqAdditionLeft} \rhd (1+(-\mathrm{u}1)) = (1+((-\mathrm{u}1)*1)) \gg (((-\mathrm{u}1)*(-\mathrm{u}1))+(1+(-\mathrm{u}1))) = (((-\mathrm{u}1)*(-\mathrm{u}1))+(1+((-\mathrm{u}1)*1))); \mathrm{plusCommutativity} \gg (1+((-\mathrm{u}1)*1)) = (((-\mathrm{u}1)*1)+1); \mathrm{EqAdditionLeft} \rhd (1+((-\mathrm{u}1)*1)) = (((-\mathrm{u}1)*1)+1) \gg (((-\mathrm{u}1)*(-\mathrm{u}1))+(1+((-\mathrm{u}1)*1))) = (((-\mathrm{u}1)*(-\mathrm{u}1))+(((-\mathrm{u}1)*1)+1)); \mathrm{plusAssociativity} \gg ((((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1))+1) = (((-\mathrm{u}1)*(-\mathrm{u}1))+(((-\mathrm{u}1)*1)+1)); \mathrm{eqSymmetry} \rhd ((((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1))+1) = (((-\mathrm{u}1)*(-\mathrm{u}1))+(((-\mathrm{u}1)*1)+1)) \gg (((-\mathrm{u}1)*(-\mathrm{u}1))+(((-\mathrm{u}1)*1)+1)) = ((((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1))+1); (-1)*(-1)+(-1)*1=0 \gg (((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1)) = 0; \mathrm{eqAddition} \rhd (((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1)) = 0 \gg ((((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1))+1) = (0+1); \mathrm{plus0Left} \gg (0+1) = 1; \mathrm{eqTransitivity5} \rhd ((-\mathrm{u}1)*(-\mathrm{u}1)) = (((-\mathrm{u}1)*(-\mathrm{u}1))+(1+(-\mathrm{u}1))) \rhd (((-\mathrm{u}1)*(-\mathrm{u}1))+(1+(-\mathrm{u}1))) = (((-\mathrm{u}1)*(-\mathrm{u}1))+(1+((-\mathrm{u}1)*1))) \rhd (((-\mathrm{u}1)*(-\mathrm{u}1))+(1+((-\mathrm{u}1)*1))) = (((-\mathrm{u}1)*(-\mathrm{u}1))+(((-\mathrm{u}1)*1)+1)) \rhd (((-\mathrm{u}1)*(-\mathrm{u}1))+(((-\mathrm{u}1)*1)+1)) = ((((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1))+1) \gg ((-\mathrm{u}1)*(-\mathrm{u}1)) = ((((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1))+1); \mathrm{eqTransitivity4} \rhd ((-\mathrm{u}1)*(-\mathrm{u}1)) = ((((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1))+1) \rhd ((((-\mathrm{u}1)*(-\mathrm{u}1))+((-\mathrm{u}1)*1))+1) = (0+1) \rhd (0+1) = 1 \gg ((-\mathrm{u}1)*(-\mathrm{u}1)) = 1\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{subLeqRight} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = \underline{y} \vdash \underline{z} <= \underline{x} \vdash \underline{z} <= \underline{y}]$

$[\mathrm{subLeqRight} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = \underline{y} \vdash \underline{z} <= \underline{x} \vdash \mathrm{eqLeq} \rhd \underline{x} = \underline{y} \gg \underline{x} <= \underline{y}; \mathrm{leqTransitivity} \rhd \underline{z} <= \underline{x} \rhd \underline{x} <= \underline{y} \gg \underline{z} <= \underline{y}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{subLeqLeft} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = \underline{y} \vdash \underline{x} <= \underline{z} \vdash \underline{y} <= \underline{z}]$

$[\mathrm{subLeqLeft} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = \underline{y} \vdash \underline{x} <= \underline{z} \vdash \mathrm{eqSymmetry} \rhd \underline{x} = \underline{y} \gg \underline{y} = \underline{x}; \mathrm{eqLeq} \rhd \underline{y} = \underline{x} \gg \underline{y} <= \underline{x}; \mathrm{leqTransitivity} \rhd \underline{y} <=$

$\underline{x} \rhd \underline{x} <= \underline{z} \gg \underline{y} <= \underline{z}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[0 < 1\mathrm{Helper} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash 1 <= 0 \Rightarrow 0 <= 1]$

$[0 < 1\mathrm{Helper} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash 1 <= 0 \vdash \mathrm{leqAddition} \rhd 1 <= 0 \gg (1 + (-\mathrm{u}1)) <= (0 + (-\mathrm{u}1)); \mathrm{Negative} \gg (1 + (-\mathrm{u}1)) = 0; \mathrm{subLeqLeft} \rhd (1 + (-\mathrm{u}1)) = 0 \rhd (1 + (-\mathrm{u}1)) <= (0 + (-\mathrm{u}1)) \gg 0 <= (0 + (-\mathrm{u}1)); \mathrm{plus0Left} \gg (0 + (-\mathrm{u}1)) = (-\mathrm{u}1); \mathrm{subLeqRight} \rhd (0 + (-\mathrm{u}1)) = (-\mathrm{u}1) \rhd 0 <= (0 + (-\mathrm{u}1)) \gg 0 <= (-\mathrm{u}1); \mathrm{leqMultiplication} \rhd 0 <= (-\mathrm{u}1) \rhd 0 <= (-\mathrm{u}1) \gg (0 * (-\mathrm{u}1)) <= ((-\mathrm{u}1) * (-\mathrm{u}1)); \mathrm{x} * 0 = 0 \gg ((-\mathrm{u}1) * 0) = 0; \mathrm{timesCommutativity} \gg (0 * (-\mathrm{u}1)) = ((-\mathrm{u}1) * 0); \mathrm{eqTransitivity} \rhd (0 * (-\mathrm{u}1)) = ((-\mathrm{u}1) * 0) \rhd ((-\mathrm{u}1) * 0) = 0 \gg (0 * (-\mathrm{u}1)) = 0; \mathrm{subLeqLeft} \rhd (0 * (-\mathrm{u}1)) = 0 \rhd (0 * (-\mathrm{u}1)) <= ((-\mathrm{u}1) * (-\mathrm{u}1)) \gg 0 <= ((-\mathrm{u}1) * (-\mathrm{u}1)); (-1) * (-1) = 1 \gg ((-\mathrm{u}1) * (-\mathrm{u}1)) = 1; \mathrm{subLeqRight} \rhd ((-\mathrm{u}1) * (-\mathrm{u}1)) = 1 \rhd 0 <= ((-\mathrm{u}1) * (-\mathrm{u}1)) \gg 0 <= 1; \mathrm{Ded} \rhd 1 <= 0 \vdash 0 <= 1 \gg 1 <= 0 \Rightarrow 0 <= 1\rceil, \mathrm{p}_0, \mathsf{c})]$

$[0 < 1 \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \dot{\neg}\,(0 <= 1 \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n}]$

$[0 < 1 \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \mathrm{leqTotality} \gg \dot{\neg}\,(0 <= 1)\mathrm{n} \Rightarrow 1 <= 0; \mathrm{AutoImply} \gg 0 <= 1 \Rightarrow 0 <= 1; 0 < 1\mathrm{Helper} \gg 1 <= 0 \Rightarrow 0 <= 1; \mathrm{FromDisjuncts} \rhd \dot{\neg}\,(0 <= 1)\mathrm{n} \Rightarrow 1 <= 0 \rhd 0 <= 1 \Rightarrow 0 <= 1 \rhd 1 <= 0 \Rightarrow 0 <= 1 \gg 0 <= 1; 0\mathrm{not}1 \gg \dot{\neg}\,(0 = 1)\mathrm{n}; \mathrm{JoinConjuncts} \rhd 0 <= 1 \rhd \dot{\neg}\,(0 = 1)\mathrm{n} \gg \dot{\neg}\,(0 <= 1 \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{AddEquations} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \forall \underline{u}\colon \underline{x} = \underline{y} \vdash \underline{z} = \underline{u} \vdash (\underline{x} + \underline{z}) = (\underline{y} + \underline{u})]$

$[\mathrm{AddEquations} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \forall \underline{u}\colon \underline{x} = \underline{y} \vdash \underline{z} = \underline{u} \vdash \mathrm{eqAddition} \rhd \underline{x} = \underline{y} \gg (\underline{x} + \underline{z}) = (\underline{y} + \underline{z}); \mathrm{EqAdditionLeft} \rhd \underline{z} = \underline{u} \gg (\underline{y} + \underline{z}) = (\underline{y} + \underline{u}); \mathrm{eqTransitivity} \rhd (\underline{x} + \underline{z}) = (\underline{y} + \underline{z}) \rhd (\underline{y} + \underline{z}) = (\underline{y} + \underline{u}) \gg (\underline{x} + \underline{z}) = (\underline{y} + \underline{u})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveToRight(Eq)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{x} + \underline{y}) = \underline{z} \vdash \underline{x} = (\underline{z} + (-\mathrm{u}\underline{y}))]$

$[\mathrm{PositiveToRight(Eq)} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{x} + \underline{y}) = \underline{z} \vdash \mathrm{eqAddition} \rhd (\underline{x} + \underline{y}) = \underline{z} \gg ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) = (\underline{z} + (-\mathrm{u}\underline{y})); \mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg \underline{x} = ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})); \mathrm{eqTransitivity} \rhd \underline{x} = ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) \rhd ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) = (\underline{z} + (-\mathrm{u}\underline{y})) \gg \underline{x} = (\underline{z} + (-\mathrm{u}\underline{y}))\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveToLeft(Eq)(1term)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} = \underline{y} \vdash (\underline{x} + (-\mathrm{u}\underline{y})) = 0]$

$[\mathrm{PositiveToLeft(Eq)(1term)} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} = \underline{y} \vdash \mathrm{eqAddition} \rhd \underline{x} = \underline{y} \gg (\underline{x} + (-\mathrm{u}\underline{y})) = (\underline{y} + (-\mathrm{u}\underline{y})); \mathrm{Negative} \gg (\underline{y} + (-\mathrm{u}\underline{y})) = 0; \mathrm{eqTransitivity} \rhd (\underline{x} + (-\mathrm{u}\underline{y})) = (\underline{y} + (-\mathrm{u}\underline{y})) \rhd (\underline{y} + (-\mathrm{u}\underline{y})) = 0 \gg (\underline{x} + (-\mathrm{u}\underline{y})) = 0\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveToRight(Leq)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{x} + \underline{y}) <= \underline{z} \vdash \underline{x} <= (\underline{z} + (-\mathrm{u}\underline{y}))]$

$[\mathrm{PositiveToRight(Leq)} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{x} + \underline{y}) <= \underline{z} \vdash \mathrm{leqAddition} \rhd (\underline{x} + \underline{y}) <= \underline{z} \gg ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) <= (\underline{z} + (-\mathrm{u}\underline{y})); \mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg \underline{x} = ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})); \mathrm{eqSymmetry} \rhd \underline{x} = ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) \gg ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) = \underline{x}; \mathrm{subLeqLeft} \rhd ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) = \underline{x} \rhd ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) <= (\underline{z} + (-\mathrm{u}\underline{y})) \gg \underline{x} <= (\underline{z} + (-\mathrm{u}\underline{y}))\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveToRight(Leq)(1term)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{y}\colon \forall \underline{z}\colon \underline{y} <= \underline{z} \vdash 0 <=$

$(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{y}}))]$

$[\mathrm{PositiveToRight(Leq)(1term)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \underline{\mathsf{y}} <= \underline{\mathsf{z}} \vdash \mathrm{plus0Left} \gg (0 + \underline{\mathsf{y}}) = \underline{\mathsf{y}}; \mathrm{eqSymmetry} \rhd (0 + \underline{\mathsf{y}}) = \underline{\mathsf{y}} \gg \underline{\mathsf{y}} = (0 + \underline{\mathsf{y}}); \mathrm{subLeqLeft} \rhd \underline{\mathsf{y}} = (0 + \underline{\mathsf{y}}) \rhd \underline{\mathsf{y}} <= \underline{\mathsf{z}} \gg (0 + \underline{\mathsf{y}}) <= \underline{\mathsf{z}}; \mathrm{PositiveToRight(Leq)} \rhd (0 + \underline{\mathsf{y}}) <= \underline{\mathsf{z}} \gg 0 <= (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{y}}))\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{NegativeToLeft(Eq)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \underline{\mathsf{x}} = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})) \vdash (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = \underline{\mathsf{y}}]$

$[\mathrm{NegativeToLeft(Eq)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \underline{\mathsf{x}} = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})) \vdash \mathrm{eqAddition} \rhd \underline{\mathsf{x}} = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})) \gg (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = ((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})) + \underline{\mathsf{z}}); \mathrm{Three2threeTerms} \gg ((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})) + \underline{\mathsf{z}}) = ((\underline{\mathsf{y}} + \underline{\mathsf{z}}) + (-\mathrm{u}\underline{\mathsf{z}})); \mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg \underline{\mathsf{y}} = ((\underline{\mathsf{y}} + \underline{\mathsf{z}}) + (-\mathrm{u}\underline{\mathsf{z}})); \mathrm{eqSymmetry} \rhd \underline{\mathsf{y}} = ((\underline{\mathsf{y}} + \underline{\mathsf{z}}) + (-\mathrm{u}\underline{\mathsf{z}})) \gg ((\underline{\mathsf{y}} + \underline{\mathsf{z}}) + (-\mathrm{u}\underline{\mathsf{z}})) = \underline{\mathsf{y}}; \mathrm{eqTransitivity4} \rhd (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = ((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})) + \underline{\mathsf{z}}) \rhd ((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})) + \underline{\mathsf{z}}) = ((\underline{\mathsf{y}} + \underline{\mathsf{z}}) + (-\mathrm{u}\underline{\mathsf{z}})) \rhd ((\underline{\mathsf{y}} + \underline{\mathsf{z}}) + (-\mathrm{u}\underline{\mathsf{z}})) = \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = \underline{\mathsf{y}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SubtractEquations} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \forall \underline{\mathsf{u}} \colon (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \vdash \underline{\mathsf{z}} = \underline{\mathsf{u}} \vdash \underline{\mathsf{x}} = \underline{\mathsf{y}}]$

$[\mathrm{SubtractEquations} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \forall \underline{\mathsf{u}} \colon (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \vdash \underline{\mathsf{z}} = \underline{\mathsf{u}} \vdash \mathrm{eqAddition} \rhd (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \gg ((\underline{\mathsf{x}} + \underline{\mathsf{z}}) + (-\mathrm{u}\underline{\mathsf{z}})) = ((\underline{\mathsf{y}} + \underline{\mathsf{u}}) + (-\mathrm{u}\underline{\mathsf{z}})); \mathrm{plus0Left} \gg (0 + \underline{\mathsf{z}}) = \underline{\mathsf{z}}; \mathrm{eqTransitivity} \rhd (0 + \underline{\mathsf{z}}) = \underline{\mathsf{z}} \rhd \underline{\mathsf{z}} = \underline{\mathsf{u}} \gg (0 + \underline{\mathsf{z}}) = \underline{\mathsf{u}}; \mathrm{PositiveToRight(Eq)} \rhd (0 + \underline{\mathsf{z}}) = \underline{\mathsf{u}} \gg 0 = (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}})); \mathrm{eqSymmetry} \rhd 0 = (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}})) \gg (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}})) = 0; \mathrm{EqAdditionLeft} \rhd (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}})) = 0 \gg (\underline{\mathsf{y}} + (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))) = (\underline{\mathsf{y}} + 0); \mathrm{plusAssociativity} \gg ((\underline{\mathsf{y}} + \underline{\mathsf{u}}) + (-\mathrm{u}\underline{\mathsf{z}})) = (\underline{\mathsf{y}} + (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))); \mathrm{plus0} \gg (\underline{\mathsf{y}} + 0) = \underline{\mathsf{y}}; \mathrm{eqTransitivity4} \rhd ((\underline{\mathsf{y}} + \underline{\mathsf{u}}) + (-\mathrm{u}\underline{\mathsf{z}})) = (\underline{\mathsf{y}} + (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))) \rhd (\underline{\mathsf{y}} + (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))) = (\underline{\mathsf{y}} + 0) \rhd (\underline{\mathsf{y}} + 0) = \underline{\mathsf{y}} \gg ((\underline{\mathsf{y}} + \underline{\mathsf{u}}) + (-\mathrm{u}\underline{\mathsf{z}})) = \underline{\mathsf{y}}; \mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg \underline{\mathsf{x}} = ((\underline{\mathsf{x}} + \underline{\mathsf{z}}) + (-\mathrm{u}\underline{\mathsf{z}})); \mathrm{eqTransitivity4} \rhd \underline{\mathsf{x}} = ((\underline{\mathsf{x}} + \underline{\mathsf{z}}) + (-\mathrm{u}\underline{\mathsf{z}})) \rhd ((\underline{\mathsf{x}} + \underline{\mathsf{z}}) + (-\mathrm{u}\underline{\mathsf{z}})) = ((\underline{\mathsf{y}} + \underline{\mathsf{u}}) + (-\mathrm{u}\underline{\mathsf{z}})) \rhd ((\underline{\mathsf{y}} + \underline{\mathsf{u}}) + (-\mathrm{u}\underline{\mathsf{z}})) = \underline{\mathsf{y}} \gg \underline{\mathsf{x}} = \underline{\mathsf{y}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SubtractEquationsLeft} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \forall \underline{\mathsf{u}} \colon (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \vdash \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \underline{\mathsf{z}} = \underline{\mathsf{u}}]$

$[\mathrm{SubtractEquationsLeft} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \forall \underline{\mathsf{u}} \colon (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \vdash \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \mathrm{plusCommutativity} \gg (\underline{\mathsf{z}} + \underline{\mathsf{x}}) = (\underline{\mathsf{x}} + \underline{\mathsf{z}}); \mathrm{plusCommutativity} \gg (\underline{\mathsf{y}} + \underline{\mathsf{u}}) = (\underline{\mathsf{u}} + \underline{\mathsf{y}}); \mathrm{eqTransitivity4} \rhd (\underline{\mathsf{z}} + \underline{\mathsf{x}}) = (\underline{\mathsf{x}} + \underline{\mathsf{z}}) \rhd (\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \rhd (\underline{\mathsf{y}} + \underline{\mathsf{u}}) = (\underline{\mathsf{u}} + \underline{\mathsf{y}}) \gg (\underline{\mathsf{z}} + \underline{\mathsf{x}}) = (\underline{\mathsf{u}} + \underline{\mathsf{y}}); \mathrm{SubtractEquations} \rhd (\underline{\mathsf{z}} + \underline{\mathsf{x}}) = (\underline{\mathsf{u}} + \underline{\mathsf{y}}) \rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \gg \underline{\mathsf{z}} = \underline{\mathsf{u}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{EqNegated} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash (-\mathrm{u}\underline{\mathsf{x}}) = (-\mathrm{u}\underline{\mathsf{y}})]$

$[\mathrm{EqNegated} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \underline{\mathsf{x}} = \underline{\mathsf{y}} \vdash \mathrm{Negative} \gg (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{x}})) = 0; \mathrm{Negative} \gg (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{y}})) = 0; \mathrm{eqSymmetry} \rhd (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{y}})) = 0 \gg 0 = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{y}})); \mathrm{eqTransitivity} \rhd (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{x}})) = 0 \rhd 0 = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{y}})) \gg (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{x}})) = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{y}})); \mathrm{SubtractEquationsLeft} \rhd (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{x}})) = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{y}})) \rhd \underline{\mathsf{x}} = \underline{\mathsf{y}} \gg (-\mathrm{u}\underline{\mathsf{x}}) = (-\mathrm{u}\underline{\mathsf{y}})\rceil, \mathrm{p}_0, \mathsf{c})]$
(*** NO EQUALITY ***)

$[\mathrm{LessNeq} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \dot{\neg}\, (\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot{\neg}\, (\dot{\neg}\, (\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}\, (\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n}]$

$[\mathrm{LessNeq} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \dot{\neg}\, (\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot{\neg}\, (\dot{\neg}\, (\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{Repetition} \rhd \dot{\neg}\, (\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot{\neg}\, (\dot{\neg}\, (\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\, (\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot{\neg}\, (\dot{\neg}\, (\underline{\mathsf{x}} =$

$\underline{y})n)n)n; \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg \dot{\neg}(\underline{x} = \underline{y})n\rceil, p_0, c)]$

$[x + y = \mathrm{zBackwards} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon (\underline{x} + \underline{y}) = \underline{z} \vdash \underline{z} = (\underline{y} + \underline{x})]$

$[x + y = \mathrm{zBackwards} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon (\underline{x} + \underline{y}) = \underline{z} \vdash \mathrm{plusCommutativity} \gg (\underline{x} + \underline{y}) = (\underline{y} + \underline{x}); \mathrm{Equality} \rhd (\underline{x} + \underline{y}) = \underline{z} \gg \underline{z} = (\underline{y} + \underline{x})\rceil, p_0, c)]$

$[x * y = \mathrm{zBackwards} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon (\underline{x} * \underline{y}) = \underline{z} \vdash \underline{z} = (\underline{y} * \underline{x})]$

$[x * y = \mathrm{zBackwards} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon (\underline{x} * \underline{y}) = \underline{z} \vdash \mathrm{timesCommutativity} \gg (\underline{x}*\underline{y}) = (\underline{y}*\underline{x}); \mathrm{Equality} \rhd (\underline{x}*\underline{y}) = \underline{z} \gg \underline{z} = (\underline{y}*\underline{x})\rceil, p_0, c)]$

$[\mathrm{DoubleMinus} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon (-u(-u\underline{x})) = \underline{x}]$

$[\mathrm{DoubleMinus} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \mathrm{Negative} \gg ((-u\underline{x}) + (-u(-u\underline{x}))) = 0; x + y = \mathrm{zBackwards} \rhd ((-u\underline{x}) + (-u(-u\underline{x}))) = 0 \gg 0 = ((-u(-u\underline{x})) + (-u\underline{x})); \mathrm{NegativeToLeft(Eq)} \rhd 0 = ((-u(-u\underline{x})) + (-u\underline{x})) \gg (0 + \underline{x}) = (-u(-u\underline{x})); \mathrm{plus0Left} \gg (0 + \underline{x}) = \underline{x}; \mathrm{Equality} \rhd (0 + \underline{x}) = (-u(-u\underline{x})) \rhd (0 + \underline{x}) = \underline{x} \gg (-u(-u\underline{x})) = \underline{x}\rceil, p_0, c)]$

$[\mathrm{NeqNegated} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} = \underline{y})n \vdash \dot{\neg}((-u\underline{x}) = (-u\underline{y}))n]$

$[\mathrm{NeqNegated} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} = \underline{y})n \vdash (-u\underline{x}) = (-u\underline{y}) \vdash \mathrm{EqNegated} \rhd (-u\underline{x}) = (-u\underline{y}) \gg (-u(-u\underline{x})) = (-u(-u\underline{y})); \mathrm{DoubleMinus} \gg (-u(-u\underline{x})) = \underline{x}; \mathrm{eqSymmetry} \rhd (-u(-u\underline{x})) = \underline{x} \gg \underline{x} = (-u(-u\underline{x})); \mathrm{DoubleMinus} \gg (-u(-u\underline{y})) = \underline{y}; \mathrm{eqTransitivity4} \rhd \underline{x} = (-u(-u\underline{x})) \rhd (-u(-u\underline{x})) = (-u(-u\underline{y})) \rhd (-u(-u\underline{y})) = \underline{y} \gg \underline{x} = \underline{y}; \mathrm{FromContradiction} \rhd \underline{x} = \underline{y} \rhd \dot{\neg}(\underline{x} = \underline{y})n \gg \dot{\neg}((-u\underline{x}) = (-u\underline{y}))n; \forall\underline{x}\colon \forall\underline{y}\colon \mathrm{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} = \underline{y})n \vdash (-u\underline{x}) = (-u\underline{y}) \vdash \dot{\neg}((-u\underline{x}) = (-u\underline{y}))n \gg \dot{\neg}(\underline{x} = \underline{y})n \Rightarrow (-u\underline{x}) = (-u\underline{y}) \Rightarrow \dot{\neg}((-u\underline{x}) = (-u\underline{y}))n; \dot{\neg}(\underline{x} = \underline{y})n \vdash \mathrm{MP} \rhd \dot{\neg}(\underline{x} = \underline{y})n \Rightarrow (-u\underline{x}) = (-u\underline{y}) \Rightarrow \dot{\neg}((-u\underline{x}) = (-u\underline{y}))n \rhd \dot{\neg}(\underline{x} = \underline{y})n \gg (-u\underline{x}) = (-u\underline{y}) \Rightarrow \dot{\neg}((-u\underline{x}) = (-u\underline{y}))n; \mathrm{prop\ lemma\ imply\ negation} \rhd (-u\underline{x}) = (-u\underline{y}) \Rightarrow \dot{\neg}((-u\underline{x}) = (-u\underline{y}))n \gg \dot{\neg}((-u\underline{x}) = (-u\underline{y}))n\rceil, p_0, c)]$

$[\mathrm{SubNeqRight} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = \underline{y} \vdash \dot{\neg}(\underline{z} = \underline{x})n \vdash \dot{\neg}(\underline{z} = \underline{y})n]$

$[\mathrm{SubNeqRight} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = \underline{y} \vdash \dot{\neg}(\underline{z} = \underline{x})n \vdash \mathrm{NeqSymmetry} \rhd \dot{\neg}(\underline{z} = \underline{x})n \gg \dot{\neg}(\underline{x} = \underline{z})n; \mathrm{SubNeqLeft} \rhd \underline{x} = \underline{y} \rhd \dot{\neg}(\underline{x} = \underline{z})n \gg \dot{\neg}(\underline{y} = \underline{z})n; \mathrm{NeqSymmetry} \rhd \dot{\neg}(\underline{y} = \underline{z})n \gg \dot{\neg}(\underline{z} = \underline{y})n\rceil, p_0, c)]$

$[\mathrm{NeqAddition} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{x} = \underline{y})n \vdash \dot{\neg}((\underline{x} + \underline{z}) = (\underline{y} + \underline{z}))n]$

$[\mathrm{NeqAddition} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{x} = \underline{y})n \vdash (\underline{x} + \underline{z}) = (\underline{y} + \underline{z}) \vdash \mathrm{eqReflexivity} \gg \underline{z} = \underline{z}; \mathrm{SubtractEquations} \rhd (\underline{x} + \underline{z}) = (\underline{y} + \underline{z}) \rhd \underline{z} = \underline{z} \gg \underline{x} = \underline{y}; \mathrm{FromContradiction} \rhd \underline{x} = \underline{y} \rhd \dot{\neg}(\underline{x} = \underline{y})n \gg \dot{\neg}((\underline{x} + \underline{z}) = (\underline{y} + \underline{z}))n; \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \mathrm{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{x} = \underline{y})n \vdash (\underline{x}+\underline{z}) = (\underline{y}+\underline{z}) \vdash \dot{\neg}((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n \gg \dot{\neg}(\underline{x} = \underline{y})n \Rightarrow (\underline{x}+\underline{z}) = (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n; \dot{\neg}(\underline{x} = \underline{y})n \vdash \mathrm{MP} \rhd \dot{\neg}(\underline{x} = \underline{y})n \Rightarrow (\underline{x} + \underline{z}) = (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}((\underline{x} + \underline{z}) = (\underline{y} + \underline{z}))n \rhd \dot{\neg}(\underline{x} = \underline{y})n \gg (\underline{x}+\underline{z}) = (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n; \mathrm{prop\ lemma\ imply\ negation} \rhd (\underline{x}+\underline{z}) = (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}((\underline{x} + \underline{z}) = (\underline{y} + \underline{z}))n \gg \dot{\neg}((\underline{x} + \underline{z}) = (\underline{y} + \underline{z}))n\rceil, p_0, c)]$

$[\mathrm{NeqMultiplication} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{z} = 0)n \vdash \dot{\neg}(\underline{x} = \underline{y})n \vdash \dot{\neg}((\underline{x} * \underline{z}) = (\underline{y} * \underline{z}))n]$

[NeqMultiplication $\stackrel{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(\underline{z}=0)\text{n} \vdash \dot{\neg}(\underline{x}=\underline{y})\text{n} \vdash (\underline{x}*\underline{z}) = (\underline{y}*\underline{z}) \vdash \text{x} = \text{x}*\text{y}*(1/\text{y}) \rhd \dot{\neg}(\underline{z}=0)\text{n} \gg \underline{x} = ((\underline{x}*\underline{z})*\text{rec}\underline{z}); \text{eqMultiplication} \rhd (\underline{x}*\underline{z}) = (\underline{y}*\underline{z}) \gg ((\underline{x}*\underline{z})*\text{rec}\underline{z}) = ((\underline{y}*\underline{z})*\text{rec}\underline{z}); \text{x} = \text{x}*\text{y}*(1/\text{y}) \rhd \dot{\neg}(\underline{z}=0)\text{n} \gg \underline{y} = ((\underline{y}*\underline{z})*\text{rec}\underline{z}); \text{eqSymmetry} \rhd \underline{y} = ((\underline{y}*\underline{z})*\text{rec}\underline{z}) \gg ((\underline{y}*\underline{z})*\text{rec}\underline{z}) = \underline{y}; \text{eqTransitivity4} \rhd \underline{x} = ((\underline{x}*\underline{z})*\text{rec}\underline{z}) \rhd ((\underline{x}*\underline{z})*\text{rec}\underline{z}) = ((\underline{y}*\underline{z})*\text{rec}\underline{z}) \rhd ((\underline{y}*\underline{z})*\text{rec}\underline{z}) = \underline{y} \gg \underline{x} = \underline{y}; \text{FromContradiction} \rhd \underline{x} = \underline{y} \rhd \dot{\neg}(\underline{x}=\underline{y})\text{n} \gg \dot{\neg}((\underline{x}*\underline{z}) = (\underline{y}*\underline{z}))\text{n}; \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \text{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(\underline{z}=0)\text{n} \vdash \dot{\neg}(\underline{x}=\underline{y})\text{n} \vdash (\underline{x}*\underline{z}) = (\underline{y}*\underline{z}) \vdash \dot{\neg}((\underline{x}*\underline{z}) = (\underline{y}*\underline{z}))\text{n} \gg \dot{\neg}(\underline{z}=0)\text{n} \Rightarrow \dot{\neg}(\underline{x}=\underline{y})\text{n} \Rightarrow (\underline{x}*\underline{z}) = (\underline{y}*\underline{z}) \Rightarrow \dot{\neg}((\underline{x}*\underline{z}) = (\underline{y}*\underline{z}))\text{n}; \dot{\neg}(\underline{z}=0)\text{n} \vdash \dot{\neg}(\underline{x}=\underline{y})\text{n} \vdash \text{MP2} \rhd \dot{\neg}(\underline{z}=0)\text{n} \Rightarrow \dot{\neg}(\underline{x}=\underline{y})\text{n} \Rightarrow (\underline{x}*\underline{z}) = (\underline{y}*\underline{z}) \Rightarrow \dot{\neg}((\underline{x}*\underline{z}) = (\underline{y}*\underline{z}))\text{n} \rhd \dot{\neg}(\underline{z}=0)\text{n} \rhd \dot{\neg}(\underline{x}=\underline{y})\text{n} \gg (\underline{x}*\underline{z}) = (\underline{y}*\underline{z}) \Rightarrow \dot{\neg}((\underline{x}*\underline{z}) = (\underline{y}*\underline{z}))\text{n}; \text{prop lemma imply negation} \rhd (\underline{x}*\underline{z}) = (\underline{y}*\underline{z}) \Rightarrow \dot{\neg}((\underline{x}*\underline{z}) = (\underline{y}*\underline{z}))\text{n} \gg \dot{\neg}((\underline{x}*\underline{z}) = (\underline{y}*\underline{z}))\text{n}\rceil, \text{p}_0, c)$]

(*** NEGATIVE ***)

[UniqueNegative $\stackrel{\text{stmt}}{\rightarrow}$ $\text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{x}+\underline{y}) = 0 \vdash (\underline{x}+\underline{z}) = 0 \vdash \underline{y} = \underline{z}$]

[UniqueNegative $\stackrel{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{x}+\underline{y}) = 0 \vdash (\underline{x}+\underline{z}) = 0 \vdash \text{plusCommutativity} \gg (\underline{y}+\underline{x}) = (\underline{x}+\underline{y}); \text{eqTransitivity} \rhd (\underline{y}+\underline{x}) = (\underline{x}+\underline{y}) \rhd (\underline{x}+\underline{y}) = 0 \gg (\underline{y}+\underline{x}) = 0; \text{PositiveToRight(Eq)} \rhd (\underline{y}+\underline{x}) = 0 \gg \underline{y} = (0 + (-\text{u}\underline{x})); \text{plusCommutativity} \gg (\underline{z}+\underline{x}) = (\underline{x}+\underline{z}); \text{eqTransitivity} \rhd (\underline{z}+\underline{x}) = (\underline{x}+\underline{z}) \rhd (\underline{x}+\underline{z}) = 0 \gg (\underline{z}+\underline{x}) = 0; \text{PositiveToRight(Eq)} \rhd (\underline{z}+\underline{x}) = 0 \gg \underline{z} = (0 + (-\text{u}\underline{x})); \text{eqSymmetry} \rhd \underline{z} = (0 + (-\text{u}\underline{x})) \gg (0 + (-\text{u}\underline{x})) = \underline{z}; \text{eqTransitivity} \rhd \underline{y} = (0 + (-\text{u}\underline{x})) \rhd (0 + (-\text{u}\underline{x})) = \underline{z} \gg \underline{y} = \underline{z}\rceil, \text{p}_0, c)$]

[toNotLess $\stackrel{\text{stmt}}{\rightarrow}$ $\text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n})\text{n})\text{n}$]

[toNotLess $\stackrel{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash \underline{y} <= \underline{x} \vdash \text{leqAntisymmetry} \rhd \underline{y} <= \underline{x} \rhd \underline{x} <= \underline{y} \gg \underline{y} = \underline{x}; \text{AddDoubleNeg} \rhd \underline{y} = \underline{x} \gg \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n}; \forall \underline{x}\colon \forall \underline{y}\colon \text{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash \underline{y} <= \underline{x} \vdash \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n} \gg \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n}; \underline{x} <= \underline{y} \vdash \text{MP} \rhd \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n} \rhd \underline{x} <= \underline{y} \gg \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n}; \text{AddDoubleNeg} \rhd \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n} \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n})\text{n})\text{n}; \text{Repetition} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n})\text{n})\text{n} \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n})\text{n})\text{n}; \text{Repetition} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n})\text{n})\text{n} \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})\text{n})\text{n})\text{n})\text{n}\rceil, \text{p}_0, c)$]

[FromLess $\stackrel{\text{stmt}}{\rightarrow}$ $\text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\text{n})\text{n})\text{n} \vdash \dot{\neg}(\underline{y} <= \underline{x})\text{n}$]

[FromLess $\stackrel{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{y} <= \underline{x} \vdash \text{toNotLess} \rhd \underline{y} <= \underline{x} \gg \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\text{n})\text{n})\text{n})\text{n}; \forall \underline{x}\colon \forall \underline{y}\colon \text{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \underline{y} <= \underline{x} \vdash \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\text{n})\text{n})\text{n})\text{n} \gg \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\text{n})\text{n})\text{n})\text{n}; \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\text{n})\text{n})\text{n} \vdash \text{AddDoubleNeg} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\text{n})\text{n})\text{n} \gg \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\text{n})\text{n})\text{n})\text{n})\text{n}; \text{MT} \rhd \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\text{n})\text{n})\text{n})\text{n} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\text{n})\text{n})\text{n})\text{n})\text{n} \gg \dot{\neg}(\underline{y} <= \underline{x})\text{n}\rceil, \text{p}_0, c)$]

[fromNotLess $\stackrel{\text{stmt}}{\rightarrow}$ $\text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\text{n})\text{n})\text{n})\text{n} \vdash \underline{y} <= \underline{x}$]

[fromNotLess $\stackrel{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀x: ∀y: ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⊢ x <= y ⊢ Repetition ▷ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ≫ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n; RemoveDoubleNeg ▷ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ≫ x <= y ⇒ ∸(∸(x = y)n)n; MP ▷ x <= y ⇒ ∸(∸(x = y)n)n ▷ x <= y ≫ ∸(∸(x = y)n)n; RemoveDoubleNeg ▷ ∸(∸(x = y)n)n ≫ x = y; eqSymmetry ▷ x = y ≫ y = x; eqLeq ▷ y = x ≫ y <= x; ∀x: ∀y: Ded ▷ ∀x: ∀y: ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⊢ x <= y ⊢ y <= x ≫ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⇒ x <= y ⇒ y <= x; ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⊢ MP ▷ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⇒ x <= y ⇒ y <= x ▷ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ≫ x <= y ⇒ y <= x; AutoImply ≫ y <= x ⇒ y <= x; leqTotality ≫ ∸(x <= y)n ⇒ y <= x; FromDisjuncts ▷ ∸(x <= y)n ⇒ y <= x ▷ x <= y ⇒ y <= x ▷ y <= x ⇒ y <= x ≫ y <= x⌉, p_0, c)]

[ToLess $\stackrel{\text{stmt}}{\to}$ SystemQ ⊢ ∀x: ∀y: ∸(x <= y)n ⊢ ∸(y <= x ⇒ ∸(∸(y = x)n)n)n]

[ToLess $\stackrel{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀x: ∀y: ∸(∸(y <= x ⇒ ∸(∸(y = x)n)n)n)n ⊢ fromNotLess ▷ ∸(∸(y <= x ⇒ ∸(∸(y = x)n)n)n)n ≫ x <= y; ∀x: ∀y: Ded ▷ ∀x: ∀y: ∸(∸(y <= x ⇒ ∸(∸(y = x)n)n)n)n ⊢ x <= y ≫ ∸(∸(y <= x ⇒ ∸(∸(y = x)n)n)n)n ⇒ x <= y; ∸(x <= y)n ⊢ NegativeMT ▷ ∸(∸(y <= x ⇒ ∸(∸(y = x)n)n)n)n ⇒ x <= y ▷ ∸(x <= y)n ≫ ∸(y <= x ⇒ ∸(∸(y = x)n)n)n⌉, p_0, c)]

(*** LEQ ***)

[LeqLessEq $\stackrel{\text{stmt}}{\to}$ SystemQ ⊢ ∀x: ∀y: x <= y ⊢ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⇒ x = y]

[LeqLessEq $\stackrel{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀x: ∀y: x <= y ⊢ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⊢ fromNotLess ▷ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ≫ y <= x; leqAntisymmetry ▷ x <= y ▷ y <= x ≫ x = y; ∀x: ∀y: Ded ▷ ∀x: ∀y: x <= y ⊢ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⊢ x = y ≫ x <= y ⇒ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⇒ x = y; x <= y ⊢ MP ▷ x <= y ⇒ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⇒ x = y ▷ x <= y ≫ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⇒ x = y; Repetition ▷ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⇒ x = y ≫ ∸(∸(x <= y ⇒ ∸(∸(x = y)n)n)n)n ⇒ x = y⌉, p_0, c)]

[LessLeq $\stackrel{\text{stmt}}{\to}$ SystemQ ⊢ ∀x: ∀y: ∸(x <= y ⇒ ∸(∸(x = y)n)n)n ⊢ x <= y]

[LessLeq $\stackrel{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀x: ∀y: ∸(x <= y ⇒ ∸(∸(x = y)n)n)n ⊢ Repetition ▷ ∸(x <= y ⇒ ∸(∸(x = y)n)n)n ≫ ∸(x <= y ⇒ ∸(∸(x = y)n)n)n; FirstConjunct ▷ ∸(x <= y ⇒ ∸(∸(x = y)n)n)n ≫ x <= y⌉, p_0, c)]

[FromLeqGeq $\stackrel{\text{stmt}}{\to}$ SystemQ ⊢ ∀a: ∀x: ∀y: x <= y ⇒ a ⊢ y <= x ⇒ a ⊢ a]

[FromLeqGeq $\stackrel{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀a: ∀x: ∀y: x <= y ⇒ a ⊢ y <= x ⇒ a ⊢ leqTotality ≫ ∸(x <= y)n ⇒ y <= x; FromDisjuncts ▷ ∸(x <= y)n ⇒ y <= x ▷ x <= y ⇒ a ▷ y <= x ⇒ a ≫ a⌉, p_0, c)]

[SubLessRight $\stackrel{\text{stmt}}{\to}$ SystemQ ⊢ ∀x: ∀y: ∀z: x = y ⊢ ∸(z <= x ⇒ ∸(∸(z = x)n)n)n ⊢ ∸(z <= y ⇒ ∸(∸(z = y)n)n)n]

[SubLessRight $\stackrel{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀x: ∀y: ∀z: x = y ⊢ ∸(z <= x ⇒

$\dot{\neg}(\dot{\neg}(\underline{z}=\underline{x})n)n)n \vdash \text{Repetition} \rhd \dot{\neg}(\underline{z} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z}=\underline{x})n)n)n \gg \dot{\neg}(\underline{z} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z}=\underline{x})n)n)n; \text{FirstConjunct} \rhd \dot{\neg}(\underline{z} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z}=\underline{x})n)n)n \gg \underline{z} <= \underline{x}; \text{subLeqRight} \rhd \underline{x}=\underline{y} \rhd \underline{z} <= \underline{x} \gg \underline{z} <= \underline{y}; \text{SecondConjunct} \rhd \dot{\neg}(\underline{z} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z}=\underline{x})n)n)n \gg \dot{\neg}(\underline{z}=\underline{x})n; \text{SubNeqRight} \rhd \underline{x}=\underline{y} \rhd \dot{\neg}(\underline{z}=\underline{x})n \gg \dot{\neg}(\underline{z}=\underline{y})n; \text{JoinConjuncts} \rhd \underline{z} <= \underline{y} \rhd \dot{\neg}(\underline{z}=\underline{y})n \gg \dot{\neg}(\underline{z} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z}=\underline{y})n)n)n\rceil, p_0, \mathsf{c})]$

$[\text{SubLessLeft} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{x}=\underline{y} \vdash \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{z})n)n)n \vdash \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n]$

$[\text{SubLessLeft} \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{x}=\underline{y} \vdash \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{z})n)n)n \vdash \text{Repetition} \rhd \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{z})n)n)n \gg \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{z})n)n)n; \text{FirstConjunct} \rhd \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{z})n)n)n \gg \underline{x} <= \underline{z}; \text{subLeqLeft} \rhd \underline{x}=\underline{y} \rhd \underline{x} <= \underline{z} \gg \underline{y} <= \underline{z}; \text{SecondConjunct} \rhd \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{z})n)n)n \gg \dot{\neg}(\underline{x}=\underline{z})n; \text{SubNeqLeft} \rhd \underline{x}=\underline{y} \rhd \dot{\neg}(\underline{x}=\underline{z})n \gg \dot{\neg}(\underline{y}=\underline{z})n; \text{JoinConjuncts} \rhd \underline{y} <= \underline{z} \rhd \dot{\neg}(\underline{y}=\underline{z})n \gg \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n\rceil, p_0, \mathsf{c})]$

$[\text{leqLessTransitivity} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n \vdash \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{z})n)n)n]$

$[\text{leqLessTransitivity} \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n \vdash \underline{x}=\underline{z} \vdash \text{FirstConjunct} \rhd \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n \gg \underline{y} <= \underline{z}; \text{SecondConjunct} \rhd \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n \gg \dot{\neg}(\underline{y}=\underline{z})n; \text{subLeqLeft} \rhd \underline{x}=\underline{z} \rhd \underline{x} <= \underline{y} \gg \underline{z} <= \underline{y}; \text{leqAntisymmetry} \rhd \underline{y} <= \underline{z} \rhd \underline{z} <= \underline{y} \gg \underline{y}=\underline{z}; \text{FromContradiction} \rhd \underline{y}=\underline{z} \rhd \dot{\neg}(\underline{y}=\underline{z})n \gg \dot{\neg}(\underline{x}=\underline{z})n; \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \text{Ded} \rhd \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n \vdash \underline{x}=\underline{z} \vdash \dot{\neg}(\underline{x}=\underline{z})n \gg \underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n \Rightarrow \underline{x}=\underline{z} \Rightarrow \dot{\neg}(\underline{x}=\underline{z})n; \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n \vdash \text{MP2} \rhd \underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n \Rightarrow \underline{x}=\underline{z} \Rightarrow \dot{\neg}(\underline{x}=\underline{z})n \rhd \underline{x} <= \underline{y} \rhd \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n \gg \underline{x}=\underline{z} \Rightarrow \dot{\neg}(\underline{x}=\underline{z})n; \text{prop lemma imply negation} \rhd \underline{x}=\underline{z} \Rightarrow \dot{\neg}(\underline{x}=\underline{z})n \gg \dot{\neg}(\underline{x}=\underline{z})n; \text{FirstConjunct} \rhd \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{z})n)n)n \gg \underline{y} <= \underline{z}; \text{leqTransitivity} \rhd \underline{x} <= \underline{y} \rhd \underline{y} <= \underline{z} \gg \underline{x} <= \underline{z}; \text{JoinConjuncts} \rhd \underline{x} <= \underline{z} \rhd \dot{\neg}(\underline{x}=\underline{z})n \gg \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{z})n)n)n\rceil, p_0, \mathsf{c})]$

$[\text{LessAddition} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{y})n)n)n \vdash \dot{\neg}((\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n)n)n]$

$[\text{LessAddition} \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{y})n)n)n \vdash \text{LessLeq} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{y})n)n)n \gg \underline{x} <= \underline{y}; \text{leqAddition} \rhd \underline{x} <= \underline{y} \gg (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}); \text{LessNeq} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{y})n)n)n \gg \dot{\neg}(\underline{x}=\underline{y})n; \text{NeqAddition} \rhd \dot{\neg}(\underline{x}=\underline{y})n \gg \dot{\neg}((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n; \text{JoinConjuncts} \rhd (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \rhd \dot{\neg}((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n \gg \dot{\neg}((\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n)n)n\rceil, p_0, \mathsf{c})]$

$[\text{LessAdditionLeft} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{y})n)n)n \vdash \dot{\neg}((\underline{z}+\underline{x}) <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{z}+\underline{x}) = (\underline{z}+\underline{y}))n)n)n]$

$[\text{LessAdditionLeft} \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{y})n)n)n \vdash \text{LessAddition} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x}=\underline{y})n)n)n \gg \dot{\neg}((\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n)n)n; \text{plusCommutativity} \gg (\underline{x}+\underline{z}) =$

$(\underline{z}+\underline{x}); \text{SubLessLeft} \rhd (\underline{x}+\underline{z}) = (\underline{z}+\underline{x}) \rhd \dot{\neg}((\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))\text{n})\text{n})\text{n} \gg \dot{\neg}((\underline{z}+\underline{x}) <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{z}+\underline{x}) = (\underline{y}+\underline{z}))\text{n})\text{n})\text{n}; \text{plusCommutativity} \gg (\underline{y}+\underline{z}) = (\underline{z}+\underline{y}); \text{SubLessRight} \rhd (\underline{y}+\underline{z}) = (\underline{z}+\underline{y}) \rhd \dot{\neg}((\underline{z}+\underline{x}) <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{z}+\underline{x}) = (\underline{y}+\underline{z}))\text{n})\text{n})\text{n} \gg \dot{\neg}((\underline{z}+\underline{x}) <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{z}+\underline{x}) = (\underline{z}+\underline{y}))\text{n})\text{n})\text{n}\rceil, \text{p}_0, \mathsf{c})]$

$[\text{Leq}+1 \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{x} <= (\underline{y}+1) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+1))\text{n})\text{n})\text{n}]$

$[\text{Leq}+1 \stackrel{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash 0 < 1 \gg \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)\text{n})\text{n})\text{n}; \text{LessAdditionLeft} \rhd \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)\text{n})\text{n})\text{n} \gg \dot{\neg}((\underline{y}+0) <= (\underline{y}+1) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+0) = (\underline{y}+1))\text{n})\text{n})\text{n}; \text{plus0} \gg (\underline{y}+0) = \underline{y}; \text{SubLessLeft} \rhd (\underline{y}+0) = \underline{y} \rhd \dot{\neg}((\underline{y}+0) <= (\underline{y}+1) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+0) = (\underline{y}+1))\text{n})\text{n})\text{n} \gg \dot{\neg}(\underline{y} <= (\underline{y}+1) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (\underline{y}+1))\text{n})\text{n})\text{n}; \text{leqLessTransitivity} \rhd \underline{x} <= \underline{y} \rhd \dot{\neg}(\underline{y} <= (\underline{y}+1) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (\underline{y}+1))\text{n})\text{n})\text{n} \gg \dot{\neg}(\underline{x} <= (\underline{y}+1) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+1))\text{n})\text{n})\text{n}\rceil, \text{p}_0, \mathsf{c})]$

$[\text{LeqAdditionLeft} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \underline{x} <= \underline{y} \vdash (\underline{z}+\underline{x}) <= (\underline{z}+\underline{y})]$

$[\text{LeqAdditionLeft} \stackrel{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \underline{x} <= \underline{y} \vdash \text{leqAddition} \rhd \underline{x} <= \underline{y} \gg (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}); \text{plusCommutativity} \gg (\underline{x}+\underline{z}) = (\underline{z}+\underline{x}); \text{plusCommutativity} \gg (\underline{y}+\underline{z}) = (\underline{z}+\underline{y}); \text{subLeqLeft} \rhd (\underline{x}+\underline{z}) = (\underline{z}+\underline{x}) \rhd (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \gg (\underline{z}+\underline{x}) <= (\underline{y}+\underline{z}); \text{subLeqRight} \rhd (\underline{y}+\underline{z}) = (\underline{z}+\underline{y}) \rhd (\underline{z}+\underline{x}) <= (\underline{y}+\underline{z}) \gg (\underline{z}+\underline{x}) <= (\underline{z}+\underline{y})\rceil, \text{p}_0, \mathsf{c})]$

$[\text{leqSubtraction} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \vdash \underline{x} <= \underline{y}]$

$[\text{leqSubtraction} \stackrel{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \vdash \text{leqAddition} \rhd (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \gg ((\underline{x}+\underline{z}) + (-\text{u}\underline{z})) <= ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})); \text{x} = \text{x}+\text{y}-\text{y} \gg \underline{x} = ((\underline{x}+\underline{z}) + (-\text{u}\underline{z})); \text{eqSymmetry} \rhd \underline{x} = ((\underline{x}+\underline{z}) + (-\text{u}\underline{z})) \gg ((\underline{x}+\underline{z}) + (-\text{u}\underline{z})) = \underline{x}; \text{x} = \text{x}+\text{y}-\text{y} \gg \underline{y} = ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})); \text{eqSymmetry} \rhd \underline{y} = ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})) \gg ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})) = \underline{y}; \text{subLeqLeft} \rhd ((\underline{x}+\underline{z}) + (-\text{u}\underline{z})) = \underline{x} \rhd ((\underline{x}+\underline{z}) + (-\text{u}\underline{z})) <= ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})) \gg \underline{x} <= ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})); \text{subLeqRight} \rhd ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})) = \underline{y} \rhd \underline{x} <= ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})) \gg \underline{x} <= \underline{y}\rceil, \text{p}_0, \mathsf{c})]$

$[\text{leqSubtractionLeft} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{z}+\underline{x}) <= (\underline{z}+\underline{y}) \vdash \underline{x} <= \underline{y}]$

$[\text{leqSubtractionLeft} \stackrel{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{z}+\underline{x}) <= (\underline{z}+\underline{y}) \vdash \text{plusCommutativity} \gg (\underline{z}+\underline{x}) = (\underline{x}+\underline{z}); \text{plusCommutativity} \gg (\underline{z}+\underline{y}) = (\underline{y}+\underline{z}); \text{subLeqLeft} \rhd (\underline{z}+\underline{x}) = (\underline{x}+\underline{z}) \rhd (\underline{z}+\underline{x}) <= (\underline{z}+\underline{y}) \gg (\underline{x}+\underline{z}) <= (\underline{z}+\underline{y}); \text{subLeqRight} \rhd (\underline{z}+\underline{y}) = (\underline{y}+\underline{z}) \rhd (\underline{x}+\underline{z}) <= (\underline{z}+\underline{y}) \gg (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}); \text{leqSubtraction} \rhd (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \gg \underline{x} <= \underline{y}\rceil, \text{p}_0, \mathsf{c})]$

$[\text{negativeToLeft(Leq)} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \underline{x} <= (\underline{y}+(-\text{u}\underline{z})) \vdash (\underline{x}+\underline{z}) <= \underline{y}]$

$[\text{negativeToLeft(Leq)} \stackrel{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \underline{x} <= (\underline{y}+(-\text{u}\underline{z})) \vdash \text{leqAddition} \rhd \underline{x} <= (\underline{y}+(-\text{u}\underline{z})) \gg (\underline{x}+\underline{z}) <= ((\underline{y}+(-\text{u}\underline{z})) + \underline{z}); \text{x} = \text{x}+\text{y}-\text{y} \gg \underline{y} = ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})); \text{Three2threeTerms} \gg ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})) = ((\underline{y}+(-\text{u}\underline{z})) + \underline{z}); \text{eqTransitivity} \rhd \underline{y} = ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})) \rhd ((\underline{y}+\underline{z}) + (-\text{u}\underline{z})) = ((\underline{y}+(-\text{u}\underline{z})) + \underline{z}) \gg \underline{y} = ((\underline{y}+(-\text{u}\underline{z})) + \underline{z}); \text{eqSymmetry} \rhd \underline{y} = ((\underline{y}+(-\text{u}\underline{z})) + \underline{z}) \gg ((\underline{y}+(-\text{u}\underline{z})) + \underline{z}) = \underline{y}; \text{subLeqRight} \rhd ((\underline{y}+(-\text{u}\underline{z})) + \underline{z}) = \underline{y} \rhd (\underline{x}+\underline{z}) <= ((\underline{y}+(-\text{u}\underline{z})) + \underline{z}) \gg (\underline{x}+\underline{z}) <= \underline{y}\rceil, \text{p}_0, \mathsf{c})]$

$[\mathrm{negativeToLeft(Leq)(1term)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{y}\colon \forall \underline{z}\colon 0 <= (\underline{y} + (-\mathrm{u}\underline{z})) \vdash \underline{z} <= \underline{y}]$

$[\mathrm{negativeToLeft(Leq)(1term)} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{y}\colon \forall \underline{z}\colon 0 <= (\underline{y} + (-\mathrm{u}\underline{z})) \vdash \mathrm{negativeToLeft(Leq)} \rhd 0 <= (\underline{y} + (-\mathrm{u}\underline{z})) \gg (0 + \underline{z}) <= \underline{y}; \mathrm{plus0Left} \gg (0 + \underline{z}) = \underline{z}; \mathrm{subLeqLeft} \rhd (0 + \underline{z}) = \underline{z} \gg \underline{z} <= \underline{y}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveToLeft(Leq)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \underline{x} <= (\underline{y} + \underline{z}) \vdash (\underline{x} + (-\mathrm{u}\underline{z})) <= \underline{y}]$

$[\mathrm{PositiveToLeft(Leq)} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \underline{x} <= (\underline{y} + \underline{z}) \vdash \mathrm{leqAddition} \rhd \underline{x} <= (\underline{y} + \underline{z}) \gg (\underline{x} + (-\mathrm{u}\underline{z})) <= ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})); \mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg \underline{y} = ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})); \mathrm{eqSymmetry} \rhd \underline{y} = ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})) \gg ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})) = \underline{y}; \mathrm{subLeqRight} \rhd ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})) = \underline{y} \rhd (\underline{x} + (-\mathrm{u}\underline{z})) <= ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})) \gg (\underline{x} + (-\mathrm{u}\underline{z})) <= \underline{y}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{thirdGeq} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(\underline{x} <= \mathsf{c}_{\mathrm{Ex}} \Rightarrow \dot{\neg}(\underline{y} <= \mathsf{c}_{\mathrm{Ex}})\mathrm{n})\mathrm{n}]$

$[\mathrm{thirdGeq} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash \mathrm{leqReflexivity} \gg \underline{y} <= \underline{y}; \mathrm{JoinConjuncts} \rhd \underline{x} <= \underline{y} \rhd \underline{y} <= \underline{y} \gg \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\underline{y} <= \underline{y})\mathrm{n})\mathrm{n}; \mathrm{ExistIntro} @ \mathsf{c}_{\mathrm{Ex}} @ \underline{y} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\underline{y} <= \underline{y})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \mathsf{c}_{\mathrm{Ex}} \Rightarrow \dot{\neg}(\underline{y} <= \mathsf{c}_{\mathrm{Ex}})\mathrm{n})\mathrm{n}; \forall \underline{x}\colon \forall \underline{y}\colon \underline{y} <= \underline{x} \vdash \mathrm{leqReflexivity} \gg \underline{x} <= \underline{x}; \mathrm{JoinConjuncts} \rhd \underline{x} <= \underline{x} \rhd \underline{y} <= \underline{x} \gg \dot{\neg}(\underline{x} <= \underline{x} \Rightarrow \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n})\mathrm{n}; \mathrm{ExistIntro} @ \mathsf{c}_{\mathrm{Ex}} @ \underline{x} \rhd \dot{\neg}(\underline{x} <= \underline{x} \Rightarrow \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \mathsf{c}_{\mathrm{Ex}} \Rightarrow \dot{\neg}(\underline{y} <= \mathsf{c}_{\mathrm{Ex}})\mathrm{n})\mathrm{n}; \forall \underline{x}\colon \forall \underline{y}\colon \mathrm{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{x} <= \mathsf{c}_{\mathrm{Ex}} \Rightarrow \dot{\neg}(\underline{y} <= \mathsf{c}_{\mathrm{Ex}})\mathrm{n})\mathrm{n} \gg \underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\underline{x} <= \mathsf{c}_{\mathrm{Ex}} \Rightarrow \dot{\neg}(\underline{y} <= \mathsf{c}_{\mathrm{Ex}})\mathrm{n})\mathrm{n}; \mathrm{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \underline{y} <= \underline{x} \vdash \dot{\neg}(\underline{x} <= \mathsf{c}_{\mathrm{Ex}} \Rightarrow \dot{\neg}(\underline{y} <= \mathsf{c}_{\mathrm{Ex}})\mathrm{n})\mathrm{n} \gg \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\underline{x} <= \mathsf{c}_{\mathrm{Ex}} \Rightarrow \dot{\neg}(\underline{y} <= \mathsf{c}_{\mathrm{Ex}})\mathrm{n})\mathrm{n}; \mathrm{leqTotality} \gg \dot{\neg}(\underline{x} <= \underline{y})\mathrm{n} \Rightarrow \underline{y} <= \underline{x}; \mathrm{FromDisjuncts} \rhd \dot{\neg}(\underline{x} <= \underline{y})\mathrm{n} \Rightarrow \underline{y} <= \underline{x} \rhd \underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\underline{x} <= \mathsf{c}_{\mathrm{Ex}} \Rightarrow \dot{\neg}(\underline{y} <= \mathsf{c}_{\mathrm{Ex}})\mathrm{n})\mathrm{n} \rhd \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\underline{x} <= \mathsf{c}_{\mathrm{Ex}} \Rightarrow \dot{\neg}(\underline{y} <= \mathsf{c}_{\mathrm{Ex}})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \mathsf{c}_{\mathrm{Ex}} \Rightarrow \dot{\neg}(\underline{y} <= \mathsf{c}_{\mathrm{Ex}})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{LeqNegated} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash (-\mathrm{u}\underline{y}) <= (-\mathrm{u}\underline{x})]$

$[\mathrm{LeqNegated} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash \mathrm{leqAddition} \rhd \underline{x} <= \underline{y} \gg (\underline{x} + (-\mathrm{u}\underline{x})) <= (\underline{y} + (-\mathrm{u}\underline{x})); \mathrm{Negative} \gg (\underline{x} + (-\mathrm{u}\underline{x})) = 0; \mathrm{subLeqLeft} \rhd (\underline{x} + (-\mathrm{u}\underline{x})) = 0 \rhd (\underline{x} + (-\mathrm{u}\underline{x})) <= (\underline{y} + (-\mathrm{u}\underline{x})) \gg 0 <= (\underline{y} + (-\mathrm{u}\underline{x})); \mathrm{plusCommutativity} \gg (\underline{y} + (-\mathrm{u}\underline{x})) = ((-\mathrm{u}\underline{x}) + \underline{y}); \mathrm{subLeqRight} \rhd (\underline{y} + (-\mathrm{u}\underline{x})) = ((-\mathrm{u}\underline{x}) + \underline{y}) \rhd 0 <= (\underline{y} + (-\mathrm{u}\underline{x})) \gg 0 <= ((-\mathrm{u}\underline{x}) + \underline{y}); \mathrm{leqAddition} \rhd 0 <= ((-\mathrm{u}\underline{x}) + \underline{y}) \gg (0 + (-\mathrm{u}\underline{y})) <= (((-\mathrm{u}\underline{x}) + \underline{y}) + (-\mathrm{u}\underline{y})); \mathrm{plus0Left} \gg (0 + (-\mathrm{u}\underline{y})) = (-\mathrm{u}\underline{y}); \mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg (-\mathrm{u}\underline{x}) = (((-\mathrm{u}\underline{x}) + \underline{y}) + (-\mathrm{u}\underline{y})); \mathrm{eqSymmetry} \rhd (-\mathrm{u}\underline{x}) = (((-\mathrm{u}\underline{x}) + \underline{y}) + (-\mathrm{u}\underline{y})) \gg (((-\mathrm{u}\underline{x}) + \underline{y}) + (-\mathrm{u}\underline{y})) = (-\mathrm{u}\underline{x}); \mathrm{subLeqLeft} \rhd (0 + (-\mathrm{u}\underline{y})) = (-\mathrm{u}\underline{y}) \rhd (0 + (-\mathrm{u}\underline{y})) <= (((-\mathrm{u}\underline{x}) + \underline{y}) + (-\mathrm{u}\underline{y})) \gg (-\mathrm{u}\underline{y}) <= (((-\mathrm{u}\underline{x}) + \underline{y}) + (-\mathrm{u}\underline{y})); \mathrm{subLeqRight} \rhd (((-\mathrm{u}\underline{x}) + \underline{y}) + (-\mathrm{u}\underline{y})) = (-\mathrm{u}\underline{x}) \rhd (-\mathrm{u}\underline{y}) <= (((-\mathrm{u}\underline{x}) + \underline{y}) + (-\mathrm{u}\underline{y})) \gg (-\mathrm{u}\underline{y}) <= (-\mathrm{u}\underline{x})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{AddEquations(Leq)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \forall \underline{u}\colon \underline{x} <= \underline{y} \vdash \underline{z} <= \underline{u} \vdash (\underline{x} + \underline{z}) <= (\underline{y} + \underline{u})]$

$[\mathrm{AddEquations(Leq)} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \forall \underline{u}\colon \underline{x} <= \underline{y} \vdash \underline{z} <= \underline{u} \vdash \mathrm{leqAddition} \rhd \underline{x} <= \underline{y} \gg (\underline{x} + \underline{z}) <= (\underline{y} + \underline{z}); \mathrm{LeqAdditionLeft} \rhd \underline{z} <= \underline{u} \gg (\underline{y} + \underline{z}) <= (\underline{y} + \underline{u}); \mathrm{leqTransitivity} \rhd (\underline{x} + \underline{z}) <= (\underline{y} + \underline{z}) \rhd (\underline{y} + \underline{z}) <= (\underline{y} + \underline{u}) \gg (\underline{x} + \underline{z}) <= (\underline{y} + \underline{u})\rceil, \mathrm{p}_0, \mathsf{c})]$

(*** LESS ***)

$[\mathrm{LeqNeqLess} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{x} = \underline{y})\mathrm{n} \vdash \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{LeqNeqLess} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{x} = \underline{y})\mathrm{n} \vdash \mathrm{JoinConjuncts} \rhd \underline{x} <= \underline{y} \rhd \dot{\neg}(\underline{x} = \underline{y})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, c)]$

$[\mathrm{LessMultiplication} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}((\underline{x} * \underline{z}) <= (\underline{y} * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = (\underline{y} * \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{LessMultiplication} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{LessLeq} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{x} <= \underline{y}; \mathrm{LessLeq} \rhd \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{z}; \mathrm{leqMultiplication} \rhd 0 <= \underline{z} \rhd \underline{x} <= \underline{y} \gg (\underline{x} * \underline{z}) <= (\underline{y} * \underline{z}); \mathrm{LessNeq} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} = \underline{y})\mathrm{n}; \mathrm{LessNeq} \rhd \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 = \underline{z})\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot{\neg}(0 = \underline{z})\mathrm{n} \gg \dot{\neg}(\underline{z} = 0)\mathrm{n}; \mathrm{NeqMultiplication} \rhd \dot{\neg}(\underline{z} = 0)\mathrm{n} \rhd \dot{\neg}(\underline{x} = \underline{y})\mathrm{n} \gg \dot{\neg}((\underline{x} * \underline{z}) = (\underline{y} * \underline{z}))\mathrm{n}; \mathrm{LeqNeqLess} \rhd (\underline{x} * \underline{z}) <= (\underline{y} * \underline{z}) \rhd \dot{\neg}((\underline{x} * \underline{z}) = (\underline{y} * \underline{z}))\mathrm{n} \gg \dot{\neg}((\underline{x} * \underline{z}) <= (\underline{y} * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = (\underline{y} * \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, c)]$

$[\mathrm{LessMultiplicationLeft} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}((\underline{z} * \underline{x}) <= (\underline{z} * \underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{z} * \underline{x}) = (\underline{z} * \underline{y}))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{LessMultiplicationLeft} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{LessMultiplication} \rhd \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{x} * \underline{z}) <= (\underline{y} * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = (\underline{y} * \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{timesCommutativity} \gg (\underline{x} * \underline{z}) = (\underline{z} * \underline{x}); \mathrm{timesCommutativity} \gg (\underline{y} * \underline{z}) = (\underline{z} * \underline{y}); \mathrm{SubLessLeft} \rhd (\underline{x} * \underline{z}) = (\underline{z} * \underline{x}) \rhd \dot{\neg}((\underline{x} * \underline{z}) <= (\underline{y} * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = (\underline{y} * \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{z} * \underline{x}) <= (\underline{y} * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{z} * \underline{x}) = (\underline{y} * \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SubLessRight} \rhd (\underline{y} * \underline{z}) = (\underline{z} * \underline{y}) \rhd \dot{\neg}((\underline{z} * \underline{x}) <= (\underline{y} * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{z} * \underline{x}) = (\underline{y} * \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{z} * \underline{x}) <= (\underline{z} * \underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{z} * \underline{x}) = (\underline{z} * \underline{y}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, c)]$

$[\mathrm{LessDivision} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon 0 <= \underline{z} \vdash \dot{\neg}((\underline{x} * \underline{z}) <= (\underline{y} * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = (\underline{y} * \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{LessDivision} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon 0 <= \underline{z} \vdash \dot{\neg}((\underline{x} * \underline{z}) <= (\underline{y} * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = (\underline{y} * \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{FromLess} \rhd \dot{\neg}((\underline{x} * \underline{z}) <= (\underline{y} * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = (\underline{y} * \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{y} * \underline{z}) <= (\underline{x} * \underline{z}))\mathrm{n}; \mathrm{leqMultiplicationAxiom} \gg 0 <= \underline{z} \Rightarrow \underline{y} <= \underline{x} \Rightarrow (\underline{y} * \underline{z}) <= (\underline{x} * \underline{z}); \mathrm{MP} \rhd 0 <= \underline{z} \Rightarrow \underline{y} <= \underline{x} \Rightarrow (\underline{y} * \underline{z}) <= (\underline{x} * \underline{z}) \rhd 0 <= \underline{z} \gg \underline{y} <= \underline{x} \Rightarrow (\underline{y} * \underline{z}) <= (\underline{x} * \underline{z}); \mathrm{Contrapositive} \rhd \underline{y} <= \underline{x} \Rightarrow (\underline{y} * \underline{z}) <= (\underline{x} * \underline{z}) \gg \dot{\neg}((\underline{y} * \underline{z}) <= (\underline{x} * \underline{z}))\mathrm{n} \Rightarrow \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n}; \mathrm{MP} \rhd \dot{\neg}((\underline{y} * \underline{z}) <= (\underline{x} * \underline{z}))\mathrm{n} \Rightarrow \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \rhd \dot{\neg}((\underline{y} * \underline{z}) <= (\underline{x} * \underline{z}))\mathrm{n} \gg \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n}; \mathrm{ToLess} \rhd \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, c)]$

$[\mathrm{LessLeqTransitivity} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{y} <= \underline{z} \vdash \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n}]$

[LessLeqTransitivity $\overset{\text{proof}}{\to}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \vdash \underline{y} <= \underline{z} \vdash \underline{z} = \underline{x} \vdash \mathrm{FirstConjunct} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg \underline{x} <= \underline{y}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg \dot{\neg}(\underline{x} = \underline{y})n; \mathrm{subLeqRight} \rhd \underline{z} = \underline{x} \rhd \underline{y} <= \underline{z} \gg \underline{y} <= \underline{x}; \mathrm{leqAntisymmetry} \rhd \underline{x} <= \underline{y} \rhd \underline{y} <= \underline{x} \gg \underline{x} = \underline{y}; \mathrm{FromContradiction} \rhd \underline{x} = \underline{y} \rhd \dot{\neg}(\underline{x} = \underline{y})n \gg \dot{\neg}(\underline{z} = \underline{x})n; \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \mathrm{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \vdash \underline{y} <= \underline{z} \vdash \underline{z} = \underline{x} \vdash \dot{\neg}(\underline{z} = \underline{x})n \gg \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \Rightarrow \underline{y} <= \underline{z} \Rightarrow \underline{z} = \underline{x} \Rightarrow \dot{\neg}(\underline{z} = \underline{x})n; \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \vdash \underline{y} <= \underline{z} \vdash \mathrm{MP2} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \Rightarrow \underline{y} <= \underline{z} \Rightarrow \underline{z} = \underline{x} \Rightarrow \dot{\neg}(\underline{z} = \underline{x})n \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \rhd \underline{y} <= \underline{z} \gg \underline{z} = \underline{x} \Rightarrow \dot{\neg}(\underline{z} = \underline{x})n; \mathrm{prop\ lemma\ imply\ negation} \rhd \underline{z} = \underline{x} \Rightarrow \dot{\neg}(\underline{z} = \underline{x})n \gg \dot{\neg}(\underline{z} = \underline{x})n; \mathrm{NeqSymmetry} \rhd \dot{\neg}(\underline{z} = \underline{x})n \gg \dot{\neg}(\underline{x} = \underline{z})n; \mathrm{FirstConjunct} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg \underline{x} <= \underline{y}; \mathrm{leqTransitivity} \rhd \underline{x} <= \underline{y} \rhd \underline{y} <= \underline{z} \gg \underline{x} <= \underline{z}; \mathrm{JoinConjuncts} \rhd \underline{x} <= \underline{z} \rhd \dot{\neg}(\underline{x} = \underline{z})n \gg \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})n)n)n\rceil, p_0, \mathsf{c})$]

[LessTransitivity $\overset{\text{stmt}}{\to}$ $\mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \vdash \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})n)n)n \vdash \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})n)n)n$]

[LessTransitivity $\overset{\text{proof}}{\to}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \vdash \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})n)n)n \vdash \mathrm{FirstConjunct} \rhd \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})n)n)n \gg \underline{y} <= \underline{z}; \mathrm{LessLeqTransitivity} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \rhd \underline{y} <= \underline{z} \gg \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})n)n)n\rceil, p_0, \mathsf{c})$]

[AddEquations(Less) $\overset{\text{stmt}}{\to}$ $\mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \forall \underline{u}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \vdash \dot{\neg}(\underline{z} <= \underline{u} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = \underline{u})n)n)n \vdash \dot{\neg}((\underline{x} + \underline{z}) <= (\underline{y} + \underline{u}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + \underline{z}) = (\underline{y} + \underline{u}))n)n)n$]

[AddEquations(Less) $\overset{\text{proof}}{\to}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \forall \underline{u}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \vdash \dot{\neg}(\underline{z} <= \underline{u} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = \underline{u})n)n)n \vdash \mathrm{LessAddition} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg \dot{\neg}((\underline{x} + \underline{z}) <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + \underline{z}) = (\underline{y}+\underline{z}))n)n)n; \mathrm{LessAdditionLeft} \rhd \dot{\neg}(\underline{z} <= \underline{u} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = \underline{u})n)n)n \gg \dot{\neg}((\underline{y}+\underline{z}) <= (\underline{y} + \underline{u}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + \underline{z}) = (\underline{y} + \underline{u}))n)n)n; \mathrm{LessTransitivity} \rhd \dot{\neg}((\underline{x} + \underline{z}) <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n)n)n \rhd \dot{\neg}((\underline{y}+\underline{z}) <= (\underline{y}+\underline{u}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+\underline{z}) = (\underline{y} + \underline{u}))n)n)n \gg \dot{\neg}((\underline{x} + \underline{z}) <= (\underline{y} + \underline{u}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + \underline{z}) = (\underline{y} + \underline{u}))n)n)n\rceil, p_0, \mathsf{c})$]

[LessTotality $\overset{\text{stmt}}{\to}$ $\mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \Rightarrow \dot{\neg}(\underline{x} = \underline{y})n \Rightarrow \dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n$]

[LessTotality $\overset{\text{proof}}{\to}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \vdash \dot{\neg}(\underline{x} = \underline{y})n \vdash \mathrm{fromNotLess} \rhd \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \gg \underline{y} <= \underline{x}; \mathrm{NeqSymmetry} \rhd \dot{\neg}(\underline{x} = \underline{y})n \gg \dot{\neg}(\underline{y} = \underline{x})n; \mathrm{LeqNeqLess} \rhd \underline{y} <= \underline{x} \rhd \dot{\neg}(\underline{y} = \underline{x})n \gg \dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n; \forall \underline{x}\colon \forall \underline{y}\colon \mathrm{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \vdash \dot{\neg}(\underline{x} = \underline{y})n \vdash \dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n \gg \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \Rightarrow \dot{\neg}(\underline{x} = \underline{y})n \Rightarrow \dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n; \mathrm{Repetition} \rhd \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \Rightarrow \dot{\neg}(\underline{x} = \underline{y})n \Rightarrow \dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n \gg \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \Rightarrow \dot{\neg}(\underline{x} = \underline{y})n \Rightarrow \dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n\rceil, p_0, \mathsf{c})$]

[NegativeLessPositive $\overset{\text{stmt}}{\to}$ $\mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \vdash \dot{\neg}((-u\underline{x}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{x}) = \underline{x})n)n)n$]

[NegativeLessPositive $\overset{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{FirstConjunct} \rhd \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{\mathsf{x}}; \mathrm{leqAddition} \rhd 0 <= \underline{\mathsf{x}} \gg (0 + (-\mathrm{u}\underline{\mathsf{x}})) <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{x}})); \mathrm{plus0Left} \gg (0 + (-\mathrm{u}\underline{\mathsf{x}})) = (-\mathrm{u}\underline{\mathsf{x}}); \mathrm{Negative} \gg (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{x}})) = 0; \mathrm{subLeqLeft} \rhd (0 + (-\mathrm{u}\underline{\mathsf{x}})) = (-\mathrm{u}\underline{\mathsf{x}}) \rhd (0 + (-\mathrm{u}\underline{\mathsf{x}})) <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{x}})) \gg (-\mathrm{u}\underline{\mathsf{x}}) <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{x}})); \mathrm{subLeqRight} \rhd (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{x}})) = 0 \rhd (-\mathrm{u}\underline{\mathsf{x}}) <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{x}})) \gg (-\mathrm{u}\underline{\mathsf{x}}) <= 0; \mathrm{leqLessTransitivity} \rhd (-\mathrm{u}\underline{\mathsf{x}}) <= 0 \rhd \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((-\mathrm{u}\underline{\mathsf{x}}) <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg((-\mathrm{u}\underline{\mathsf{x}}) = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})$]

[LessNegated $\overset{\text{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg((-\mathrm{u}\underline{\mathsf{y}}) <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg((-\mathrm{u}\underline{\mathsf{y}}) = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n}$]

[LessNegated $\overset{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{LessLeq} \rhd \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{x}} <= \underline{\mathsf{y}}; \mathrm{LeqNegated} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \gg (-\mathrm{u}\underline{\mathsf{y}}) <= (-\mathrm{u}\underline{\mathsf{x}}); \mathrm{LessNeq} \rhd \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n}; \mathrm{NeqNegated} \rhd \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n} \gg \dot\neg((-\mathrm{u}\underline{\mathsf{x}}) = (-\mathrm{u}\underline{\mathsf{y}}))\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot\neg((-\mathrm{u}\underline{\mathsf{x}}) = (-\mathrm{u}\underline{\mathsf{y}}))\mathrm{n} \gg \dot\neg((-\mathrm{u}\underline{\mathsf{y}}) = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n}; \mathrm{LeqNeqLess} \rhd (-\mathrm{u}\underline{\mathsf{y}}) <= (-\mathrm{u}\underline{\mathsf{x}}) \rhd \dot\neg((-\mathrm{u}\underline{\mathsf{y}}) = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n} \gg \dot\neg((-\mathrm{u}\underline{\mathsf{y}}) <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg((-\mathrm{u}\underline{\mathsf{y}}) = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})$]

[$-0 = 0 \overset{\text{stmt}}{\to} \mathrm{SystemQ} \vdash (-\mathrm{u}0) = 0$]

[$-0 = 0 \overset{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \mathrm{Negative} \gg (0 + (-\mathrm{u}0)) = 0; \mathrm{plus0} \gg (0+0) = 0; \mathrm{UniqueNegative} \rhd (0+(-\mathrm{u}0)) = 0 \rhd (0+0) = 0 \gg (-\mathrm{u}0) = 0\rceil, \mathrm{p}_0, \mathsf{c})$]

[PositiveNegated $\overset{\text{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg((-\mathrm{u}\underline{\mathsf{x}}) <= 0 \Rightarrow \dot\neg(\dot\neg((-\mathrm{u}\underline{\mathsf{x}}) = 0)\mathrm{n})\mathrm{n})\mathrm{n}$]

[PositiveNegated $\overset{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{LessNegated} \rhd \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((-\mathrm{u}\underline{\mathsf{x}}) <= (-\mathrm{u}0) \Rightarrow \dot\neg(\dot\neg((-\mathrm{u}\underline{\mathsf{x}}) = (-\mathrm{u}0))\mathrm{n})\mathrm{n})\mathrm{n}; -0 = 0 \gg (-\mathrm{u}0) = 0; \mathrm{SubLessRight} \rhd (-\mathrm{u}0) = 0 \rhd \dot\neg((-\mathrm{u}\underline{\mathsf{x}}) <= (-\mathrm{u}0) \Rightarrow \dot\neg(\dot\neg((-\mathrm{u}\underline{\mathsf{x}}) = (-\mathrm{u}0))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((-\mathrm{u}\underline{\mathsf{x}}) <= 0 \Rightarrow \dot\neg(\dot\neg((-\mathrm{u}\underline{\mathsf{x}}) = 0)\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})$]

[NonpositiveNegated $\overset{\text{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \underline{\mathsf{x}} <= 0 \vdash 0 <= (-\mathrm{u}\underline{\mathsf{x}})$]

[NonpositiveNegated $\overset{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \underline{\mathsf{x}} <= 0 \vdash \mathrm{LeqNegated} \rhd \underline{\mathsf{x}} <= 0 \gg (-\mathrm{u}0) <= (-\mathrm{u}\underline{\mathsf{x}}); -0 = 0 \gg (-\mathrm{u}0) = 0; \mathrm{subLeqLeft} \rhd (-\mathrm{u}0) = 0 \rhd (-\mathrm{u}0) <= (-\mathrm{u}\underline{\mathsf{x}}) \gg 0 <= (-\mathrm{u}\underline{\mathsf{x}})\rceil, \mathrm{p}_0, \mathsf{c})$]

[NegativeNegated $\overset{\text{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \dot\neg(\underline{\mathsf{x}} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(0 <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(0 = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n}$]

[NegativeNegated $\overset{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \dot\neg(\underline{\mathsf{x}} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{LessNegated} \rhd \dot\neg(\underline{\mathsf{x}} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((-\mathrm{u}0) <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg((-\mathrm{u}0) = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n}; -0 = 0 \gg (-\mathrm{u}0) = 0; \mathrm{SubLessLeft} \rhd (-\mathrm{u}0) = 0 \rhd \dot\neg((-\mathrm{u}0) <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg((-\mathrm{u}0) = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(0 = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})$]

[NonnegativeNegated $\overset{\text{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon 0 <= \underline{\mathsf{x}} \vdash (-\mathrm{u}\underline{\mathsf{x}}) <= 0$]

[NonnegativeNegated $\overset{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon 0 <= \underline{\mathsf{x}} \vdash \mathrm{LeqNegated} \rhd 0 <= \underline{\mathsf{x}} \gg (-\mathrm{u}\underline{\mathsf{x}}) <= (-\mathrm{u}0); -0 = 0 \gg (-\mathrm{u}0) = 0; \mathrm{subLeqRight} \rhd (-\mathrm{u}0) = 0 \rhd (-\mathrm{u}\underline{\mathsf{x}}) <= (-\mathrm{u}0) \gg (-\mathrm{u}\underline{\mathsf{x}}) <= 0\rceil, \mathrm{p}_0, \mathsf{c})$]

$[0 < 2 \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \dot\neg(0 <= (1+1) \Rightarrow \dot\neg(\dot\neg(0 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[0 < 2 \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash 0 < 1 \gg \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessAddition} \rhd \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((0+1) <= (1+1) \Rightarrow \dot\neg(\dot\neg((0+1) = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{plus0Left} \gg (0+1) = 1; \mathrm{SubLessLeft} \rhd (0+1) = 1 \rhd \dot\neg((0+1) <= (1+1) \Rightarrow \dot\neg(\dot\neg((0+1) = (1+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(1 <= (1+1) \Rightarrow \dot\neg(\dot\neg(1 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessTransitivity} \rhd \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot\neg(1 <= (1+1) \Rightarrow \dot\neg(\dot\neg(1 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 <= (1+1) \Rightarrow \dot\neg(\dot\neg(0 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[0 < 1/2 \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \dot\neg(0 <= \mathrm{rec}(1+1) \Rightarrow \dot\neg(\dot\neg(0 = \mathrm{rec}(1+1))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[0 < 1/2 \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash 0 < 2 \gg \dot\neg(0 <= (1+1) \Rightarrow \dot\neg(\dot\neg(0 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot\neg(0 <= (1+1) \Rightarrow \dot\neg(\dot\neg(0 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= (1+1); \mathrm{SecondConjunct} \rhd \dot\neg(0 <= (1+1) \Rightarrow \dot\neg(\dot\neg(0 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 = (1+1))\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot\neg(0 = (1+1))\mathrm{n} \gg \dot\neg((1+1) = 0)\mathrm{n}; 0 < 1 \gg \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{x} * 0 = 0 \gg ((1+1) * 0) = 0; \mathrm{x} * \mathrm{y} = \mathrm{zBackwards} \rhd ((1+1) * 0) = 0 \gg 0 = (0 * (1+1)); \mathrm{SubLessLeft} \rhd 0 = (0 * (1+1)) \rhd \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((0 * (1+1)) <= 1 \Rightarrow \dot\neg(\dot\neg((0 * (1+1)) = 1)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Reciprocal} \rhd \dot\neg((1+1) = 0)\mathrm{n} \gg ((1+1) * \mathrm{rec}(1+1)) = 1; \mathrm{x} * \mathrm{y} = \mathrm{zBackwards} \rhd ((1+1) * \mathrm{rec}(1+1)) = 1 \gg 1 = (\mathrm{rec}(1+1) * (1+1)); \mathrm{SubLessRight} \rhd 1 = (\mathrm{rec}(1+1) * (1+1)) \rhd \dot\neg((0 * (1+1)) <= 1 \Rightarrow \dot\neg(\dot\neg((0 * (1+1)) = 1)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((0 * (1+1)) <= (\mathrm{rec}(1+1) * (1+1)) \Rightarrow \dot\neg(\dot\neg((0 * (1+1)) = (\mathrm{rec}(1+1) * (1+1)))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessDivision} \rhd 0 <= (1+1) \rhd \dot\neg((0 * (1+1)) <= (\mathrm{rec}(1+1) * (1+1)) \Rightarrow \dot\neg(\dot\neg((0 * (1+1)) = (\mathrm{rec}(1+1) * (1+1)))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 <= \mathrm{rec}(1+1) \Rightarrow \dot\neg(\dot\neg(0 = \mathrm{rec}(1+1))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveHalved} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(0 <= (\mathrm{rec}(1+1) * \underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}(1+1) * \underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{PositiveHalved} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash 0 < 1/2 \gg \dot\neg(0 <= \mathrm{rec}(1+1) \Rightarrow \dot\neg(\dot\neg(0 = \mathrm{rec}(1+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessMultiplicationLeft} \rhd \dot\neg(0 <= \mathrm{rec}(1+1) \Rightarrow \dot\neg(\dot\neg(0 = \mathrm{rec}(1+1))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot\neg(0 <= \underline{\mathsf{x}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((\mathrm{rec}(1+1) * 0) <= (\mathrm{rec}(1+1) * \underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg((\mathrm{rec}(1+1) * 0) = (\mathrm{rec}(1+1) * \underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{x} * 0 = 0 \gg (\mathrm{rec}(1+1) * 0) = 0; \mathrm{SubLessLeft} \rhd (\mathrm{rec}(1+1) * 0) = 0 \rhd \dot\neg((\mathrm{rec}(1+1) * 0) <= (\mathrm{rec}(1+1) * \underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg((\mathrm{rec}(1+1) * 0) = (\mathrm{rec}(1+1) * \underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 <= (\mathrm{rec}(1+1) * \underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}(1+1) * \underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromNot} << \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{FromNot} << \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \mathrm{AutoImply} \gg \dot\neg(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{MT} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{NonnegativeNumerical} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon 0 <= \underline{\mathsf{x}} \vdash |\underline{\mathsf{x}}| = \underline{\mathsf{x}}]$

$[\mathrm{NonnegativeNumerical} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon 0 <= \underline{\mathsf{x}} \vdash \mathrm{Numerical} \gg \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n}; \mathrm{AddDoubleNeg} \rhd 0 <= \underline{\mathsf{x}} \gg \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n})\mathrm{n}; \mathrm{ToNegatedAnd}(1) \rhd \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{NegateDisjunct2} \rhd \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = \underline{\mathsf{x}})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = \underline{\mathsf{x}})\mathrm{n})\mathrm{n} \gg |\underline{\mathsf{x}}| = \underline{\mathsf{x}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveNumerical} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash |\underline{\mathsf{x}}| = \underline{\mathsf{x}}]$

$[\mathrm{PositiveNumerical} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{LessLeq} \rhd \dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{\mathsf{x}}; \mathrm{NonnegativeNumerical} \rhd 0 <= \underline{\mathsf{x}} \gg |\underline{\mathsf{x}}| = \underline{\mathsf{x}}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{NegativeNumerical} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \dot{\neg}(\underline{\mathsf{x}} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \vdash |\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}})]$

$[\mathrm{NegativeNumerical} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \dot{\neg}(\underline{\mathsf{x}} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{Numerical} \gg \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n}; \mathrm{FromLess} \rhd \dot{\neg}(\underline{\mathsf{x}} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n}; \mathrm{ToNegatedAnd}(1) \rhd \dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{NegateDisjunct1} \rhd \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(0 <= \underline{\mathsf{x}})\mathrm{n} \Rightarrow \dot{\neg}(|\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n} \gg |\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{lemma\ nonpositiveNumerical} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \underline{\mathsf{x}} <= 0 \vdash |\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}})]$

$[\mathrm{lemma\ nonpositiveNumerical} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \dot{\neg}(\underline{\mathsf{x}} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{NegativeNumerical} \rhd \dot{\neg}(\underline{\mathsf{x}} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \gg |\underline{\mathsf{x}}| = (-\mathrm{u}\underline{\mathsf{x}}); \forall\underline{\mathsf{x}}\colon \underline{\mathsf{x}} = 0 \vdash \mathrm{eqSymmetry} \rhd \underline{\mathsf{x}} = 0 \gg 0 = \underline{\mathsf{x}}; \mathrm{eqLeq} \rhd 0 = \underline{\mathsf{x}} \gg 0 <= \underline{\mathsf{x}}; \mathrm{NonnegativeNumerical} \rhd 0 <= \underline{\mathsf{x}} \gg |\underline{\mathsf{x}}| = \underline{\mathsf{x}}; -0 = 0 \gg (-\mathrm{u}0) =$

$0; \text{eqSymmetry} \rhd (-u0) = 0 \gg 0 = (-u0); \text{EqNegated} \rhd 0 = \underline{x} \gg (-u0) = (-u\underline{x}); \text{eqTransitivity5} \rhd |\underline{x}| = \underline{x} \rhd \underline{x} = 0 \rhd 0 = (-u0) \rhd (-u0) = (-u\underline{x}) \gg |\underline{x}| = (-u\underline{x}); \forall\underline{x}\colon \text{Ded} \rhd \forall\underline{x}\colon \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \vdash |\underline{x}| = (-u\underline{x}) \gg \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \Rightarrow |\underline{x}| = (-u\underline{x}); \text{Ded} \rhd \forall\underline{x}\colon \underline{x} = 0 \vdash |\underline{x}| = (-u\underline{x}) \gg \underline{x} = 0 \Rightarrow |\underline{x}| = (-u\underline{x}); \underline{x} <= 0 \vdash \text{LeqLessEq} \rhd \underline{x} <= 0 \gg \dot\neg(\dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n)n \Rightarrow \underline{x} = 0; \text{FromDisjuncts} \rhd \dot\neg(\dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n)n \Rightarrow \underline{x} = 0 \rhd \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \Rightarrow |\underline{x}| = (-u\underline{x}) \rhd \underline{x} = 0 \Rightarrow |\underline{x}| = (-u\underline{x}) \gg |\underline{x}| = (-u\underline{x})\rceil, p_0, \mathsf{c})]$

$[|0| = 0 \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash |0| = 0]$

$[|0| = 0 \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \text{leqReflexivity} \gg 0 <= 0; \text{NonnegativeNumerical} \rhd 0 <= 0 \gg |0| = 0\rceil, p_0, \mathsf{c})]$

$[0 <= |x| \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall\underline{x}\colon 0 <= |\underline{x}|]$

$[0 <= |x| \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon 0 <= \underline{x} \vdash \text{NonnegativeNumerical} \rhd 0 <= \underline{x} \gg |\underline{x}| = \underline{x}; \text{eqSymmetry} \rhd |\underline{x}| = \underline{x} \gg \underline{x} = |\underline{x}|; \text{subLeqRight} \rhd \underline{x} = |\underline{x}| \rhd 0 <= \underline{x} \gg 0 <= |\underline{x}|; \forall\underline{x}\colon \dot\neg(0 <= \underline{x})n \vdash \text{ToLess} \rhd \dot\neg(0 <= \underline{x})n \gg \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n; \text{NegativeNumerical} \rhd \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \gg |\underline{x}| = (-u\underline{x}); \text{eqSymmetry} \rhd |\underline{x}| = (-u\underline{x}) \gg (-u\underline{x}) = |\underline{x}|; \text{NegativeNegated} \rhd \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \gg \dot\neg(0 <= (-u\underline{x}) \Rightarrow \dot\neg(\dot\neg(0 = (-u\underline{x}))n)n)n; \text{LessLeq} \rhd \dot\neg(0 <= (-u\underline{x}) \Rightarrow \dot\neg(\dot\neg(0 = (-u\underline{x}))n)n)n \gg 0 <= (-u\underline{x}); \text{subLeqRight} \rhd (-u\underline{x}) = |\underline{x}| \rhd 0 <= (-u\underline{x}) \gg 0 <= |\underline{x}|; \forall\underline{x}\colon \text{Ded} \rhd \forall\underline{x}\colon 0 <= \underline{x} \vdash 0 <= |\underline{x}| \gg 0 <= \underline{x} \Rightarrow 0 <= |\underline{x}|; \text{Ded} \rhd \forall\underline{x}\colon \dot\neg(0 <= \underline{x})n \vdash 0 <= |\underline{x}| \gg \dot\neg(0 <= \underline{x})n \Rightarrow 0 <= |\underline{x}|; \text{FromNegations} \rhd 0 <= \underline{x} \Rightarrow 0 <= |\underline{x}| \rhd \dot\neg(0 <= \underline{x})n \Rightarrow 0 <= |\underline{x}| \gg 0 <= |\underline{x}|\rceil, p_0, \mathsf{c})]$

$[\text{SameNumerical} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \underline{x} = \underline{y} \vdash |\underline{x}| = |\underline{y}|]$

$[\text{SameNumerical} \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon 0 <= \underline{x} \vdash \underline{x} = \underline{y} \vdash \text{NonnegativeNumerical} \rhd 0 <= \underline{x} \gg |\underline{x}| = \underline{x}; \text{subLeqRight} \rhd \underline{x} = \underline{y} \rhd 0 <= \underline{x} \gg 0 <= \underline{y}; \text{NonnegativeNumerical} \rhd 0 <= \underline{y} \gg |\underline{y}| = \underline{y}; \text{eqSymmetry} \rhd |\underline{y}| = \underline{y} \gg \underline{y} = |\underline{y}|; \text{eqTransitivity4} \rhd |\underline{x}| = \underline{x} \rhd \underline{x} = \underline{y} \rhd \underline{y} = |\underline{y}| \gg |\underline{x}| = |\underline{y}|; \forall\underline{x}\colon \forall\underline{y}\colon \dot\neg(0 <= \underline{x})n \vdash \underline{x} = \underline{y} \vdash \text{ToLess} \rhd \dot\neg(0 <= \underline{x})n \gg \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n; \text{NegativeNumerical} \rhd \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \gg |\underline{x}| = (-u\underline{x}); \text{SubLessLeft} \rhd \underline{x} = \underline{y} \rhd \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \gg \dot\neg(\underline{y} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{y} = 0)n)n)n; \text{NegativeNumerical} \rhd \dot\neg(\underline{y} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{y} = 0)n)n)n \gg |\underline{y}| = (-u\underline{y}); \text{eqSymmetry} \rhd |\underline{y}| = (-u\underline{y}) \gg (-u\underline{y}) = |\underline{y}|; \text{EqNegated} \rhd \underline{x} = \underline{y} \gg (-u\underline{x}) = (-u\underline{y}); \text{eqTransitivity4} \rhd |\underline{x}| = (-u\underline{x}) \rhd (-u\underline{x}) = (-u\underline{y}) \rhd (-u\underline{y}) = |\underline{y}| \gg |\underline{x}| = |\underline{y}|; \forall\underline{x}\colon \forall\underline{y}\colon \underline{x} = \underline{y} \vdash \text{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon 0 <= \underline{x} \vdash \underline{x} = \underline{y} \vdash |\underline{x}| = |\underline{y}| \gg 0 <= \underline{x} \Rightarrow \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}|; \text{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon \dot\neg(0 <= \underline{x})n \vdash \underline{x} = \underline{y} \vdash |\underline{x}| = |\underline{y}| \gg \dot\neg(0 <= \underline{x})n \Rightarrow \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}|; \text{FromNegations} \rhd 0 <= \underline{x} \Rightarrow \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}| \rhd \dot\neg(0 <= \underline{x})n \Rightarrow \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}| \gg \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}|; \text{MP} \rhd \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}| \rhd \underline{x} = \underline{y} \gg |\underline{x}| = |\underline{y}|\rceil, p_0, \mathsf{c})]$

$[\text{SameSeries(Gen)} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall\underline{m}\colon \forall\underline{n}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \forall\underline{(sz)}\colon \underline{m} \in \mathrm{N} \vdash \underline{n} \in \mathrm{N} \vdash \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot\neg(\forall_{\text{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sz)})n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow \dot\neg(\forall_{\text{obj}}\overline{(f1)}\colon \forall_{\text{obj}}\overline{(f2)}\colon \forall_{\text{obj}}\overline{(f3)}\colon \forall_{\text{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \vdash \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}: \overline{(r1)} \in \underline{(fy)} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sz)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}: \forall_{\mathrm{obj}}\overline{(f2)}: \forall_{\mathrm{obj}}\overline{(f3)}: \forall_{\mathrm{obj}}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})n)n)n)n \vdash \underline{\mathsf{m}} = \underline{\mathsf{n}} \vdash \underline{(fx)} = \underline{(fy)} \vdash \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{n}}]]$

$[\text{SameSeries(Gen)} \overset{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall\underline{\mathsf{m}}: \forall\underline{\mathsf{n}}: \forall\underline{(fx)}: \forall\underline{(fy)}: \forall\underline{(sz)}: \underline{\mathsf{m}} \in N \vdash$
$\underline{\mathsf{n}} \in N \vdash \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}: \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sz)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}: \forall_{\mathrm{obj}}\overline{(f2)}: \forall_{\mathrm{obj}}\overline{(f3)}: \forall_{\mathrm{obj}}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \vdash \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}: \overline{(r1)} \in \underline{(fy)} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sz)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}: \forall_{\mathrm{obj}}\overline{(f2)}: \forall_{\mathrm{obj}}\overline{(f3)}: \forall_{\mathrm{obj}}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})n)n)n)n \vdash \underline{\mathsf{m}} = \underline{\mathsf{n}} \vdash \underline{(fx)} = \underline{(fy)} \vdash \text{MemberOfSeries} \rhd \underline{\mathsf{m}} \in$
$N \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}: \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sz)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}: \forall_{\mathrm{obj}}\overline{(f2)}: \forall_{\mathrm{obj}}\overline{(f3)}: \forall_{\mathrm{obj}}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \in \underline{(fx)}; \text{SENC1} \rhd \underline{(fx)} =$
$\underline{(fy)} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \in \underline{(fx)} \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \in$
$\underline{(fy)}; \text{MemberOfSeries} \rhd \underline{\mathsf{n}} \in N \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}: \overline{(r1)} \in \underline{(fy)} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sz)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}: \forall_{\mathrm{obj}}\overline{(f2)}: \forall_{\mathrm{obj}}\overline{(f3)}: \forall_{\mathrm{obj}}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})n)n)n)n \gg \{\{\underline{\mathsf{n}}, \underline{\mathsf{n}}\}, \{\underline{\mathsf{n}}, \underline{(fy)}[\underline{\mathsf{n}}]\}\} \in$
$\underline{(fy)}; \text{UniqueMember} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}: \overline{(r1)} \in \underline{(fy)} \Rightarrow$

$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sz)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fy)})n)n)n)n \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \in \underline{(fy)} \rhd \{\{\underline{\mathsf{n}}, \underline{\mathsf{n}}\}, \{\underline{\mathsf{n}}, \underline{(fy)}[\underline{\mathsf{n}}]\}\} \in \underline{(fy)} \rhd \underline{\mathsf{m}} = \underline{\mathsf{n}} \gg \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{n}}]\rceil, p_0, \mathsf{c})]$

$[\text{EqualsSameF} \overset{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \underline{(fx)} = \underline{(fy)} \vdash \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n]$

$[\text{EqualsSameF} \overset{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \underline{(fx)} = \underline{(fy)} \vdash \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \vdash 0 <= \overline{\mathsf{m}} \vdash \text{NatType} \gg \overline{\mathsf{m}} \in N; \text{SeriesType} \gg \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fx)})n)n)n)n; \text{SeriesType} \gg \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fy)})n)n)n)n; \text{eqReflexivity} \gg \overline{\mathsf{m}} = \overline{\mathsf{m}}; \text{SameSeries(Gen)} \rhd \overline{\mathsf{m}} \in N \rhd \overline{\mathsf{m}} \in N \rhd \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fx)})n)n)n)n \rhd \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fy)})n)n)n)n \rhd \overline{\mathsf{m}} = \overline{\mathsf{m}} \rhd \underline{(fx)} = \underline{(fy)} \gg \underline{(fx)}[\overline{\mathsf{m}}] = \underline{(fy)}[\overline{\mathsf{m}}]; \text{PositiveToLeft(Eq)(1term)} \rhd \underline{(fx)}[\overline{\mathsf{m}}] = \underline{(fy)}[\overline{\mathsf{m}}] \gg (\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}])) = 0; \text{SameNumerical} \rhd (\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}])) = 0 \gg |(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = |0|; |0| = 0 \gg |0| =$

0; eqTransitivity $\rhd |(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = |0| \rhd |0| = 0 \gg |(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = 0$; eqSymmetry $\rhd |(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = 0 \gg 0 = |(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|$; SubLessLeft $\rhd 0 = |(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| \rhd \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}$; $\forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon$ Ded $\rhd \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \underline{(\mathrm{fx})} = \underline{(\mathrm{fy})} \vdash \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \vdash 0 <= \overline{\mathsf{m}} \vdash \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{fx})} = \underline{(\mathrm{fy})} \Rightarrow \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow 0 <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}$; $\underline{(\mathrm{fx})} = \underline{(\mathrm{fy})} \vdash$ MP $\rhd \underline{(\mathrm{fx})} = \underline{(\mathrm{fy})} \Rightarrow \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow 0 <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \underline{(\mathrm{fx})} = \underline{(\mathrm{fy})} \gg \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow 0 <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}$; Gen $\rhd \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow 0 <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow 0 <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}$; IntroExist @ 0 $\rhd \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow 0 <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; Gen $\rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; Repetition $\rhd \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

[SignNumerical(+) $\overset{\mathrm{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{\mathsf{x}}\colon \dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash |\underline{\mathsf{x}}| = |(-\mathrm{u}\underline{\mathsf{x}})|$]

[SignNumerical(+) $\overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{\mathsf{x}}\colon \dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$ PositiveNumerical $\rhd \dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \gg |\underline{\mathsf{x}}| = \underline{\mathsf{x}}$; PositiveNegated $\rhd \dot{\neg}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}\underline{\mathsf{x}}) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{\mathsf{x}}) = 0)\mathrm{n})\mathrm{n})\mathrm{n}$; NegativeNumerical $\rhd \dot{\neg}((-\mathrm{u}\underline{\mathsf{x}}) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{\mathsf{x}}) = 0)\mathrm{n})\mathrm{n})\mathrm{n} \gg |(-\mathrm{u}\underline{\mathsf{x}})| = (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{x}}))$; DoubleMinus $\gg (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{x}})) = \underline{\mathsf{x}}$; eqTransitivity $\rhd |(-\mathrm{u}\underline{\mathsf{x}})| = (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{x}})) \rhd (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{x}})) = \underline{\mathsf{x}} \gg |(-\mathrm{u}\underline{\mathsf{x}})| =$

$\underline{x}$; eqSymmetry $\rhd |(-u\underline{x})| = \underline{x} \gg \underline{x} = |(-u\underline{x})|$; eqTransitivity $\rhd |\underline{x}| = \underline{x} \rhd \underline{x} = |(-u\underline{x})| \gg |\underline{x}| = |(-u\underline{x})|\rceil, p_0, \mathsf{c})]$

[SignNumerical $\stackrel{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{x}\colon |\underline{x}| = |(-u\underline{x})|]$

[SignNumerical $\stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \vdash$ NegativeNegated $\rhd \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \gg \dot\neg(0 <= (-u\underline{x}) \Rightarrow \dot\neg(\dot\neg(0 = (-u\underline{x}))n)n)n$; SignNumerical(+) $\rhd \dot\neg(0 <= (-u\underline{x}) \Rightarrow \dot\neg(\dot\neg(0 = (-u\underline{x}))n)n)n \gg |(-u\underline{x})| = |(-u(-u\underline{x}))|$; DoubleMinus $\gg (-u(-u\underline{x})) = \underline{x}$; SameNumerical $\rhd (-u(-u\underline{x})) = \underline{x} \gg |(-u(-u\underline{x}))| = |\underline{x}|$; eqTransitivity $\rhd |(-u\underline{x})| = |(-u(-u\underline{x}))| \rhd |(-u(-u\underline{x}))| = |\underline{x}| \gg |(-u\underline{x})| = |\underline{x}|$; eqSymmetry $\rhd |(-u\underline{x})| = |\underline{x}| \gg |\underline{x}| = |(-u\underline{x})|$; $\forall\underline{x}\colon \underline{x} = 0 \vdash$ EqNegated $\rhd \underline{x} = 0 \gg (-u\underline{x}) = (-u0)$; $-0 = 0 \gg (-u0) = 0$; eqSymmetry $\rhd \underline{x} = 0 \gg 0 = \underline{x}$; eqTransitivity4 $\rhd (-u\underline{x}) = (-u0) \rhd (-u0) = 0 \rhd 0 = \underline{x} \gg (-u\underline{x}) = \underline{x}$; eqSymmetry $\rhd (-u\underline{x}) = \underline{x} \gg \underline{x} = (-u\underline{x})$; SameNumerical $\rhd \underline{x} = (-u\underline{x}) \gg |\underline{x}| = |(-u\underline{x})|$; $\forall\underline{x}\colon \dot\neg(0 <= \underline{x} \Rightarrow \dot\neg(\dot\neg(0 = \underline{x})n)n)n \vdash$ SignNumerical(+) $\rhd \dot\neg(0 <= \underline{x} \Rightarrow \dot\neg(\dot\neg(0 = \underline{x})n)n)n \gg |\underline{x}| = |(-u\underline{x})|$; $\forall\underline{x}\colon$ Ded $\rhd \forall\underline{x}\colon \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \vdash |\underline{x}| = |(-u\underline{x})| \gg \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \Rightarrow |\underline{x}| = |(-u\underline{x})|$; Ded $\rhd \forall\underline{x}\colon \underline{x} = 0 \vdash |\underline{x}| = |(-u\underline{x})| \gg \underline{x} = 0 \Rightarrow |\underline{x}| = |(-u\underline{x})|$; Ded $\rhd \forall\underline{x}\colon \dot\neg(0 <= \underline{x} \Rightarrow \dot\neg(\dot\neg(0 = \underline{x})n)n)n \vdash |\underline{x}| = |(-u\underline{x})| \gg \dot\neg(0 <= \underline{x} \Rightarrow \dot\neg(\dot\neg(0 = \underline{x})n)n)n \Rightarrow |\underline{x}| = |(-u\underline{x})|$; LessTotality $\gg \dot\neg(\dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n)n \Rightarrow \dot\neg(\underline{x} = 0)n \Rightarrow \dot\neg(0 <= \underline{x} \Rightarrow \dot\neg(\dot\neg(0 = \underline{x})n)n)n$; From3Disjuncts $\rhd \dot\neg(\dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n)n \Rightarrow \dot\neg(\underline{x} = 0)n \Rightarrow \dot\neg(0 <= \underline{x} \Rightarrow \dot\neg(\dot\neg(0 = \underline{x})n)n)n \rhd \dot\neg(\underline{x} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{x} = 0)n)n)n \Rightarrow |\underline{x}| = |(-u\underline{x})| \rhd \underline{x} = 0 \Rightarrow |\underline{x}| = |(-u\underline{x})| \rhd \dot\neg(0 <= \underline{x} \Rightarrow \dot\neg(\dot\neg(0 = \underline{x})n)n)n \Rightarrow |\underline{x}| = |(-u\underline{x})| \gg |\underline{x}| = |(-u\underline{x})|\rceil, p_0, \mathsf{c})]$

[Times(−1) $\stackrel{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{x}\colon (\underline{x} * (-u1)) = (-u\underline{x})]$

[Times(−1) $\stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon$ Negative $\gg (1 + (-u1)) = 0$; plusCommutativity $\gg ((-u1) + 1) = (1 + (-u1))$; eqTransitivity $\rhd ((-u1) + 1) = (1 + (-u1)) \rhd (1 + (-u1)) = 0 \gg ((-u1) + 1) = 0$; EqMultiplicationLeft $\rhd ((-u1) + 1) = 0 \gg (\underline{x} * ((-u1) + 1)) = (\underline{x} * 0)$; $x * 0 = 0 \gg (\underline{x} * 0) = 0$; eqTransitivity $\rhd (\underline{x} * ((-u1) + 1)) = (\underline{x} * 0) \rhd (\underline{x} * 0) = 0 \gg (\underline{x} * ((-u1) + 1)) = 0$; Distribution $\gg (\underline{x} * ((-u1) + 1)) = ((\underline{x} * (-u1)) + (\underline{x} * 1))$; eqSymmetry $\rhd (\underline{x} * ((-u1) + 1)) = ((\underline{x} * (-u1)) + (\underline{x} * 1)) \gg ((\underline{x} * (-u1)) + (\underline{x} * 1)) = (\underline{x} * ((-u1) + 1))$; eqTransitivity $\rhd ((\underline{x} * (-u1)) + (\underline{x} * 1)) = (\underline{x} * ((-u1) + 1)) \rhd (\underline{x} * ((-u1) + 1)) = 0 \gg ((\underline{x} * (-u1)) + (\underline{x} * 1)) = 0$; PositiveToRight(Eq) $\rhd ((\underline{x} * (-u1)) + (\underline{x} * 1)) = 0 \gg (\underline{x} * (-u1)) = (0 + (-u(\underline{x} * 1)))$; plus0Left $\gg (0 + (-u(\underline{x} * 1))) = (-u(\underline{x} * 1))$; eqTransitivity $\rhd (\underline{x} * (-u1)) = (0 + (-u(\underline{x} * 1))) \rhd (0 + (-u(\underline{x} * 1))) = (-u(\underline{x} * 1)) \gg (\underline{x} * (-u1)) = (-u(\underline{x} * 1))$; times1 $\gg (\underline{x} * 1) = \underline{x}$; EqNegated $\rhd (\underline{x} * 1) = \underline{x} \gg (-u(\underline{x} * 1)) = (-u\underline{x})$; eqTransitivity $\rhd (\underline{x} * (-u1)) = (-u(\underline{x} * 1)) \rhd (-u(\underline{x} * 1)) = (-u\underline{x}) \gg (\underline{x} * (-u1)) = (-u\underline{x})\rceil, p_0, \mathsf{c})]$

[Times(−1)Left $\stackrel{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{x}\colon ((-u1) * \underline{x}) = (-u\underline{x})]$

[Times(−1)Left $\stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon$ Times(−1) $\gg (\underline{x} * (-u1)) = (-u\underline{x})$; timesCommutativity $\gg ((-u1) * \underline{x}) = (\underline{x} * (-u1))$; eqTransitivity $\rhd ((-u1) * \underline{x}) = (\underline{x} * (-u1)) \rhd (\underline{x} * (-u1)) = (-u\underline{x}) \gg ((-u1) * \underline{x}) = (-u\underline{x})\rceil, p_0, \mathsf{c})]$

$[-\mathrm{x}-\mathrm{y}=-(\mathrm{x}+\mathrm{y}) \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathrm{x}}\colon \forall \underline{\mathrm{y}}\colon ((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))=(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}}))]$

$[-\mathrm{x}-\mathrm{y}=-(\mathrm{x}+\mathrm{y}) \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathrm{x}}\colon \forall \underline{\mathrm{y}}\colon \mathrm{Times}(-1)\mathrm{Left} \gg ((-\mathrm{u}1)*\underline{\mathrm{x}})=(-\mathrm{u}\underline{\mathrm{x}}); \mathrm{Times}(-1)\mathrm{Left} \gg ((-\mathrm{u}1)*\underline{\mathrm{y}})=(-\mathrm{u}\underline{\mathrm{y}}); \mathrm{AddEquations} \triangleright ((-\mathrm{u}1)*\underline{\mathrm{x}})=(-\mathrm{u}\underline{\mathrm{x}}) \triangleright ((-\mathrm{u}1)*\underline{\mathrm{y}})=(-\mathrm{u}\underline{\mathrm{y}}) \gg (((-\mathrm{u}1)*\underline{\mathrm{x}})+((-\mathrm{u}1)*\underline{\mathrm{y}}))= ((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}})); \mathrm{eqSymmetry} \triangleright (((-\mathrm{u}1)*\underline{\mathrm{x}})+((-\mathrm{u}1)*\underline{\mathrm{y}}))=((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}})) \gg ((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))=(((-\mathrm{u}1)*\underline{\mathrm{x}})+((-\mathrm{u}1)*\underline{\mathrm{y}})); \mathrm{DistributionOut} \gg (((-\mathrm{u}1)*\underline{\mathrm{x}})+((-\mathrm{u}1)*\underline{\mathrm{y}}))=((-\mathrm{u}1)*(\underline{\mathrm{x}}+\underline{\mathrm{y}})); \mathrm{Times}(-1)\mathrm{Left} \gg ((-\mathrm{u}1)*(\underline{\mathrm{x}}+\underline{\mathrm{y}}))=(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}})); \mathrm{eqTransitivity4} \triangleright ((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))= (((-\mathrm{u}1)*\underline{\mathrm{x}})+((-\mathrm{u}1)*\underline{\mathrm{y}})) \triangleright (((-\mathrm{u}1)*\underline{\mathrm{x}})+((-\mathrm{u}1)*\underline{\mathrm{y}}))=((-\mathrm{u}1)*(\underline{\mathrm{x}}+\underline{\mathrm{y}})) \triangleright ((-\mathrm{u}1)*(\underline{\mathrm{x}}+\underline{\mathrm{y}}))=(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}})) \gg ((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))=(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}}))\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{MinusNegated} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathrm{x}}\colon \forall \underline{\mathrm{y}}\colon (-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}})))=(\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}}))]$

$[\mathrm{MinusNegated} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathrm{x}}\colon \forall \underline{\mathrm{y}}\colon \mathrm{DoubleMinus} \gg (-\mathrm{u}(-\mathrm{u}\underline{\mathrm{y}}))= \underline{\mathrm{y}}; \mathrm{eqAddition} \triangleright (-\mathrm{u}(-\mathrm{u}\underline{\mathrm{y}}))=\underline{\mathrm{y}} \gg ((-\mathrm{u}(-\mathrm{u}\underline{\mathrm{y}}))+(-\mathrm{u}\underline{\mathrm{x}}))= (\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}})); \mathrm{eqSymmetry} \triangleright ((-\mathrm{u}(-\mathrm{u}\underline{\mathrm{y}}))+(-\mathrm{u}\underline{\mathrm{x}}))=(\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}})) \gg (\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}}))=((-\mathrm{u}(-\mathrm{u}\underline{\mathrm{y}}))+(-\mathrm{u}\underline{\mathrm{x}})); -\mathrm{x}-\mathrm{y}=-(\mathrm{x}+\mathrm{y}) \gg ((-\mathrm{u}(-\mathrm{u}\underline{\mathrm{y}}))+(-\mathrm{u}\underline{\mathrm{x}}))=(-\mathrm{u}((-\mathrm{u}\underline{\mathrm{y}})+\underline{\mathrm{x}})); \mathrm{plusCommutativity} \gg ((-\mathrm{u}\underline{\mathrm{y}})+\underline{\mathrm{x}})= (\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}})); \mathrm{EqNegated} \triangleright ((-\mathrm{u}\underline{\mathrm{y}})+\underline{\mathrm{x}})=(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}})) \gg (-\mathrm{u}((-\mathrm{u}\underline{\mathrm{y}})+\underline{\mathrm{x}}))= (-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}}))); \mathrm{eqTransitivity4} \triangleright (\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}}))=((-\mathrm{u}(-\mathrm{u}\underline{\mathrm{y}}))+(-\mathrm{u}\underline{\mathrm{x}})) \triangleright ((-\mathrm{u}(-\mathrm{u}\underline{\mathrm{y}}))+(-\mathrm{u}\underline{\mathrm{x}}))=(-\mathrm{u}((-\mathrm{u}\underline{\mathrm{y}})+\underline{\mathrm{x}})) \triangleright (-\mathrm{u}((-\mathrm{u}\underline{\mathrm{y}})+\underline{\mathrm{x}}))= (-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}}))) \gg (\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}}))=(-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}}))); \mathrm{eqSymmetry} \triangleright (\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}}))= (-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}}))) \gg (-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}})))=(\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}}))\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{NumericalDifference} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathrm{x}}\colon \forall \underline{\mathrm{y}}\colon |(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}}))|=|(\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}}))|]$

$[\mathrm{NumericalDifference} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathrm{x}}\colon \forall \underline{\mathrm{y}}\colon \mathrm{SignNumerical} \gg |(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}}))|=|(-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}})))|; \mathrm{MinusNegated} \gg (-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}})))= (\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}})); \mathrm{SameNumerical} \triangleright (-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}})))=(\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}})) \gg |(-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}})))|=|(\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}}))|; \mathrm{eqTransitivity} \triangleright |(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}}))|= |(-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}})))| \triangleright |(-\mathrm{u}(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}})))|=|(\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}}))| \gg |(\underline{\mathrm{x}}+(-\mathrm{u}\underline{\mathrm{y}}))|= |(\underline{\mathrm{y}}+(-\mathrm{u}\underline{\mathrm{x}}))|\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SplitNumericalSumHelper} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathrm{x}}\colon \forall \underline{\mathrm{y}}\colon |((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))| <= (|(-\mathrm{u}\underline{\mathrm{x}})|+|(-\mathrm{u}\underline{\mathrm{y}})|) \vdash |(\underline{\mathrm{x}}+\underline{\mathrm{y}})| <= (|\underline{\mathrm{x}}|+|\underline{\mathrm{y}}|)]$

$[\mathrm{SplitNumericalSumHelper} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathrm{x}}\colon \forall \underline{\mathrm{y}}\colon |((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))| <= (|(-\mathrm{u}\underline{\mathrm{x}})|+|(-\mathrm{u}\underline{\mathrm{y}})|) \vdash \mathrm{SignNumerical} \gg |\underline{\mathrm{x}}|= |(-\mathrm{u}\underline{\mathrm{x}})|; \mathrm{SignNumerical} \gg |\underline{\mathrm{y}}|=|(-\mathrm{u}\underline{\mathrm{y}})|; \mathrm{AddEquations} \triangleright |\underline{\mathrm{x}}|=|(-\mathrm{u}\underline{\mathrm{x}})| \triangleright |\underline{\mathrm{y}}|= |(-\mathrm{u}\underline{\mathrm{y}})| \gg (|\underline{\mathrm{x}}|+|\underline{\mathrm{y}}|)=(|(-\mathrm{u}\underline{\mathrm{x}})|+|(-\mathrm{u}\underline{\mathrm{y}})|); \mathrm{eqSymmetry} \triangleright (|\underline{\mathrm{x}}|+|\underline{\mathrm{y}}|)= (|(-\mathrm{u}\underline{\mathrm{x}})|+|(-\mathrm{u}\underline{\mathrm{y}})|) \gg (|(-\mathrm{u}\underline{\mathrm{x}})|+|(-\mathrm{u}\underline{\mathrm{y}})|)=(|\underline{\mathrm{x}}|+|\underline{\mathrm{y}}|); -\mathrm{x}-\mathrm{y}=-(\mathrm{x}+\mathrm{y}) \gg ((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))=(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}})); \mathrm{SameNumerical} \triangleright ((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))= (-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}})) \gg |((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))|=|(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}}))|; \mathrm{SignNumerical} \gg |(\underline{\mathrm{x}}+\underline{\mathrm{y}})|= |(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}}))|; \mathrm{eqSymmetry} \triangleright |(\underline{\mathrm{x}}+\underline{\mathrm{y}})|=|(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}}))| \gg |(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}}))|= |(\underline{\mathrm{x}}+\underline{\mathrm{y}})|; \mathrm{eqTransitivity} \triangleright |((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))|=|(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}}))| \triangleright |(-\mathrm{u}(\underline{\mathrm{x}}+\underline{\mathrm{y}}))|= |(\underline{\mathrm{x}}+\underline{\mathrm{y}})| \gg |((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))|=|(\underline{\mathrm{x}}+\underline{\mathrm{y}})|; \mathrm{subLeqRight} \triangleright (|(-\mathrm{u}\underline{\mathrm{x}})|+|(-\mathrm{u}\underline{\mathrm{y}})|)= (|\underline{\mathrm{x}}|+|\underline{\mathrm{y}}|) \triangleright |((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))| <= (|(-\mathrm{u}\underline{\mathrm{x}})|+|(-\mathrm{u}\underline{\mathrm{y}})|) \gg |((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))| <= (|\underline{\mathrm{x}}|+|\underline{\mathrm{y}}|); \mathrm{subLeqLeft} \triangleright |((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))|=|(\underline{\mathrm{x}}+\underline{\mathrm{y}})| \triangleright |((-\mathrm{u}\underline{\mathrm{x}})+(-\mathrm{u}\underline{\mathrm{y}}))| <= (|\underline{\mathrm{x}}|+|\underline{\mathrm{y}}|) \gg |(\underline{\mathrm{x}}+\underline{\mathrm{y}})| <= (|\underline{\mathrm{x}}|+|\underline{\mathrm{y}}|)\rceil, \mathrm{p}_0, \mathsf{c})]$

[splitNumericalSum(++) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon 0 <= \underline{\mathsf{x}} \vdash 0 <= \underline{\mathsf{y}} \vdash |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= (|\underline{\mathsf{x}}| + |\underline{\mathsf{y}}|)$]

[splitNumericalSum(++) $\overset{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon 0 <= \underline{\mathsf{x}} \vdash 0 <= \underline{\mathsf{y}} \vdash$ AddEquations(Leq) $\rhd 0 <= \underline{\mathsf{x}} \rhd 0 <= \underline{\mathsf{y}} \gg (0+0) <= (\underline{\mathsf{x}} + \underline{\mathsf{y}});$ plus0 $\gg (0+0) = 0;$ subLeqLeft $\rhd (0+0) = 0 \rhd (0+0) <= (\underline{\mathsf{x}} + \underline{\mathsf{y}}) \gg 0 <= (\underline{\mathsf{x}} + \underline{\mathsf{y}});$ NonnegativeNumerical $\rhd 0 <= (\underline{\mathsf{x}} + \underline{\mathsf{y}}) \gg |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| = (\underline{\mathsf{x}} + \underline{\mathsf{y}});$ NonnegativeNumerical $\rhd 0 <= \underline{\mathsf{x}} \gg |\underline{\mathsf{x}}| = \underline{\mathsf{x}};$ NonnegativeNumerical $\rhd 0 <= \underline{\mathsf{y}} \gg |\underline{\mathsf{y}}| = \underline{\mathsf{y}};$ AddEquations $\rhd |\underline{\mathsf{x}}| = \underline{\mathsf{x}} \rhd |\underline{\mathsf{y}}| = \underline{\mathsf{y}} \gg (|\underline{\mathsf{x}}| + |\underline{\mathsf{y}}|) = (\underline{\mathsf{x}} + \underline{\mathsf{y}});$ eqSymmetry $\rhd (|\underline{\mathsf{x}}| + |\underline{\mathsf{y}}|) = (\underline{\mathsf{x}} + \underline{\mathsf{y}}) \gg (\underline{\mathsf{x}} + \underline{\mathsf{y}}) = (|\underline{\mathsf{x}}| + |\underline{\mathsf{y}}|);$ eqTransitivity $\rhd |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| = (\underline{\mathsf{x}} + \underline{\mathsf{y}}) \rhd (\underline{\mathsf{x}} + \underline{\mathsf{y}}) = (|\underline{\mathsf{x}}| + |\underline{\mathsf{y}}|) \gg |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| = (|\underline{\mathsf{x}}| + |\underline{\mathsf{y}}|);$ eqLeq $\rhd |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| = (|\underline{\mathsf{x}}| + |\underline{\mathsf{y}}|) \gg |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= (|\underline{\mathsf{x}}| + |\underline{\mathsf{y}}|)\rceil, \mathrm{p}_0, \mathsf{c})$]

[splitNumericalSum($--$) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \underline{\mathsf{x}} <= 0 \vdash \underline{\mathsf{y}} <= 0 \vdash |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= (|\underline{\mathsf{x}}| + |\underline{\mathsf{y}}|)$]

[splitNumericalSum($--$) $\overset{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \underline{\mathsf{x}} <= 0 \vdash \underline{\mathsf{y}} <= 0 \vdash$ NonpositiveNegated $\rhd \underline{\mathsf{x}} <= 0 \gg 0 <= (-\mathrm{u}\underline{\mathsf{x}});$ NonpositiveNegated $\rhd \underline{\mathsf{y}} <= 0 \gg 0 <= (-\mathrm{u}\underline{\mathsf{y}});$ splitNumericalSum(++) $\rhd 0 <= (-\mathrm{u}\underline{\mathsf{x}}) \rhd 0 <= (-\mathrm{u}\underline{\mathsf{y}}) \gg |((-\mathrm{u}\underline{\mathsf{x}}) + (-\mathrm{u}\underline{\mathsf{y}}))| <= (|(-\mathrm{u}\underline{\mathsf{x}})| + |(-\mathrm{u}\underline{\mathsf{y}})|);$ SplitNumericalSumHelper $\rhd |((-\mathrm{u}\underline{\mathsf{x}}) + (-\mathrm{u}\underline{\mathsf{y}}))| <= (|(-\mathrm{u}\underline{\mathsf{x}})| + |(-\mathrm{u}\underline{\mathsf{y}})|) \gg |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= (|\underline{\mathsf{x}}| + |\underline{\mathsf{y}}|)\rceil, \mathrm{p}_0, \mathsf{c})$]

[splitNumericalSum($+-$ small) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon 0 <= \underline{\mathsf{x}} \vdash \underline{\mathsf{y}} <= 0 \vdash |\underline{\mathsf{y}}| <= |\underline{\mathsf{x}}| \vdash |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= |\underline{\mathsf{x}}|$]

[splitNumericalSum($+-$ small) $\overset{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon 0 <= \underline{\mathsf{x}} \vdash \underline{\mathsf{y}} <= 0 \vdash |\underline{\mathsf{y}}| <= |\underline{\mathsf{x}}| \vdash$ LeqAdditionLeft $\rhd \underline{\mathsf{y}} <= 0 \gg (\underline{\mathsf{x}} + \underline{\mathsf{y}}) <= (\underline{\mathsf{x}} + 0);$ plus0 $\gg (\underline{\mathsf{x}} + 0) = \underline{\mathsf{x}};$ subLeqRight $\rhd (\underline{\mathsf{x}} + 0) = \underline{\mathsf{x}} \rhd (\underline{\mathsf{x}} + \underline{\mathsf{y}}) <= (\underline{\mathsf{x}} + 0) \gg (\underline{\mathsf{x}} + \underline{\mathsf{y}}) <= \underline{\mathsf{x}};$ PositiveToRight(Leq)(1term) $\rhd |\underline{\mathsf{y}}| <= |\underline{\mathsf{x}}| \gg 0 <= (|\underline{\mathsf{x}}| + (-\mathrm{u}|\underline{\mathsf{y}}|));$ lemma nonpositiveNumerical $\rhd \underline{\mathsf{y}} <= 0 \gg |\underline{\mathsf{y}}| = (-\mathrm{u}\underline{\mathsf{y}});$ EqNegated $\rhd |\underline{\mathsf{y}}| = (-\mathrm{u}\underline{\mathsf{y}}) \gg (-\mathrm{u}|\underline{\mathsf{y}}|) = (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{y}}));$ DoubleMinus $\gg (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{y}};$ eqTransitivity $\rhd (-\mathrm{u}|\underline{\mathsf{y}}|) = (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{y}})) \rhd (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{y}} \gg (-\mathrm{u}|\underline{\mathsf{y}}|) = \underline{\mathsf{y}};$ NonnegativeNumerical $\rhd 0 <= \underline{\mathsf{x}} \gg |\underline{\mathsf{x}}| = \underline{\mathsf{x}};$ AddEquations $\rhd |\underline{\mathsf{x}}| = \underline{\mathsf{x}} \rhd (-\mathrm{u}|\underline{\mathsf{y}}|) = \underline{\mathsf{y}} \gg (|\underline{\mathsf{x}}| + (-\mathrm{u}|\underline{\mathsf{y}}|)) = (\underline{\mathsf{x}} + \underline{\mathsf{y}});$ subLeqRight $\rhd (|\underline{\mathsf{x}}| + (-\mathrm{u}|\underline{\mathsf{y}}|)) = (\underline{\mathsf{x}} + \underline{\mathsf{y}}) \rhd 0 <= (|\underline{\mathsf{x}}| + (-\mathrm{u}|\underline{\mathsf{y}}|)) \gg 0 <= (\underline{\mathsf{x}} + \underline{\mathsf{y}});$ NonnegativeNumerical $\rhd 0 <= (\underline{\mathsf{x}} + \underline{\mathsf{y}}) \gg |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| = (\underline{\mathsf{x}} + \underline{\mathsf{y}});$ eqSymmetry $\rhd |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| = (\underline{\mathsf{x}} + \underline{\mathsf{y}}) \gg (\underline{\mathsf{x}} + \underline{\mathsf{y}}) = |(\underline{\mathsf{x}} + \underline{\mathsf{y}})|;$ eqSymmetry $\rhd |\underline{\mathsf{x}}| = \underline{\mathsf{x}} \gg \underline{\mathsf{x}} = |\underline{\mathsf{x}}|;$ subLeqLeft $\rhd (\underline{\mathsf{x}} + \underline{\mathsf{y}}) = |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| \rhd (\underline{\mathsf{x}} + \underline{\mathsf{y}}) <= \underline{\mathsf{x}} \gg |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= \underline{\mathsf{x}};$ subLeqRight $\rhd \underline{\mathsf{x}} = |\underline{\mathsf{x}}| \rhd |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= \underline{\mathsf{x}} \gg |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= |\underline{\mathsf{x}}|\rceil, \mathrm{p}_0, \mathsf{c})$]

[splitNumericalSum($+-$ big) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon 0 <= \underline{\mathsf{x}} \vdash \underline{\mathsf{y}} <= 0 \vdash \dot\neg\,(|\underline{\mathsf{x}}| <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg\,(\dot\neg\,(|\underline{\mathsf{x}}| = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= |\underline{\mathsf{y}}|$]

[splitNumericalSum($+-$ big) $\overset{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon 0 <= \underline{\mathsf{x}} \vdash \underline{\mathsf{y}} <= 0 \vdash \dot\neg\,(|\underline{\mathsf{x}}| <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg\,(\dot\neg\,(|\underline{\mathsf{x}}| = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash$ NonnegativeNegated $\rhd 0 <= \underline{\mathsf{x}} \gg (-\mathrm{u}\underline{\mathsf{x}}) <= 0;$ NonpositiveNegated $\rhd \underline{\mathsf{y}} <= 0 \gg 0 <= (-\mathrm{u}\underline{\mathsf{y}});$ SignNumerical $\gg |\underline{\mathsf{x}}| = |(-\mathrm{u}\underline{\mathsf{x}})|;$ SubLessLeft $\rhd |\underline{\mathsf{x}}| = |(-\mathrm{u}\underline{\mathsf{x}})| \rhd \dot\neg\,(|\underline{\mathsf{x}}| <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg\,(\dot\neg\,(|\underline{\mathsf{x}}| = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg\,(|(-\mathrm{u}\underline{\mathsf{x}})| <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg\,(\dot\neg\,(|(-\mathrm{u}\underline{\mathsf{x}})| = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n};$ SignNumerical $\gg |\underline{\mathsf{y}}| = |(-\mathrm{u}\underline{\mathsf{y}})|;$ SubLessRight $\rhd |\underline{\mathsf{y}}| = |(-\mathrm{u}\underline{\mathsf{y}})| \rhd \dot\neg\,(|(-\mathrm{u}\underline{\mathsf{x}})| <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg\,(\dot\neg\,(|(-\mathrm{u}\underline{\mathsf{x}})| = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg\,(|(-\mathrm{u}\underline{\mathsf{x}})| <= |(-\mathrm{u}\underline{\mathsf{y}})| \Rightarrow \dot\neg\,(\dot\neg\,(|(-\mathrm{u}\underline{\mathsf{x}})| =$

|(−u$\underline{y}$)|)n)n)n; LessLeq ⊳ $\dot{\neg}$ (|(−u$\underline{x}$)| <= |(−u$\underline{y}$)| ⇒ $\dot{\neg}$ ($\dot{\neg}$ (|(−u$\underline{x}$)| = |(−u$\underline{y}$)|)n)n)n ≫ |(−u$\underline{x}$)| <= |(−u$\underline{y}$)|; splitNumericalSum(+ − small) ⊳ 0 <= (−u$\underline{y}$) ⊳ (−u$\underline{x}$) <= 0 ⊳ |(−u$\underline{x}$)| <= |(−u$\underline{y}$)| ≫ |((−u$\underline{y}$) + (−u$\underline{x}$))| <= |(−u$\underline{y}$)|; SignNumerical ≫ |($\underline{x}$ + $\underline{y}$)| = |(−u($\underline{x}$ + $\underline{y}$))|; −x − y = −(x + y) ≫ ((−u$\underline{x}$) + (−u$\underline{y}$)) = (−u($\underline{x}$ + $\underline{y}$)); plusCommutativity ≫ ((−u$\underline{x}$) + (−u$\underline{y}$)) = ((−u$\underline{y}$) + (−u$\underline{x}$)); Equality ⊳ ((−u$\underline{x}$) + (−u$\underline{y}$)) = (−u($\underline{x}$ + $\underline{y}$)) ⊳ ((−u$\underline{x}$) + (−u$\underline{y}$)) = ((−u$\underline{y}$) + (−u$\underline{x}$)) ≫ (−u($\underline{x}$ + $\underline{y}$)) = ((−u$\underline{y}$) + (−u$\underline{x}$)); SameNumerical ⊳ (−u($\underline{x}$ + $\underline{y}$)) = ((−u$\underline{y}$) + (−u$\underline{x}$)) ≫ |(−u($\underline{x}$ + $\underline{y}$))| = |((−u$\underline{y}$) + (−u$\underline{x}$))|; eqTransitivity ⊳ |($\underline{x}$ + $\underline{y}$)| = |(−u($\underline{x}$ + $\underline{y}$))| ⊳ |(−u($\underline{x}$ + $\underline{y}$))| = |((−u$\underline{y}$) + (−u$\underline{x}$))| ≫ |($\underline{x}$ + $\underline{y}$)| = |((−u$\underline{y}$) + (−u$\underline{x}$))|; eqSymmetry ⊳ |($\underline{x}$ + $\underline{y}$)| = |((−u$\underline{y}$) + (−u$\underline{x}$))| ≫ |((−u$\underline{y}$) + (−u$\underline{x}$))| = |($\underline{x}$+$\underline{y}$)|; eqSymmetry ⊳ |$\underline{y}$| = |(−u$\underline{y}$)| ≫ |(−u$\underline{y}$)| = |$\underline{y}$|; subLeqLeft ⊳ |((−u$\underline{y}$) + (−u$\underline{x}$))| = |($\underline{x}$+$\underline{y}$)| ⊳ |((−u$\underline{y}$) + (−u$\underline{x}$))| <= |(−u$\underline{y}$)| ≫ |($\underline{x}$ + $\underline{y}$)| <= |(−u$\underline{y}$)|; subLeqRight ⊳ |(−u$\underline{y}$)| = |$\underline{y}$| ⊳ |($\underline{x}$ + $\underline{y}$)| <= |(−u$\underline{y}$)| ≫ |($\underline{x}$ + $\underline{y}$)| <= |$\underline{y}$|⌉, p_0, c)]

[splitNumericalSum(+−) $\stackrel{\text{stmt}}{\rightarrow}$ SystemQ ⊢ ∀$\underline{x}$: ∀$\underline{y}$: 0 <= $\underline{x}$ ⊢ $\underline{y}$ <= 0 ⊢ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|)]

[splitNumericalSum(+−) $\stackrel{\text{proof}}{\rightarrow}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢ ∀$\underline{x}$: ∀$\underline{y}$: |$\underline{y}$| <= |$\underline{x}$| ⊢ 0 <= $\underline{x}$ ⊢ $\underline{y}$ <= 0 ⊢ splitNumericalSum(+ − small) ⊳ 0 <= $\underline{x}$ ⊳ $\underline{y}$ <= 0 ⊳ |$\underline{y}$| <= |$\underline{x}$| ≫ |($\underline{x}$ + $\underline{y}$)| <= |$\underline{x}$|; 0 <= |x| ≫ 0 <= |$\underline{y}$|; LeqAdditionLeft ⊳ 0 <= |$\underline{y}$| ≫ (|$\underline{x}$| + 0) <= (|$\underline{x}$| + |$\underline{y}$|); plus0 ≫ (|$\underline{x}$| + 0) = |$\underline{x}$|; subLeqLeft ⊳ (|$\underline{x}$| + 0) = |$\underline{x}$| ⊳ (|$\underline{x}$| + 0) <= (|$\underline{x}$| + |$\underline{y}$|) ≫ |$\underline{x}$| <= (|$\underline{x}$| + |$\underline{y}$|); leqTransitivity ⊳ |($\underline{x}$ + $\underline{y}$)| <= |$\underline{x}$| ⊳ |$\underline{x}$| <= (|$\underline{x}$| + |$\underline{y}$|) ≫ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|); ∀$\underline{x}$: ∀$\underline{y}$: $\dot{\neg}$ (|$\underline{y}$| <= |$\underline{x}$|)n ⊢ 0 <= $\underline{x}$ ⊢ $\underline{y}$ <= 0 ⊢ ToLess ⊳ $\dot{\neg}$ (|$\underline{y}$| <= |$\underline{x}$|)n ≫ $\dot{\neg}$ (|$\underline{x}$| <= |$\underline{y}$| ⇒ $\dot{\neg}$ ($\dot{\neg}$ (|$\underline{x}$| = |$\underline{y}$|)n)n)n; splitNumericalSum(+ − big) ⊳ 0 <= $\underline{x}$ ⊳ $\underline{y}$ <= 0 ⊳ $\dot{\neg}$ (|$\underline{x}$| <= |$\underline{y}$| ⇒ $\dot{\neg}$ ($\dot{\neg}$ (|$\underline{x}$| = |$\underline{y}$|)n)n)n ≫ |($\underline{x}$+$\underline{y}$)| <= |$\underline{y}$|; 0 <= |x| ≫ 0 <= |$\underline{x}$|; leqAddition ⊳ 0 <= |$\underline{x}$| ≫ (0 + |$\underline{y}$|) <= (|$\underline{x}$| + |$\underline{y}$|); plus0Left ≫ (0 + |$\underline{y}$|) = |$\underline{y}$|; subLeqLeft ⊳ (0 + |$\underline{y}$|) = |$\underline{y}$| ⊳ (0 + |$\underline{y}$|) <= (|$\underline{x}$| + |$\underline{y}$|) ≫ |$\underline{y}$| <= (|$\underline{x}$| + |$\underline{y}$|); leqTransitivity ⊳ |($\underline{x}$ + $\underline{y}$)| <= |$\underline{y}$| ⊳ |$\underline{y}$| <= (|$\underline{x}$| + |$\underline{y}$|) ≫ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|); ∀$\underline{x}$: ∀$\underline{y}$: Ded ⊳ ∀$\underline{x}$: ∀$\underline{y}$: |$\underline{y}$| <= |$\underline{x}$| ⊢ 0 <= $\underline{x}$ ⊢ $\underline{y}$ <= 0 ⊢ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|) ≫ |$\underline{y}$| <= |$\underline{x}$| ⇒ 0 <= $\underline{x}$ ⇒ $\underline{y}$ <= 0 ⇒ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|); Ded ⊳ ∀$\underline{x}$: ∀$\underline{y}$: $\dot{\neg}$ (|$\underline{y}$| <= |$\underline{x}$|)n ⊢ 0 <= $\underline{x}$ ⊢ $\underline{y}$ <= 0 ⊢ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|) ≫ $\dot{\neg}$ (|$\underline{y}$| <= |$\underline{x}$|)n ⇒ 0 <= $\underline{x}$ ⇒ $\underline{y}$ <= 0 ⇒ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|); 0 <= $\underline{x}$ ⊢ $\underline{y}$ <= 0 ⊢ FromNegations ⊳ |$\underline{y}$| <= |$\underline{x}$| ⇒ 0 <= $\underline{x}$ ⇒ $\underline{y}$ <= 0 ⇒ |($\underline{x}$+$\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|) ⊳ $\dot{\neg}$ (|$\underline{y}$| <= |$\underline{x}$|)n ⇒ 0 <= $\underline{x}$ ⇒ $\underline{y}$ <= 0 ⇒ |($\underline{x}$+$\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|) ≫ 0 <= $\underline{x}$ ⇒ $\underline{y}$ <= 0 ⇒ |($\underline{x}$+$\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|); MP2 ⊳ 0 <= $\underline{x}$ ⇒ $\underline{y}$ <= 0 ⇒ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|) ⊳ 0 <= $\underline{x}$ ⊳ $\underline{y}$ <= 0 ≫ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|)⌉, p_0, c)]

[splitNumericalSum(−+) $\stackrel{\text{stmt}}{\rightarrow}$ SystemQ ⊢ ∀$\underline{x}$: ∀$\underline{y}$: $\underline{x}$ <= 0 ⊢ 0 <= $\underline{y}$ ⊢ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|)]

[splitNumericalSum(−+) $\stackrel{\text{proof}}{\rightarrow}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢ ∀$\underline{x}$: ∀$\underline{y}$: $\underline{x}$ <= 0 ⊢ 0 <= $\underline{y}$ ⊢ NonpositiveNegated ⊳ $\underline{x}$ <= 0 ≫ 0 <= (−u$\underline{x}$); NonnegativeNegated ⊳ 0 <= $\underline{y}$ ≫ (−u$\underline{y}$) <= 0; splitNumericalSum(+−) ⊳ 0 <= (−u$\underline{x}$) ⊳ (−u$\underline{y}$) <= 0 ≫ |((−u$\underline{x}$) + (−u$\underline{y}$))| <= (|(−u$\underline{x}$)| + |(−u$\underline{y}$)|); SplitNumericalSumHelper ⊳ |((−u$\underline{x}$) + (−u$\underline{y}$))| <= (|(−u$\underline{x}$)| + |(−u$\underline{y}$)|) ≫ |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|)⌉, p_0, c)]

[splitNumericalSum $\stackrel{\text{stmt}}{\rightarrow}$ SystemQ ⊢ ∀$\underline{x}$: ∀$\underline{y}$: |($\underline{x}$ + $\underline{y}$)| <= (|$\underline{x}$| + |$\underline{y}$|)]

[splitNumericalSum $\stackrel{\text{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon 0 <= \underline{x} \vdash 0 <= \underline{y} \vdash \text{splitNumericalSum}(++) \rhd 0 <= \underline{x} \rhd 0 <= \underline{y} \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \forall \underline{x}\colon \forall \underline{y}\colon 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash \text{splitNumericalSum}(+-) \rhd 0 <= \underline{x} \rhd \underline{y} <= 0 \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= 0 \vdash 0 <= \underline{y} \vdash \text{splitNumericalSum}(-+) \rhd \underline{x} <= 0 \rhd 0 <= \underline{y} \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= 0 \vdash \underline{y} <= 0 \vdash \text{splitNumericalSum}(--) \rhd \underline{x} <= 0 \rhd \underline{y} <= 0 \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \forall \underline{x}\colon \forall \underline{y}\colon \text{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon 0 <= \underline{x} \vdash 0 <= \underline{y} \vdash |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \gg 0 <= \underline{x} \Rightarrow 0 <= \underline{y} \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \text{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \gg 0 <= \underline{x} \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \text{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= 0 \vdash 0 <= \underline{y} \vdash |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \gg \underline{x} <= 0 \Rightarrow 0 <= \underline{y} \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \text{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= 0 \vdash \underline{y} <= 0 \vdash |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \gg \underline{x} <= 0 \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \text{FromLeqGeq} \rhd 0 <= \underline{x} \Rightarrow 0 <= \underline{y} \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \rhd \underline{x} <= 0 \Rightarrow 0 <= \underline{y} \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \gg 0 <= \underline{y} \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \text{FromLeqGeq} \rhd 0 <= \underline{x} \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \rhd \underline{x} <= 0 \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \gg \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \text{FromLeqGeq} \rhd 0 <= \underline{y} \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \rhd \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|)\rceil, p_0, c)$]

[insertMiddleTerm(Sum) $\stackrel{\text{stmt}}{\to} \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{x}+\underline{y}) = ((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y}))$]

[insertMiddleTerm(Sum) $\stackrel{\text{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg \underline{x} = ((\underline{x}+\underline{z})+(-u\underline{z})); \text{Three2threeTerms} \gg ((\underline{x}+\underline{z})+(-u\underline{z})) = ((\underline{x}+(-u\underline{z}))+\underline{z}); \text{eqTransitivity} \rhd \underline{x} = ((\underline{x}+\underline{z})+(-u\underline{z})) \rhd ((\underline{x}+\underline{z})+(-u\underline{z})) = ((\underline{x}+(-u\underline{z}))+\underline{z}) \gg \underline{x} = ((\underline{x}+(-u\underline{z}))+\underline{z}); \text{eqAddition} \rhd \underline{x} = ((\underline{x}+(-u\underline{z}))+\underline{z}) \gg (\underline{x}+\underline{y}) = (((\underline{x}+(-u\underline{z}))+\underline{z})+\underline{y}); \text{plusAssociativity} \gg (((\underline{x}+(-u\underline{z}))+\underline{z})+\underline{y}) = ((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y})); \text{eqTransitivity} \rhd (\underline{x}+\underline{y}) = (((\underline{x}+(-u\underline{z}))+\underline{z})+\underline{y}) \rhd (((\underline{x}+(-u\underline{z}))+\underline{z})+\underline{y}) = ((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y})) \gg (\underline{x}+\underline{y}) = ((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y}))\rceil, p_0, c)$]

[insertMiddleTerm(Numerical) $\stackrel{\text{stmt}}{\to} \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon |(\underline{x}+\underline{y})| <= (|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+\underline{y})|)$]

[insertMiddleTerm(Numerical) $\stackrel{\text{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \text{splitNumericalSum} \gg |((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y}))| <= (|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+\underline{y})|); \text{insertMiddleTerm(Sum)} \gg (\underline{x}+\underline{y}) = ((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y})); \text{SameNumerical} \rhd (\underline{x}+\underline{y}) = ((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y})) \gg |(\underline{x}+\underline{y})| = |((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y}))|; \text{eqSymmetry} \rhd |(\underline{x}+\underline{y})| = |((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y}))| \gg |((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y}))| = |(\underline{x}+\underline{y})|; \text{subLeqLeft} \rhd |((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y}))| = |(\underline{x}+\underline{y})| \rhd |((\underline{x}+(-u\underline{z}))+(\underline{z}+\underline{y}))| <= (|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+\underline{y})|) \gg |(\underline{x}+\underline{y})| <= (|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+\underline{y})|)\rceil, p_0, c)$]
(*** REGNESTYKKER ***)

[insertMiddleTerm(Difference) $\stackrel{\text{stmt}}{\to} \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon (\underline{x}+(-u\underline{y})) = ((\underline{x}+\underline{z})+(-u(\underline{y}+\underline{z})))$]

[insertMiddleTerm(Difference) $\stackrel{\text{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \text{insertMiddleTerm(Sum)} \gg (\underline{x}+(-u\underline{y})) = ((\underline{x}+(-u(-u\underline{z})))+((-u\underline{z})+(-u\underline{y}))); \text{DoubleMinus} \gg (-u(-u\underline{z})) = \underline{z}; \text{EqAdditionLeft} \rhd (-u(-u\underline{z})) = \underline{z} \gg (\underline{x}+(-u(-u\underline{z}))) =$

$(\underline{x} + \underline{z}); \mathrm{plusCommutativity} \gg ((-u\underline{z}) + (-u\underline{y})) = ((-u\underline{y}) + (-u\underline{z})); -x - y = -(x + y) \gg ((-u\underline{y}) + (-u\underline{z})) = (-u(\underline{y} + \underline{z})); \mathrm{eqTransitivity} \rhd ((-u\underline{z}) + (-u\underline{y})) = ((-u\underline{y}) + (-u\underline{z})) \rhd ((-u\underline{y}) + (-u\underline{z})) = (-u(\underline{y} + \underline{z})) \gg ((-u\underline{z}) + (-u\underline{y})) = (-u(\underline{y} + \underline{z})); \mathrm{AddEquations} \rhd (\underline{x} + (-u(-u\underline{z}))) = (\underline{x} + \underline{z}) \rhd ((-u\underline{z}) + (-u\underline{y})) = (-u(\underline{y} + \underline{z})) \gg ((\underline{x} + (-u(-u\underline{z}))) + ((-u\underline{z}) + (-u\underline{y}))) = ((\underline{x} + \underline{z}) + (-u(\underline{y} + \underline{z}))); \mathrm{eqTransitivity} \rhd (\underline{x} + (-u\underline{y})) = ((\underline{x} + (-u(-u\underline{z}))) + ((-u\underline{z}) + (-u\underline{y}))) \rhd ((\underline{x} + (-u(-u\underline{z}))) + ((-u\underline{z}) + (-u\underline{y}))) = ((\underline{x} + \underline{z}) + (-u(\underline{y} + \underline{z}))) \gg (\underline{x} + (-u\underline{y})) = ((\underline{x} + \underline{z}) + (-u(\underline{y} + \underline{z})))\rceil, p_0, \mathsf{c})]$

$[\mathrm{DistributionOutLeft} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon ((\underline{y} * \underline{x}) + (\underline{z} * \underline{x})) = (\underline{x} * (\underline{y} + \underline{z}))]$

$[\mathrm{DistributionOutLeft} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \mathrm{timesCommutativity} \gg (\underline{y} * \underline{x}) = (\underline{x} * \underline{y}); \mathrm{timesCommutativity} \gg (\underline{z} * \underline{x}) = (\underline{x} * \underline{z}); \mathrm{AddEquations} \rhd (\underline{y} * \underline{x}) = (\underline{x} * \underline{y}) \rhd (\underline{z} * \underline{x}) = (\underline{x} * \underline{z}) \gg ((\underline{y} * \underline{x}) + (\underline{z} * \underline{x})) = ((\underline{x} * \underline{y}) + (\underline{x} * \underline{z})); \mathrm{DistributionOut} \gg ((\underline{x} * \underline{y}) + (\underline{x} * \underline{z})) = (\underline{x} * (\underline{y} + \underline{z})); \mathrm{eqTransitivity} \rhd ((\underline{y} * \underline{x}) + (\underline{z} * \underline{x})) = ((\underline{x} * \underline{y}) + (\underline{x} * \underline{z})) \rhd ((\underline{x} * \underline{y}) + (\underline{x} * \underline{z})) = (\underline{x} * (\underline{y} + \underline{z})) \gg ((\underline{y} * \underline{x}) + (\underline{z} * \underline{x})) = (\underline{x} * (\underline{y} + \underline{z}))\rceil, p_0, \mathsf{c})]$

$[\mathrm{TwoWholes} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon (\underline{x} + \underline{x}) = ((1 + 1) * \underline{x})]$

$[\mathrm{TwoWholes} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \mathrm{times1} \gg (\underline{x} * 1) = \underline{x}; \mathrm{eqSymmetry} \gg \underline{x} = (\underline{x} * 1); \mathrm{EqAdditionLeft} \rhd \underline{x} = (\underline{x} * 1) \gg (\underline{x} + \underline{x}) = (\underline{x} + (\underline{x} * 1)); \mathrm{eqAddition} \rhd \underline{x} = (\underline{x} * 1) \gg (\underline{x} + (\underline{x} * 1)) = ((\underline{x} * 1) + (\underline{x} * 1)); \mathrm{eqTransitivity} \rhd (\underline{x} + \underline{x}) = (\underline{x} + (\underline{x} * 1)) \rhd (\underline{x} + (\underline{x} * 1)) = ((\underline{x} * 1) + (\underline{x} * 1)) \gg (\underline{x} + \underline{x}) = ((\underline{x} * 1) + (\underline{x} * 1)); \mathrm{DistributionOut} \gg ((\underline{x} * 1) + (\underline{x} * 1)) = (\underline{x} * (1 + 1)); \mathrm{Repetition} \rhd ((\underline{x} * 1) + (\underline{x} * 1)) = (\underline{x} * (1 + 1)) \gg ((\underline{x} * 1) + (\underline{x} * 1)) = (\underline{x} * (1 + 1)); \mathrm{timesCommutativity} \gg (\underline{x} * (1 + 1)) = ((1 + 1) * \underline{x}); \mathrm{eqTransitivity4} \rhd (\underline{x} + \underline{x}) = ((\underline{x} * 1) + (\underline{x} * 1)) \rhd ((\underline{x} * 1) + (\underline{x} * 1)) = (\underline{x} * (1 + 1)) \rhd (\underline{x} * (1 + 1)) = ((1 + 1) * \underline{x}) \gg (\underline{x} + \underline{x}) = ((1 + 1) * \underline{x})\rceil, p_0, \mathsf{c})]$

$[\mathrm{TwoHalves} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon ((\mathrm{rec}(1 + 1) * \underline{x}) + (\mathrm{rec}(1 + 1) * \underline{x})) = \underline{x}]$

$[\mathrm{TwoHalves} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon 0 < 2 \gg \dot{\neg}(0 <= (1 + 1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (1 + 1))n)n)n; \mathrm{LessNeq} \rhd \dot{\neg}(0 <= (1 + 1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (1 + 1))n)n)n \gg \dot{\neg}(0 = (1 + 1))n; \mathrm{NeqSymmetry} \rhd \dot{\neg}(0 = (1 + 1))n \gg \dot{\neg}((1 + 1) = 0)n; \mathrm{TwoWholes} \gg ((\mathrm{rec}(1+1) * \underline{x}) + (\mathrm{rec}(1+1) * \underline{x})) = ((1+1) * (\mathrm{rec}(1+1) * \underline{x})); \mathrm{timesAssociativity} \gg (((1 + 1) * \mathrm{rec}(1 + 1)) * \underline{x}) = ((1 + 1) * (\mathrm{rec}(1 + 1) * \underline{x})); \mathrm{eqSymmetry} \rhd (((1 + 1) * \mathrm{rec}(1 + 1)) * \underline{x}) = ((1 + 1) * (\mathrm{rec}(1 + 1) * \underline{x})) \gg ((1 + 1) * (\mathrm{rec}(1 + 1) * \underline{x})) = (((1 + 1) * \mathrm{rec}(1 + 1)) * \underline{x}); \mathrm{Reciprocal} \rhd \dot{\neg}((1 + 1) = 0)n \gg ((1 + 1) * \mathrm{rec}(1 + 1)) = 1; \mathrm{eqMultiplication} \rhd ((1 + 1) * \mathrm{rec}(1 + 1)) = 1 \gg (((1 + 1) * \mathrm{rec}(1 + 1)) * \underline{x}) = (1 * \underline{x}); \mathrm{times1Left} \gg (1 * \underline{x}) = \underline{x}; \mathrm{eqTransitivity5} \rhd ((\mathrm{rec}(1+1) * \underline{x}) + (\mathrm{rec}(1+1) * \underline{x})) = ((1 + 1) * (\mathrm{rec}(1 + 1) * \underline{x})) \rhd ((1 + 1) * (\mathrm{rec}(1 + 1) * \underline{x})) = (((1 + 1) * \mathrm{rec}(1 + 1)) * \underline{x}) \rhd (((1 + 1) * \mathrm{rec}(1 + 1)) * \underline{x}) = (1 * \underline{x}) \rhd (1 * \underline{x}) = \underline{x} \gg ((\mathrm{rec}(1 + 1) * \underline{x}) + (\mathrm{rec}(1 + 1) * \underline{x})) = \underline{x}\rceil, p_0, \mathsf{c})]$

$[\mathrm{ThreeWholes} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon ((\underline{x} + \underline{x}) + \underline{x}) = (((1 + 1) + 1) * \underline{x})]$

$[\mathrm{ThreeWholes} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \mathrm{TwoWholes} \gg (\underline{x} + \underline{x}) = ((1 + 1) * \underline{x}); \mathrm{times1Left} \gg (1 * \underline{x}) = \underline{x}; \mathrm{eqSymmetry} \rhd (1 * \underline{x}) = \underline{x} \gg \underline{x} = (1 * \underline{x}); \mathrm{AddEquations} \rhd (\underline{x} + \underline{x}) = ((1 + 1) * \underline{x}) \rhd \underline{x} = (1 * \underline{x}) \gg ((\underline{x} + \underline{x}) + \underline{x}) = (((1 + 1) * \underline{x}) + (1 * \underline{x})); \mathrm{DistributionOutLeft} \gg (((1 + 1) * \underline{x}) + (1 * \underline{x})) = (\underline{x} * ((1 + 1) + 1)); \mathrm{timesCommutativity} \gg (\underline{x} * ((1 + 1) + 1)) =$

$(((1+1)+1)*\underline{x}); \mathrm{eqTransitivity4} \rhd ((\underline{x}+\underline{x})+\underline{x}) = (((1+1)*\underline{x})+(1*\underline{x})) \rhd (((1+1)*\underline{x})+(1*\underline{x})) = (\underline{x}*((1+1)+1)) \rhd (\underline{x}*((1+1)+1)) = (((1+1)+1)*\underline{x}) \gg ((\underline{x}+\underline{x})+\underline{x}) = (((1+1)+1)*\underline{x}); \mathrm{Repetition} \rhd ((\underline{x}+\underline{x})+\underline{x}) = (((1+1)+1)*\underline{x}) \gg ((\underline{x}+\underline{x})+\underline{x}) = (((1+1)+1)*\underline{x})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[0<3 \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[0<3 \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash 0<2 \gg \dot{\neg}(0 <= (1+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessLeq} \rhd \dot{\neg}(0 <= (1+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= (1+1); \mathrm{Leq}+1 \rhd 0 <= (1+1) \gg \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ThreeThirds} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x}]$

$[\mathrm{ThreeThirds} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon 0<3 \gg \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveNonzero} \rhd \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(((1+1)+1) = 0)\mathrm{n}; \mathrm{ThreeWholes} \gg (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{x})); \mathrm{timesAssociativity} \gg ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{x})); \mathrm{eqSymmetry} \rhd ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) \gg (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) = ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{x}); \mathrm{Reciprocal} \rhd \dot{\neg}(((1+1)+1) = 0)\mathrm{n} \gg (((1+1)+1)*\mathrm{rec}((1+1)+1)) = 1; \mathrm{eqMultiplication} \rhd (((1+1)+1)*\mathrm{rec}((1+1)+1)) = 1 \gg ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = (1*\underline{x}); \mathrm{times1Left} \gg (1*\underline{x}) = \underline{x}; \mathrm{eqTransitivity5} \rhd (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) \rhd (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) = ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{x}) \rhd ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = (1*\underline{x}) \rhd (1*\underline{x}) = \underline{x} \gg (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x}\rceil, \mathrm{p}_0, \mathsf{c})]$

XX 0¡1/2 er et specialtilfaelde $[\mathrm{PositiveInverted} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <= \mathrm{rec}\underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}\underline{x})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{PositiveInverted} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{FirstConjunct} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{x}; \mathrm{SecondConjunct} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 = \underline{x})\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot{\neg}(0 = \underline{x})\mathrm{n} \gg \dot{\neg}(\underline{x} = 0)\mathrm{n}; 0<1 \gg \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{x}*0 = 0 \gg (\underline{x}*0) = 0; \mathrm{x}*\mathrm{y} = \mathrm{zBackwards} \rhd (\underline{x}*0) = 0 \gg 0 = (0*\underline{x}); \mathrm{SubLessLeft} \rhd 0 = (0*\underline{x}) \rhd \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((0*\underline{x}) <= 1 \Rightarrow \dot{\neg}(\dot{\neg}((0*\underline{x}) = 1)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Reciprocal} \rhd \dot{\neg}(\underline{x} = 0)\mathrm{n} \gg (\underline{x}*\mathrm{rec}\underline{x}) = 1; \mathrm{x}*\mathrm{y} = \mathrm{zBackwards} \rhd (\underline{x}*\mathrm{rec}\underline{x}) = 1 \gg 1 = (\mathrm{rec}\underline{x}*\underline{x}); \mathrm{SubLessRight} \rhd 1 = (\mathrm{rec}\underline{x}*\underline{x}) \rhd \dot{\neg}((0*\underline{x}) <= 1 \Rightarrow \dot{\neg}(\dot{\neg}((0*\underline{x}) = 1)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((0*\underline{x}) <= (\mathrm{rec}\underline{x}*\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((0*\underline{x}) = (\mathrm{rec}\underline{x}*\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessDivision} \rhd 0 <= \underline{x} \rhd \dot{\neg}((0*\underline{x}) <= (\mathrm{rec}\underline{x}*\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((0*\underline{x}) = (\mathrm{rec}\underline{x}*\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= \mathrm{rec}\underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}\underline{x})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[0<1/3 \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \dot{\neg}(0 <= \mathrm{rec}((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[0<1/3 \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash 0<3 \gg \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveInverted} \rhd \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+$

$1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= \mathrm{rec}((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$
(*** KVANTI ***)

$[\mathrm{Nat}(\mathsf{x}) \overset{\text{macro}}{\to} \lambda \mathsf{t}.\lambda \mathsf{s}.\lambda \mathsf{c}.\tilde{\mathcal{M}}_4(\mathsf{t}, \mathsf{s}, \mathsf{c}, \lceil[\mathrm{Nat}(\mathsf{x}) \ddot{=} \lambda \mathsf{c}.\lceil \mathsf{x}\rceil \in_{\mathrm{t}} (\lceil \mathrm{V}_{2\mathrm{n}}\rceil :: \lceil \mathcal{M}\rceil :: \lceil \mathcal{N}\rceil :: \mathsf{T})]\rceil)]$

$[\langle \mathsf{a} \equiv \mathsf{b} | \mathsf{x} \mathrel{:==} \mathsf{t}\rangle_{\mathrm{Me}} \overset{\text{macro}}{\to} \lambda \mathsf{t}.\lambda \mathsf{s}.\lambda \mathsf{c}.\tilde{\mathcal{M}}_4(\mathsf{t}, \mathsf{s}, \mathsf{c}, \lceil[\langle \mathsf{a} \equiv \mathsf{b} | \mathsf{x} \mathrel{:==} \mathsf{t}\rangle_{\mathrm{Me}} \ddot{=} \langle \lceil \mathsf{a}\rceil \equiv^1 \lceil \mathsf{b}\rceil | \lceil \mathsf{x}\rceil \mathrel{:==} \lceil \mathsf{t}\rceil\rangle_{\mathrm{Me}}]\rceil)]$

$[\langle \mathsf{a} \equiv^1 \mathsf{b} | \mathsf{x} \mathrel{:==} \mathsf{t}\rangle_{\mathrm{Me}} \overset{\text{val}}{\to} \mathsf{a}!\mathsf{x}!\mathsf{t}!$
$\mathrm{If}(\mathrm{If}(\mathsf{b} \overset{\mathrm{r}}{=} \lceil \forall_{\mathrm{obj}} \mathsf{u} \colon \mathsf{v}\rceil, \mathsf{b}^1 \overset{\mathrm{t}}{=} \mathsf{x}, \mathsf{F}), \mathsf{a} \overset{\mathrm{t}}{=} \mathsf{b},$
$\mathrm{If}(\mathsf{b} \overset{\mathrm{t}}{=} \mathsf{x}, \mathsf{a} \overset{\mathrm{t}}{=} \mathsf{t}, \mathrm{If}($
$\mathsf{a} \overset{\mathrm{r}}{=} \mathsf{b}, \langle \mathsf{a}^{\mathrm{t}} \equiv^* \mathsf{b}^{\mathrm{t}} | \mathsf{x} \mathrel{:==} \mathsf{t}\rangle_{\mathrm{Me}}, \mathsf{F})))]$

$[\langle \mathsf{a} \equiv^* \mathsf{b} | \mathsf{x} \mathrel{:==} \mathsf{t}\rangle_{\mathrm{Me}} \overset{\text{val}}{\to} \mathsf{b}!\mathsf{x}!\mathsf{t}!\mathrm{If}(\mathsf{a}, \mathsf{T}, \mathrm{If}(\langle \mathsf{a}^{\mathrm{h}} \equiv^1 \mathsf{b}^{\mathrm{h}} | \mathsf{x} \mathrel{:==} \mathsf{t}\rangle_{\mathrm{Me}}, \langle \mathsf{a}^{\mathrm{t}} \equiv^* \mathsf{b}^{\mathrm{t}} | \mathsf{x} \mathrel{:==} \mathsf{t}\rangle_{\mathrm{Me}}, \mathsf{F}))]$

$[\mathrm{FromNotSameF(Weak)(Helper)} \overset{\text{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| <= \underline{\mathsf{z}} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})))\mathrm{n} \Rightarrow \underline{\mathsf{y}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))]$

$[\mathrm{FromNotSameF(Weak)(Helper)} \overset{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \underline{\mathsf{z}} <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| \vdash 0 <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) \vdash \mathrm{NonnegativeNumerical} \rhd 0 <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) \gg |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})); \mathrm{subLeqRight} \rhd |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) \rhd \underline{\mathsf{z}} <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| \gg \underline{\mathsf{z}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})); \mathrm{negativeToLeft(Leq)} \rhd \underline{\mathsf{z}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) \gg (\underline{\mathsf{z}} + \underline{\mathsf{y}}) <= \underline{\mathsf{x}}; \mathrm{plusCommutativity} \gg (\underline{\mathsf{z}} + \underline{\mathsf{y}}) = (\underline{\mathsf{y}} + \underline{\mathsf{z}}); \mathrm{subLeqLeft} \rhd (\underline{\mathsf{z}} + \underline{\mathsf{y}}) = (\underline{\mathsf{y}} + \underline{\mathsf{z}}) \rhd (\underline{\mathsf{z}} + \underline{\mathsf{y}}) <= \underline{\mathsf{x}} \gg (\underline{\mathsf{y}} + \underline{\mathsf{z}}) <= \underline{\mathsf{x}}; \mathrm{PositiveToRight(Leq)} \rhd (\underline{\mathsf{y}} + \underline{\mathsf{z}}) <= \underline{\mathsf{x}} \gg \underline{\mathsf{y}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})); \mathrm{WeakenOr1} \rhd \underline{\mathsf{y}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) \gg \dot{\neg}(\underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})))\mathrm{n} \Rightarrow \underline{\mathsf{y}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})); \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \underline{\mathsf{z}} <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| \vdash \dot{\neg}(0 <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})))\mathrm{n} \vdash \mathrm{ToLess} \rhd \dot{\neg}(0 <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})))\mathrm{n} \gg \dot{\neg}((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) = 0)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{NegativeNumerical} \gg |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (-\mathrm{u}(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))); \mathrm{MinusNegated} \gg (-\mathrm{u}(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))) = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})); \mathrm{eqTransitivity} \rhd |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (-\mathrm{u}(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))) \rhd (-\mathrm{u}(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))) = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})) \gg |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})); \mathrm{subLeqRight} \rhd |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})) \rhd \underline{\mathsf{z}} <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| \gg \underline{\mathsf{z}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})); \mathrm{negativeToLeft(Leq)} \rhd \underline{\mathsf{z}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})) \gg (\underline{\mathsf{z}} + \underline{\mathsf{x}}) <= \underline{\mathsf{y}}; \mathrm{plusCommutativity} \gg (\underline{\mathsf{z}} + \underline{\mathsf{x}}) = (\underline{\mathsf{x}} + \underline{\mathsf{z}}); \mathrm{subLeqLeft} \rhd (\underline{\mathsf{z}} + \underline{\mathsf{x}}) = (\underline{\mathsf{x}} + \underline{\mathsf{z}}) \rhd (\underline{\mathsf{z}} + \underline{\mathsf{x}}) <= \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} + \underline{\mathsf{z}}) <= \underline{\mathsf{y}}; \mathrm{PositiveToRight(Leq)} \rhd (\underline{\mathsf{x}} + \underline{\mathsf{z}}) <= \underline{\mathsf{y}} \gg \underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})); \mathrm{WeakenOr2} \rhd \underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})) \gg \dot{\neg}(\underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})))\mathrm{n} \Rightarrow \underline{\mathsf{y}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})); \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \mathrm{Ded} \rhd \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \underline{\mathsf{z}} <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| \vdash 0 <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) \vdash \dot{\neg}(\underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})))\mathrm{n} \Rightarrow \underline{\mathsf{y}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) \gg \underline{\mathsf{z}} <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| \Rightarrow 0 <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) \Rightarrow \dot{\neg}(\underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})))\mathrm{n} \Rightarrow \underline{\mathsf{y}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})); \mathrm{Ded} \rhd \forall \underline{\mathsf{x}} \colon \forall \underline{\mathsf{y}} \colon \forall \underline{\mathsf{z}} \colon \underline{\mathsf{z}} <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| \vdash \dot{\neg}(0 <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})))\mathrm{n} \vdash \dot{\neg}(\underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})))\mathrm{n} \Rightarrow \underline{\mathsf{y}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) \gg \underline{\mathsf{z}} <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| \Rightarrow \dot{\neg}(0 <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})))\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{z}})))\mathrm{n} \Rightarrow \underline{\mathsf{y}} <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})); \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| <= \underline{\mathsf{z}} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{fromNotLess} \rhd \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| <= \underline{\mathsf{z}} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{z}} <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))|; \mathrm{MP} \rhd \underline{\mathsf{z}} <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| \Rightarrow 0 <= (\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) \Rightarrow \dot{\neg}(\underline{\mathsf{x}} <=$

$(\underline{y} + (-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x} + (-u\underline{z})) \rhd \underline{z} <= |(\underline{x} + (-u\underline{y}))| \gg 0 <= (\underline{x} + (-u\underline{y})) \Rightarrow$
$\dot\neg (\underline{x} <= (\underline{y} + (-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x} + (-u\underline{z})); \mathrm{MP} \rhd \underline{z} <= |(\underline{x} + (-u\underline{y}))| \Rightarrow$
$\dot\neg (0 <= (\underline{x} + (-u\underline{y})))n \Rightarrow \dot\neg (\underline{x} <= (\underline{y} + (-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x} + (-u\underline{z})) \rhd \underline{z} <=$
$|(\underline{x} + (-u\underline{y}))| \gg \dot\neg (0 <= (\underline{x} + (-u\underline{y})))n \Rightarrow \dot\neg (\underline{x} <= (\underline{y} + (-u\underline{z})))n \Rightarrow \underline{y} <=$
$(\underline{x} + (-u\underline{z})); \mathrm{FromNegations} \rhd 0 <= (\underline{x} + (-u\underline{y})) \Rightarrow \dot\neg (\underline{x} <= (\underline{y} + (-u\underline{z})))n \Rightarrow$
$\underline{y} <= (\underline{x} + (-u\underline{z})) \rhd \dot\neg (0 <= (\underline{x} + (-u\underline{y})))n \Rightarrow \dot\neg (\underline{x} <= (\underline{y} + (-u\underline{z})))n \Rightarrow \underline{y} <=$
$(\underline{x} + (-u\underline{z})) \gg \dot\neg (\underline{x} <= (\underline{y} + (-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x} + (-u\underline{z}))\rceil, p_0, \mathsf{c})]$

$[\mathrm{FromNotSameF(Weak)} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall \underline{m}\colon \forall \underline{n}\colon \forall \underline{(\epsilon)}\colon \forall \underline{(fx)}\colon \forall \underline{(fy)}\colon \dot\neg (\forall_{obj} \overline{(\epsilon)}\colon \dot\neg (\forall_{obj} \overline{n}\colon \dot\neg (\forall_{obj} \overline{m}\colon \dot\neg (0 <= \overline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{n} <= \overline{m} \Rightarrow \dot\neg (|(\underline{(fx)}[\overline{m}] + (-u\underline{(fy)}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg (\dot\neg (|(\underline{(fx)}[\overline{m}] + (-u\underline{(fy)}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n)n \vdash$
$\dot\neg (\forall_{obj} \underline{(\epsilon)}\colon \dot\neg (\forall_{obj} \underline{n}\colon \dot\neg (\forall_{obj} \underline{m}\colon \dot\neg (\dot\neg (\dot\neg (\dot\neg (0 <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg (\underline{n} <= \underline{m})n)n \Rightarrow \dot\neg (\dot\neg ((\underline{(fx)}[\underline{m}] <= (\underline{(fy)}[\underline{m}] + (-u\underline{(\epsilon)})))n \Rightarrow \underline{(fy)}[\underline{m}] <=$
$((\underline{(fx)}[\underline{m}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n]$

$[\mathrm{FromNotSameF(Weak)} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall \underline{m}\colon \forall \underline{n}\colon \forall \underline{(\epsilon)}\colon \forall \underline{(fx)}\colon \forall \underline{(fy)}\colon \dot\neg (\forall_{obj} \overline{(\epsilon)}\colon \dot\neg (\forall_{obj} \overline{n}\colon \dot\neg (\forall_{obj} \overline{m}\colon \dot\neg (0 <= \overline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{n} <= \overline{m} \Rightarrow \dot\neg (|(\underline{(fx)}[\overline{m}] + (-u\underline{(fy)}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg (\dot\neg (|(\underline{(fx)}[\overline{m}] + (-u\underline{(fy)}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n)n \vdash$
$\mathrm{Repetition} \rhd \dot\neg (\forall_{obj} \overline{(\epsilon)}\colon \dot\neg (\forall_{obj} \overline{n}\colon \dot\neg (\forall_{obj} \overline{m}\colon \dot\neg (0 <= \overline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{n} <= \overline{m} \Rightarrow \dot\neg (|(\underline{(fx)}[\overline{m}] + (-u\underline{(fy)}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg (\dot\neg (|(\underline{(fx)}[\overline{m}] + (-u\underline{(fy)}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n)n \gg$
$\dot\neg (\forall_{obj} \overline{(\epsilon)}\colon \dot\neg (\forall_{obj} \overline{n}\colon \dot\neg (\forall_{obj} \overline{m}\colon \dot\neg (0 <= \overline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{n} <= \overline{m} \Rightarrow$
$\dot\neg (|(\underline{(fx)}[\overline{m}] + (-u\underline{(fy)}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (|(\underline{(fx)}[\overline{m}] + (-u\underline{(fy)}[\overline{m}]))| =$
$\overline{(\epsilon)})n)n)n)n)n)n; \mathrm{Ded} \rhd \dot\neg (\forall_{obj} \overline{(\epsilon)}\colon \dot\neg (\forall_{obj} \overline{n}\colon \dot\neg (\forall_{obj} \overline{m}\colon \dot\neg (0 <= \overline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{n} <= \overline{m} \Rightarrow \dot\neg (|(\underline{(fx)}[\overline{m}] + (-u\underline{(fy)}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg (\dot\neg (|(\underline{(fx)}[\overline{m}] + (-u\underline{(fy)}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n)n \gg$
$\dot\neg (\forall_{obj} \underline{(\epsilon)}\colon \dot\neg (\forall_{obj} \underline{n}\colon \dot\neg (\forall_{obj} \underline{m}\colon \dot\neg (0 <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow$
$\dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| =$
$\underline{(\epsilon)})n)n)n)n)n)n; \mathrm{AEA-negated} \rhd \dot\neg (\forall_{obj} \underline{(\epsilon)}\colon \dot\neg (\forall_{obj} \underline{n}\colon \dot\neg (\forall_{obj} \underline{m}\colon \dot\neg (0 <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg (\dot\neg (0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow \dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg (\dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| = \underline{(\epsilon)})n)n)n)n)n)n \gg$
$\dot\neg (\forall_{obj} \underline{(\epsilon)}\colon \dot\neg (\forall_{obj} \underline{n}\colon \dot\neg (\forall_{obj} \underline{m}\colon \dot\neg (\dot\neg (\dot\neg (0 <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{n} <=$
$\underline{m} \Rightarrow \dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| =$
$\underline{(\epsilon)})n)n)n)n)n)n)n)n; \forall \underline{m}\colon \forall \underline{n}\colon \forall \underline{(\epsilon)}\colon \forall \underline{(fx)}\colon \forall \underline{(fy)}\colon \dot\neg (\dot\neg (0 <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow \dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg (\dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| = \underline{(\epsilon)})n)n)n)n \vdash$
$\mathrm{FromNegated}(2 * \mathrm{Imply}) \rhd \dot\neg (\dot\neg (0 <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow$
$\dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| =$
$\underline{(\epsilon)})n)n)n)n \gg \dot\neg (\dot\neg (\dot\neg (0 <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg (\underline{n} <= \underline{m})n)n \Rightarrow$
$\dot\neg (\dot\neg (\dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| =$
$\underline{(\epsilon)})n)n)n)n)n)n; \mathrm{FirstConjunct} \rhd \dot\neg (\dot\neg (\dot\neg (0 <= \underline{(\epsilon)} \Rightarrow \dot\neg (\dot\neg (0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg (\underline{n} <= \underline{m})n)n \Rightarrow \dot\neg (\dot\neg (\dot\neg (|(\underline{(fx)}[\underline{m}] + (-u\underline{(fy)}[\underline{m}]))| <= \underline{(\epsilon)} \Rightarrow$

$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})\mathrm{n})\mathrm{n}$; SecondConjunct $\rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; FromNotSameF(Weak)(Helper) $\rhd \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}]+(-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}]+(-\mathrm{u}(\epsilon)))$; JoinConjuncts $\rhd \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})\mathrm{n})\mathrm{n} \rhd \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) \gg \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n}$; Ded $\rhd \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall(\epsilon)\colon \forall(\mathrm{fx})\colon \forall(\mathrm{fy})\colon \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n}$; AddEAE $\rhd \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; MP $\rhd \dot{\neg}(\forall_{\mathrm{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\forall_{\mathrm{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromMax}(1) \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \underline{\mathsf{y}} <= \underline{\mathsf{x}} \vdash \mathrm{if}(\underline{\mathsf{y}} <= \underline{\mathsf{x}}, \underline{\mathsf{x}}, \underline{\mathsf{y}}) = \underline{\mathsf{x}}]$

$[\mathrm{FromMax}(1) \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \underline{\mathsf{y}} <= \underline{\mathsf{x}} \vdash \mathrm{Max} \gg \dot{\neg}(\dot{\neg}(\underline{\mathsf{y}} <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{\mathsf{y}} <= \underline{\mathsf{x}}, \underline{\mathsf{x}}, \underline{\mathsf{y}}) = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{y}} <= \underline{\mathsf{x}})\mathrm{n} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{\mathsf{y}} <= \underline{\mathsf{x}}, \underline{\mathsf{x}}, \underline{\mathsf{y}}) = \underline{\mathsf{y}})\mathrm{n})\mathrm{n}$; AddDoubleNeg $\rhd \underline{\mathsf{y}} <= \underline{\mathsf{x}} \gg \dot{\neg}(\dot{\neg}(\underline{\mathsf{y}} <= \underline{\mathsf{x}})\mathrm{n})\mathrm{n}$; ToNegatedAnd(1) $\rhd \dot{\neg}(\dot{\neg}(\underline{\mathsf{y}} <= \underline{\mathsf{x}})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{\mathsf{y}} <= \underline{\mathsf{x}})\mathrm{n} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{\mathsf{y}} <= \underline{\mathsf{x}}, \underline{\mathsf{x}}, \underline{\mathsf{y}}) = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n}$; NegateDisjunct2 $\rhd \dot{\neg}(\dot{\neg}(\underline{\mathsf{y}} <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{\mathsf{y}} <= \underline{\mathsf{x}}, \underline{\mathsf{x}}, \underline{\mathsf{y}}) =$

$\underline{x})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x})\mathrm{n})\mathrm{n} \gg \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromMax}(2) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \vdash \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y}]$

$[\mathrm{FromMax}(2) \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \vdash \mathrm{Max} \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y})\mathrm{n})\mathrm{n}; \mathrm{ToNegatedAnd}(1) \rhd \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{NegateDisjunct1} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y})\mathrm{n})\mathrm{n} \gg \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{MaxLeq}(1) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y})]$

$[\mathrm{MaxLeq}(1) \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon \underline{y} <= \underline{x} \vdash \mathrm{FromMax}(1) \rhd \underline{y} <= \underline{x} \gg \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x}; \mathrm{eqSymmetry} \rhd \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x} \gg \underline{x} = \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \mathrm{eqLeq} \rhd \underline{x} = \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \forall \underline{x} \colon \forall \underline{y} \colon \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \vdash \mathrm{FromMax}(2) \rhd \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \gg \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y}; \mathrm{eqSymmetry} \rhd \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y} \gg \underline{y} = \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \mathrm{ToLess} \rhd \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessLeq} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{x} <= \underline{y}; \mathrm{subLeqRight} \rhd \underline{y} = \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \rhd \underline{x} <= \underline{y} \gg \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \forall \underline{x} \colon \forall \underline{y} \colon \mathrm{Ded} \rhd \forall \underline{x} \colon \forall \underline{y} \colon \underline{y} <= \underline{x} \vdash \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \underline{y} <= \underline{x} \Rightarrow \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \mathrm{Ded} \rhd \forall \underline{x} \colon \forall \underline{y} \colon \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \vdash \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \Rightarrow \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \mathrm{FromNegations} \rhd \underline{y} <= \underline{x} \Rightarrow \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \rhd \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \Rightarrow \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{MaxLeq}(2) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y})]$

$[\mathrm{MaxLeq}(2) \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon \underline{y} <= \underline{x} \vdash \mathrm{FromMax}(1) \rhd \underline{y} <= \underline{x} \gg \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x}; \mathrm{eqSymmetry} \rhd \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x} \gg \underline{x} = \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \mathrm{subLeqRight} \rhd \underline{x} = \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \rhd \underline{y} <= \underline{x} \gg \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \forall \underline{x} \colon \forall \underline{y} \colon \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \vdash \mathrm{FromMax}(2) \rhd \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \gg \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y}; \mathrm{eqSymmetry} \rhd \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y} \gg \underline{y} = \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \mathrm{eqLeq} \rhd \underline{y} = \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \forall \underline{x} \colon \forall \underline{y} \colon \mathrm{Ded} \rhd \forall \underline{x} \colon \forall \underline{y} \colon \underline{y} <= \underline{x} \vdash \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \underline{y} <= \underline{x} \Rightarrow \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \mathrm{Ded} \rhd \forall \underline{x} \colon \forall \underline{y} \colon \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \vdash \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \Rightarrow \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \mathrm{FromNegations} \rhd \underline{y} <= \underline{x} \Rightarrow \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \rhd \dot{\neg}(\underline{y} <= \underline{x})\mathrm{n} \Rightarrow \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{lemma\ negativeToRight(Leq)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon \forall \underline{z} \colon (\underline{x} + (-\mathrm{u}\underline{y})) <= \underline{z} \vdash \underline{x} <= (\underline{z} + \underline{y})]$

$[\mathrm{lemma\ negativeToRight(Leq)} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon \forall \underline{z} \colon (\underline{x} + (-\mathrm{u}\underline{y})) <= \underline{z} \vdash \mathrm{leqAddition} \rhd (\underline{x} + (-\mathrm{u}\underline{y})) <= \underline{z} \gg ((\underline{x} + (-\mathrm{u}\underline{y})) + \underline{y}) <= (\underline{z} + \underline{y}); \mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg \underline{x} = ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})); \mathrm{Three2threeTerms} \gg ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) = ((\underline{x} + (-\mathrm{u}\underline{y})) + \underline{y}); \mathrm{eqTransitivity} \rhd \underline{x} = ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) \rhd ((\underline{x} + \underline{y}) + (-\mathrm{u}\underline{y})) =$

$((\underline{x}+(-u\underline{y}))+\underline{y}) \gg \underline{x} = ((\underline{x}+(-u\underline{y}))+\underline{y}); \mathrm{eqSymmetry} \rhd \underline{x} = ((\underline{x}+(-u\underline{y}))+\underline{y}) \gg ((\underline{x}+(-u\underline{y}))+\underline{y}) = \underline{x}; \mathrm{subLeqLeft} \rhd ((\underline{x}+(-u\underline{y}))+\underline{y}) = \underline{x} \rhd ((\underline{x}+(-u\underline{y}))+\underline{y}) <= (\underline{z}+\underline{y}) \gg \underline{x} <= (\underline{z}+\underline{y})\rceil, p_0, \mathsf{c})]$

$[\mathrm{LessThanMax} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{a}\colon\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{a} \Rightarrow \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{y})n)n)n \vdash \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \underline{z} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{z})n)n)n \vdash \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n]$

$[\mathrm{LessThanMax} \stackrel{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{a}\colon\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{a} \Rightarrow \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{y})n)n)n \vdash \underline{a} \vdash \mathrm{MP} \rhd \underline{a} \Rightarrow \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{y})n)n)n \rhd \underline{a} \gg \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{y})n)n)n; \mathrm{MaxLeq}(1) \gg \underline{y} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}); \mathrm{LessLeqTransitivity} \rhd \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{y})n)n)n \rhd \underline{y} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \gg \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n; \forall\underline{a}\colon\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \underline{z} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{z})n)n)n \vdash \dot\neg(\underline{a})n \vdash \mathrm{MP} \rhd \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \underline{z} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{z})n)n)n \rhd \dot\neg(\underline{a})n \gg \dot\neg(\underline{x} <= \underline{z} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{z})n)n)n; \mathrm{MaxLeq}(2) \gg \underline{z} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}); \mathrm{LessLeqTransitivity} \rhd \dot\neg(\underline{x} <= \underline{z} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{z})n)n)n \rhd \underline{z} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \gg \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n; \forall\underline{a}\colon\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \mathrm{Ded} \rhd \forall\underline{a}\colon\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{a} \Rightarrow \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{y})n)n)n \vdash \underline{a} \vdash \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n \gg \underline{a} \Rightarrow \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{y})n)n)n \Rightarrow \underline{a} \Rightarrow \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n; \mathrm{Ded} \rhd \forall\underline{a}\colon\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \underline{z} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{z})n)n)n \vdash \dot\neg(\underline{a})n \vdash \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n \gg \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \underline{z} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{z})n)n)n \Rightarrow \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n; \underline{a} \Rightarrow \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{y})n)n)n \vdash \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \underline{z} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{z})n)n)n \vdash \mathrm{MP} \rhd \underline{a} \Rightarrow \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{y})n)n)n \Rightarrow \underline{a} \Rightarrow \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n \rhd \underline{a} \Rightarrow \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{y})n)n)n \gg \underline{a} \Rightarrow \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n; \mathrm{MP} \rhd \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \underline{z} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{z})n)n)n \Rightarrow \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n \rhd \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \underline{z} \Rightarrow \dot\neg(\dot\neg(\underline{x} = \underline{z})n)n)n \gg \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n; \mathrm{FromNegations} \rhd \underline{a} \Rightarrow \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n \rhd \dot\neg(\underline{a})n \Rightarrow \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n \gg \dot\neg(\underline{x} <= \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = \mathrm{if}(\underline{z} <= \underline{y}, \underline{y}, \underline{z}))n)n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{NonnegativeFactors} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon 0 <= \underline{x} \vdash 0 <= \underline{y} \vdash 0 <= (\underline{x} * \underline{y})]$

$[\mathrm{NonnegativeFactors} \stackrel{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon 0 <= \underline{x} \vdash 0 <= \underline{y} \vdash \mathrm{leqMultiplication} \rhd 0 <= \underline{y} \rhd 0 <= \underline{x} \gg (0*\underline{y}) <= (\underline{x}*\underline{y}); \mathrm{timesCommutativity} \gg (0*\underline{y}) = (\underline{y}*0); \mathrm{x}*0 = 0 \gg (\underline{y}*0) = 0; \mathrm{eqTransitivity} \rhd (0*\underline{y}) = (\underline{y}*0) \rhd (\underline{y}*0) = 0 \gg (0*\underline{y}) = 0; \mathrm{subLeqLeft} \rhd (0*\underline{y}) = 0 \rhd (0*\underline{y}) <= (\underline{x}*\underline{y}) \gg 0 <= (\underline{x}*\underline{y})\rceil, p_0, \mathsf{c})]$

$[\mathrm{MultiplyEquations} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon\forall\underline{u}\colon \underline{x} = \underline{y} \vdash \underline{z} = \underline{u} \vdash (\underline{x}*\underline{z}) = (\underline{y}*\underline{u})]$

$[\mathrm{MultiplyEquations} \stackrel{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon\forall\underline{u}\colon \underline{x} = \underline{y} \vdash \underline{z} = \underline{u} \vdash \mathrm{eqMultiplication} \rhd \underline{x} = \underline{y} \gg (\underline{x} * \underline{z}) = (\underline{y} * \underline{z}); \mathrm{EqMultiplicationLeft} \rhd \underline{z} = \underline{u} \gg (\underline{y} * \underline{z}) = (\underline{y} * \underline{u}); \mathrm{eqTransitivity} \rhd (\underline{x} * \underline{z}) = (\underline{y} * \underline{z}) \rhd (\underline{y} * \underline{z}) = (\underline{y} * \underline{u}) \gg (\underline{x} * \underline{z}) = (\underline{y} * \underline{u})\rceil, p_0, \mathsf{c})]$

$[\mathrm{MinusTimesMinus} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon ((-u\underline{x}) * (-u\underline{y})) = (\underline{x} * \underline{y})]$

$[\mathrm{MinusTimesMinus} \stackrel{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \mathrm{DoubleMinus} \gg (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{y}}; \mathrm{Times}(-1)\mathrm{Left} \gg ((-\mathrm{u}1) * (-\mathrm{u}\underline{\mathsf{y}})) = (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{y}})); \mathrm{eqTransitivity} \rhd ((-\mathrm{u}1) * (-\mathrm{u}\underline{\mathsf{y}})) = (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{y}})) \rhd (-\mathrm{u}(-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{y}} \gg ((-\mathrm{u}1) * (-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{y}}; \mathrm{EqMultiplicationLeft} \rhd ((-\mathrm{u}1) * (-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} * ((-\mathrm{u}1) * (-\mathrm{u}\underline{\mathsf{y}}))) = (\underline{\mathsf{x}} * \underline{\mathsf{y}}); \mathrm{Times}(-1) \gg (\underline{\mathsf{x}} * (-\mathrm{u}1)) = (-\mathrm{u}\underline{\mathsf{x}}); \mathrm{eqMultiplication} \rhd (\underline{\mathsf{x}} * (-\mathrm{u}1)) = (-\mathrm{u}\underline{\mathsf{x}}) \gg ((\underline{\mathsf{x}} * (-\mathrm{u}1)) * (-\mathrm{u}\underline{\mathsf{y}})) = ((-\mathrm{u}\underline{\mathsf{x}}) * (-\mathrm{u}\underline{\mathsf{y}})); \mathrm{timesAssociativity} \gg ((\underline{\mathsf{x}} * (-\mathrm{u}1)) * (-\mathrm{u}\underline{\mathsf{y}})) = (\underline{\mathsf{x}} * ((-\mathrm{u}1) * (-\mathrm{u}\underline{\mathsf{y}}))); \mathrm{Equality} \rhd ((\underline{\mathsf{x}} * (-\mathrm{u}1)) * (-\mathrm{u}\underline{\mathsf{y}})) = ((-\mathrm{u}\underline{\mathsf{x}}) * (-\mathrm{u}\underline{\mathsf{y}})) \rhd ((\underline{\mathsf{x}} * (-\mathrm{u}1)) * (-\mathrm{u}\underline{\mathsf{y}})) = (\underline{\mathsf{x}} * ((-\mathrm{u}1) * (-\mathrm{u}\underline{\mathsf{y}}))) \gg ((-\mathrm{u}\underline{\mathsf{x}}) * (-\mathrm{u}\underline{\mathsf{y}})) = (\underline{\mathsf{x}} * ((-\mathrm{u}1) * (-\mathrm{u}\underline{\mathsf{y}}))); \mathrm{eqTransitivity} \rhd ((-\mathrm{u}\underline{\mathsf{x}}) * (-\mathrm{u}\underline{\mathsf{y}})) = (\underline{\mathsf{x}} * ((-\mathrm{u}1) * (-\mathrm{u}\underline{\mathsf{y}}))) \rhd (\underline{\mathsf{x}} * ((-\mathrm{u}1) * (-\mathrm{u}\underline{\mathsf{y}}))) = (\underline{\mathsf{x}} * \underline{\mathsf{y}}) \gg ((-\mathrm{u}\underline{\mathsf{x}}) * (-\mathrm{u}\underline{\mathsf{y}})) = (\underline{\mathsf{x}} * \underline{\mathsf{y}})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PlusTimesMinus} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon (\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}})) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}}))]$

$[\mathrm{PlusTimesMinus} \stackrel{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \mathrm{Times}(-1)\mathrm{Left} \gg ((-\mathrm{u}1) * \underline{\mathsf{y}}) = (-\mathrm{u}\underline{\mathsf{y}}); \mathrm{EqMultiplicationLeft} \rhd ((-\mathrm{u}1) * \underline{\mathsf{y}}) = (-\mathrm{u}\underline{\mathsf{y}}) \gg (\underline{\mathsf{x}} * ((-\mathrm{u}1) * \underline{\mathsf{y}})) = (\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}})); \mathrm{timesAssociativity} \gg ((\underline{\mathsf{x}} * (-\mathrm{u}1)) * \underline{\mathsf{y}}) = (\underline{\mathsf{x}} * ((-\mathrm{u}1) * \underline{\mathsf{y}})); \mathrm{timesCommutativity} \gg (\underline{\mathsf{x}} * (-\mathrm{u}1)) = ((-\mathrm{u}1) * \underline{\mathsf{x}}); \mathrm{eqMultiplication} \rhd (\underline{\mathsf{x}} * (-\mathrm{u}1)) = ((-\mathrm{u}1) * \underline{\mathsf{x}}) \gg ((\underline{\mathsf{x}} * (-\mathrm{u}1)) * \underline{\mathsf{y}}) = (((-\mathrm{u}1) * \underline{\mathsf{x}}) * \underline{\mathsf{y}}); \mathrm{timesAssociativity} \gg (((-\mathrm{u}1) * \underline{\mathsf{x}}) * \underline{\mathsf{y}}) = ((-\mathrm{u}1) * (\underline{\mathsf{x}} * \underline{\mathsf{y}})); \mathrm{Times}(-1)\mathrm{Left} \gg ((-\mathrm{u}1) * (\underline{\mathsf{x}} * \underline{\mathsf{y}})) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})); \mathrm{eqTransitivity4} \rhd ((\underline{\mathsf{x}} * (-\mathrm{u}1)) * \underline{\mathsf{y}}) = (((-\mathrm{u}1) * \underline{\mathsf{x}}) * \underline{\mathsf{y}}) \rhd (((-\mathrm{u}1) * \underline{\mathsf{x}}) * \underline{\mathsf{y}}) = ((-\mathrm{u}1) * (\underline{\mathsf{x}} * \underline{\mathsf{y}})) \rhd ((-\mathrm{u}1) * (\underline{\mathsf{x}} * \underline{\mathsf{y}})) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})) \gg ((\underline{\mathsf{x}} * (-\mathrm{u}1)) * \underline{\mathsf{y}}) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})); \mathrm{Equality} \rhd ((\underline{\mathsf{x}} * (-\mathrm{u}1)) * \underline{\mathsf{y}}) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})) \rhd ((\underline{\mathsf{x}} * (-\mathrm{u}1)) * \underline{\mathsf{y}}) = (\underline{\mathsf{x}} * ((-\mathrm{u}1) * \underline{\mathsf{y}})) \gg (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})) = (\underline{\mathsf{x}} * ((-\mathrm{u}1) * \underline{\mathsf{y}})); \mathrm{eqTransitivity} \rhd (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})) = (\underline{\mathsf{x}} * ((-\mathrm{u}1) * \underline{\mathsf{y}})) \rhd (\underline{\mathsf{x}} * ((-\mathrm{u}1) * \underline{\mathsf{y}})) = (\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}})) \gg (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})) = (\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}})); \mathrm{eqSymmetry} \rhd (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})) = (\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}})) \gg (\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}})) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}}))\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SplitNumericalProduct}(++) \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon 0 <= \underline{\mathsf{x}} \vdash 0 <= \underline{\mathsf{y}} \vdash |(\underline{\mathsf{x}} * \underline{\mathsf{y}})| = (|\underline{\mathsf{x}}| * |\underline{\mathsf{y}}|)]$

$[\mathrm{SplitNumericalProduct}(++) \stackrel{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon 0 <= \underline{\mathsf{x}} \vdash 0 <= \underline{\mathsf{y}} \vdash \mathrm{NonnegativeFactors} \rhd 0 <= \underline{\mathsf{x}} \rhd 0 <= \underline{\mathsf{y}} \gg 0 <= (\underline{\mathsf{x}} * \underline{\mathsf{y}}); \mathrm{NonnegativeNumerical} \rhd 0 <= (\underline{\mathsf{x}} * \underline{\mathsf{y}}) \gg |(\underline{\mathsf{x}} * \underline{\mathsf{y}})| = (\underline{\mathsf{x}} * \underline{\mathsf{y}}); \mathrm{NonnegativeNumerical} \rhd 0 <= \underline{\mathsf{x}} \gg |\underline{\mathsf{x}}| = \underline{\mathsf{x}}; \mathrm{NonnegativeNumerical} \rhd 0 <= \underline{\mathsf{y}} \gg |\underline{\mathsf{y}}| = \underline{\mathsf{y}}; \mathrm{MultiplyEquations} \rhd |\underline{\mathsf{x}}| = \underline{\mathsf{x}} \rhd |\underline{\mathsf{y}}| = \underline{\mathsf{y}} \gg (|\underline{\mathsf{x}}| * |\underline{\mathsf{y}}|) = (\underline{\mathsf{x}} * \underline{\mathsf{y}}); \mathrm{eqSymmetry} \rhd (|\underline{\mathsf{x}}| * |\underline{\mathsf{y}}|) = (\underline{\mathsf{x}} * \underline{\mathsf{y}}) \gg (\underline{\mathsf{x}} * \underline{\mathsf{y}}) = (|\underline{\mathsf{x}}| * |\underline{\mathsf{y}}|); \mathrm{eqTransitivity} \rhd |(\underline{\mathsf{x}} * \underline{\mathsf{y}})| = (\underline{\mathsf{x}} * \underline{\mathsf{y}}) \rhd (\underline{\mathsf{x}} * \underline{\mathsf{y}}) = (|\underline{\mathsf{x}}| * |\underline{\mathsf{y}}|) \gg |(\underline{\mathsf{x}} * \underline{\mathsf{y}})| = (|\underline{\mathsf{x}}| * |\underline{\mathsf{y}}|)\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SplitNumericalProduct}(+-) \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon 0 <= \underline{\mathsf{x}} \vdash \underline{\mathsf{y}} <= 0 \vdash |(\underline{\mathsf{x}} * \underline{\mathsf{y}})| = (|\underline{\mathsf{x}}| * |\underline{\mathsf{y}}|)]$

$[\mathrm{SplitNumericalProduct}(+-) \stackrel{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon 0 <= \underline{\mathsf{x}} \vdash \underline{\mathsf{y}} <= 0 \vdash \mathrm{SignNumerical} \gg |(\underline{\mathsf{x}} * \underline{\mathsf{y}})| = |(-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}}))|; \mathrm{eqSymmetry} \rhd |(\underline{\mathsf{x}} * \underline{\mathsf{y}})| = |(-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}}))| \gg |(-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}}))| = |(\underline{\mathsf{x}} * \underline{\mathsf{y}})|; \mathrm{PlusTimesMinus} \gg (\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}})) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})); \mathrm{SameNumerical} \rhd (\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}})) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})) \gg |(\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}}))| = |(-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}}))|; \mathrm{eqTransitivity} \rhd |(\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}}))| = |(-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}}))| \rhd |(-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}}))| = |(\underline{\mathsf{x}} * \underline{\mathsf{y}})| \gg |(\underline{\mathsf{x}} * (-\mathrm{u}\underline{\mathsf{y}}))| = |(\underline{\mathsf{x}} * \underline{\mathsf{y}})|; \mathrm{SignNumerical} \gg |\underline{\mathsf{y}}| = |(-\mathrm{u}\underline{\mathsf{y}})|; \mathrm{eqSymmetry} \rhd |\underline{\mathsf{y}}| =$

$|(-u\underline{y})| \gg |(-u\underline{y})| = |\underline{y}|; \mathrm{EqMultiplicationLeft} \rhd |(-u\underline{y})| = |\underline{y}| \gg (|\underline{x}| * |(-u\underline{y})|) = (|\underline{x}| * |\underline{y}|); \mathrm{NonpositiveNegated} \rhd \underline{y} <= 0 \gg 0 <= (-u\underline{y}); \mathrm{SplitNumericalProduct}(++) \rhd 0 <= \underline{x} \rhd 0 <= (-u\underline{y}) \gg |(\underline{x} * (-u\underline{y}))| = (|\underline{x}| * |(-u\underline{y})|); \mathrm{eqTransitivity} \rhd |(\underline{x} * (-u\underline{y}))| = (|\underline{x}| * |(-u\underline{y})|) \rhd (|\underline{x}| * |(-u\underline{y})|) = (|\underline{x}| * |\underline{y}|) \gg |(\underline{x} * (-u\underline{y}))| = (|\underline{x}| * |\underline{y}|); \mathrm{Equality} \rhd |(\underline{x} * (-u\underline{y}))| = |(\underline{x} * \underline{y})| \rhd |(\underline{x} * (-u\underline{y}))| = (|\underline{x}| * |\underline{y}|) \gg |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|)\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SplitNumericalProduct} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|)]$

$[\mathrm{SplitNumericalProduct} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon 0 <= \underline{x} \vdash 0 <= \underline{y} \vdash \mathrm{SplitNumericalProduct}(++) \rhd 0 <= \underline{x} \rhd 0 <= \underline{y} \gg |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|); \forall \underline{x} \colon \forall \underline{y} \colon 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash \mathrm{SplitNumericalProduct}(+-) \rhd 0 <= \underline{x} \rhd \underline{y} <= 0 \gg |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|); \forall \underline{x} \colon \forall \underline{y} \colon \underline{x} <= 0 \vdash 0 <= \underline{y} \vdash \mathrm{SplitNumericalProduct}(+-) \rhd 0 <= \underline{y} \rhd \underline{x} <= 0 \gg |(\underline{y} * \underline{x})| = (|\underline{y}| * |\underline{x}|); \mathrm{timesCommutativity} \gg (\underline{x} * \underline{y}) = (\underline{y} * \underline{x}); \mathrm{SameNumerical} \rhd (\underline{x} * \underline{y}) = (\underline{y} * \underline{x}) \gg |(\underline{x} * \underline{y})| = |(\underline{y} * \underline{x})|; \mathrm{timesCommutativity} \gg (|\underline{y}| * |\underline{x}|) = (|\underline{x}| * |\underline{y}|); \mathrm{eqTransitivity4} \rhd |(\underline{x} * \underline{y})| = |(\underline{y} * \underline{x})| \rhd |(\underline{y} * \underline{x})| = (|\underline{y}| * |\underline{x}|) \rhd (|\underline{y}| * |\underline{x}|) = (|\underline{x}| * |\underline{y}|) \gg |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|); \forall \underline{x} \colon \forall \underline{y} \colon \underline{x} <= 0 \vdash \underline{y} <= 0 \vdash \mathrm{NonpositiveNegated} \rhd \underline{x} <= 0 \gg 0 <= (-u\underline{x}); \mathrm{NonpositiveNegated} \rhd \underline{y} <= 0 \gg 0 <= (-u\underline{y}); \mathrm{SplitNumericalProduct}(++) \rhd 0 <= (-u\underline{x}) \rhd 0 <= (-u\underline{y}) \gg |((-u\underline{x}) * (-u\underline{y}))| = (|(-u\underline{x})| * |(-u\underline{y})|); \mathrm{MinusTimesMinus} \gg ((-u\underline{x}) * (-u\underline{y})) = (\underline{x} * \underline{y}); \mathrm{SameNumerical} \rhd ((-u\underline{x}) * (-u\underline{y})) = (\underline{x} * \underline{y}) \gg |((-u\underline{x}) * (-u\underline{y}))| = |(\underline{x} * \underline{y})|; \mathrm{eqSymmetry} \rhd |((-u\underline{x}) * (-u\underline{y}))| = |(\underline{x} * \underline{y})| \gg |(\underline{x} * \underline{y})| = |((-u\underline{x}) * (-u\underline{y}))|; \mathrm{SignNumerical} \gg |\underline{x}| = |(-u\underline{x})|; \mathrm{SignNumerical} \gg |\underline{y}| = |(-u\underline{y})|; \mathrm{MultiplyEquations} \rhd |\underline{x}| = |(-u\underline{x})| \rhd |\underline{y}| = |(-u\underline{y})| \gg (|\underline{x}| * |\underline{y}|) = (|(-u\underline{x})| * |(-u\underline{y})|); \mathrm{eqSymmetry} \rhd (|\underline{x}| * |\underline{y}|) = (|(-u\underline{x})| * |(-u\underline{y})|) \gg (|(-u\underline{x})| * |(-u\underline{y})|) = (|\underline{x}| * |\underline{y}|); \mathrm{eqTransitivity4} \rhd |(\underline{x} * \underline{y})| = |((-u\underline{x}) * (-u\underline{y}))| \rhd |((-u\underline{x}) * (-u\underline{y}))| = (|(-u\underline{x})| * |(-u\underline{y})|) \rhd (|(-u\underline{x})| * |(-u\underline{y})|) = (|\underline{x}| * |\underline{y}|) \gg |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|); \forall \underline{x} \colon \forall \underline{y} \colon \mathrm{Ded} \rhd \forall \underline{x} \colon \forall \underline{y} \colon 0 <= \underline{x} \vdash 0 <= \underline{y} \vdash |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|) \gg 0 <= \underline{x} \Rightarrow 0 <= \underline{y} \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|); \mathrm{Ded} \rhd \forall \underline{x} \colon \forall \underline{y} \colon 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|) \gg 0 <= \underline{x} \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|); \mathrm{Ded} \rhd \forall \underline{x} \colon \forall \underline{y} \colon \underline{x} <= 0 \vdash 0 <= \underline{y} \vdash |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|) \gg \underline{x} <= 0 \Rightarrow 0 <= \underline{y} \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|); \mathrm{Ded} \rhd \forall \underline{x} \colon \forall \underline{y} \colon \underline{x} <= 0 \vdash \underline{y} <= 0 \vdash |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|) \gg \underline{x} <= 0 \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|); \mathrm{FromLeqGeq} \rhd 0 <= \underline{x} \Rightarrow 0 <= \underline{y} \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|) \rhd \underline{x} <= 0 \Rightarrow 0 <= \underline{y} \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|) \gg 0 <= \underline{y} \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|); \mathrm{FromLeqGeq} \rhd 0 <= \underline{x} \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|) \rhd \underline{x} <= 0 \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|) \gg \underline{y} <= 0 \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|); \mathrm{FromLeqGeq} \rhd 0 <= \underline{y} \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|) \rhd \underline{y} <= 0 \Rightarrow |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|) \gg |(\underline{x} * \underline{y})| = (|\underline{x}| * |\underline{y}|)\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{Three2threeFactors} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon \forall \underline{z} \colon ((\underline{x} * \underline{y}) * \underline{z}) = ((\underline{x} * \underline{z}) * \underline{y})]$

$[\mathrm{Three2threeFactors} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x} \colon \forall \underline{y} \colon \forall \underline{z} \colon \mathrm{timesCommutativity} \gg (\underline{y} * \underline{z}) = (\underline{z} * \underline{y}); \mathrm{Three2twoFactors} \rhd (\underline{y} * \underline{z}) = (\underline{z} * \underline{y}) \gg ((\underline{x} * \underline{y}) * \underline{z}) = (\underline{x} * (\underline{z} * \underline{y})); \mathrm{timesAssociativity} \gg ((\underline{x} * \underline{z}) * \underline{y}) = (\underline{x} * (\underline{z} * \underline{y})); \mathrm{eqSymmetry} \rhd ((\underline{x} * \underline{z}) * \underline{y}) = (\underline{x} * (\underline{z} * \underline{y})) \gg (\underline{x} * (\underline{z} * \underline{y})) = ((\underline{x} * \underline{z}) * \underline{y}); \mathrm{eqTransitivity} \rhd ((\underline{x} * \underline{y}) * \underline{z}) = (\underline{x} * (\underline{z} * \underline{y})) \rhd (\underline{x} * (\underline{z} * \underline{y})) = ((\underline{x} * \underline{z}) * \underline{y}) \gg ((\underline{x} * \underline{y}) * \underline{z}) = ((\underline{x} * \underline{z}) * \underline{y})\rceil, \mathrm{p}_0, \mathsf{c})]$

[NonzeroFactors $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x}=0)\mathrm{n} \vdash \dot{\neg}(\underline{y}=0)\mathrm{n} \vdash \dot{\neg}((\underline{x}*\underline{y})=0)\mathrm{n}$]

[NonzeroFactors $\overset{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x}=0)\mathrm{n} \vdash \dot{\neg}(\underline{y}=0)\mathrm{n} \vdash \mathrm{NeqMultiplication} \rhd \dot{\neg}(\underline{y}=0)\mathrm{n} \rhd \dot{\neg}(\underline{x}=0)\mathrm{n} \gg \dot{\neg}((\underline{x}*\underline{y})=(0*\underline{y}))\mathrm{n}; \mathrm{timesCommutativity} \gg (0*\underline{y})=(\underline{y}*0); x*0=0 \gg (\underline{y}*0)=0; \mathrm{eqTransitivity} \rhd (0*\underline{y})=(\underline{y}*0) \rhd (\underline{y}*0)=0 \gg (0*\underline{y})=0; \mathrm{SubNeqRight} \rhd (0*\underline{y})=0 \rhd \dot{\neg}((\underline{x}*\underline{y})=(0*\underline{y}))\mathrm{n} \gg \dot{\neg}((\underline{x}*\underline{y})=0)\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})$]

[PositiveFactors $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <= (\underline{x}*\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(0=(\underline{x}*\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n}$]

[PositiveFactors $\overset{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{Repetition} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{x})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{x}; \mathrm{SecondConjunct} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0=\underline{x})\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot{\neg}(0=\underline{x})\mathrm{n} \gg \dot{\neg}(\underline{x}=0)\mathrm{n}; \mathrm{Repetition} \rhd \dot{\neg}(0 <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(0 <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{y}; \mathrm{SecondConjunct} \rhd \dot{\neg}(0 <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(0=\underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0=\underline{y})\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot{\neg}(0=\underline{y})\mathrm{n} \gg \dot{\neg}(\underline{y}=0)\mathrm{n}; \mathrm{NonnegativeFactors} \rhd 0 <= \underline{x} \rhd 0 <= \underline{y} \gg 0 <= (\underline{x}*\underline{y}); \mathrm{NonzeroFactors} \rhd \dot{\neg}(\underline{x}=0)\mathrm{n} \rhd \dot{\neg}(\underline{y}=0)\mathrm{n} \gg \dot{\neg}((\underline{x}*\underline{y})=0)\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot{\neg}((\underline{x}*\underline{y})=0)\mathrm{n} \gg \dot{\neg}(0=(\underline{x}*\underline{y}))\mathrm{n}; \mathrm{JoinConjuncts} \rhd 0 <= (\underline{x}*\underline{y}) \rhd \dot{\neg}(0=(\underline{x}*\underline{y}))\mathrm{n} \gg \dot{\neg}(0 <= (\underline{x}*\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(0=(\underline{x}*\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd \dot{\neg}(0 <= (\underline{x}*\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(0=(\underline{x}*\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= (\underline{x}*\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(0=(\underline{x}*\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})$]

[SeriesSubsetCP $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{(fx)}\colon \forall\underline{(sy)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in (fx) \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fx)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \underline{(sy)}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}$]

[SeriesSubsetCP $\overset{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(fx)}\colon \forall\underline{(sy)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in (fx) \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fx)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \overline{(s1)} \in \underline{(fx)} \vdash \mathrm{FromSeries} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n; \mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} =$
$\overline{(f4)})n)n; \mathrm{FirstConjunct} \rhd \dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \gg$
$\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n; \mathrm{A4} @ \overline{(s1)} \rhd \forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg \overline{(s1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(s1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n; \mathrm{MP} \rhd \overline{(s1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(s1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \rhd \overline{(s1)} \in \underline{(fx)} \gg$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(s1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n; \forall\underline{(sy)}\colon \dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\overline{(s1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n \vdash$

$\mathrm{FirstConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}\,(\overline{(s1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n \gg \dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in$
$\underline{(sy)})n)n; \mathrm{FirstConjunct} \rhd \dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \gg \overline{(op1)} \in$
$\mathrm{N}; \mathrm{SecondConjunct} \rhd \dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \gg \overline{(op2)} \in$
$\underline{(sy)}; \mathrm{SecondConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}\,(\overline{(s1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n \gg \overline{(s1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\}; \mathrm{eqSymmetry} \rhd \overline{(s1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\} \gg \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\} =$
$\overline{(s1)}; \mathrm{ToCartProd} \rhd \overline{(op1)} \in \mathrm{N} \rhd \overline{(op2)} \in \underline{(sy)} \gg$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\} \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \underline{(sy)}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}; \mathrm{SameMember} \rhd$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\} = \overline{(s1)} \rhd \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\} \in$
$\{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \underline{(sy)}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \gg \overline{(s1)} \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \underline{(sy)}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}; \mathrm{Ded} \rhd \forall\underline{(sy)}\colon \dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}\,(\overline{(s1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n \vdash \overline{(s1)} \in$
$\{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \underline{(sy)}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \gg \dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in$
$\underline{(sy)})n)n \Rightarrow \dot{\neg}\,(\overline{(s1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n \Rightarrow \overline{(s1)} \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \underline{(sy)}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}; \mathrm{TwiceExistMP} \rhd \dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}\,(\overline{(s1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n \Rightarrow$
$\overline{(s1)} \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \underline{(sy)}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \rhd$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}\,(\overline{(s1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg \overline{(s1)} \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \underline{(sy)}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}; \forall\underline{(fx)}\colon \forall\underline{(sy)}\colon \mathrm{Ded} \rhd$
$\forall\underline{(fx)}\colon \forall\underline{(sy)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon\forall_{\mathrm{obj}}\overline{(f2)}\colon\forall_{\mathrm{obj}}\overline{(f3)}\colon\forall_{\mathrm{obj}}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\underline{(fx)}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\underline{(fx)}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\underline{(fx)})n)n)n\vdash\overline{(s1)}\in\underline{(fx)}\vdash\overline{(s1)}\in\{ph\in P(P(Union(\{N,\underline{(sy)}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in\underline{(sy)})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\gg\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon\overline{(r1)}\in$
$\underline{(fx)}\Rightarrow\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in$
$\underline{(sy)})n)n\Rightarrow\dot{\neg}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon\forall_{\mathrm{obj}}\overline{(f2)}\colon\forall_{\mathrm{obj}}\overline{(f3)}\colon\forall_{\mathrm{obj}}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\underline{(fx)}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\underline{(fx)}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\underline{(fx)})n)n)n\Rightarrow\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in\underline{(fx)}\Rightarrow\overline{(s1)}\in\{ph\in P(P(Union(\{N,\underline{(sy)}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in\underline{(sy)})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\};\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon\overline{(r1)}\in$
$\underline{(fx)}\Rightarrow\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in$
$\underline{(sy)})n)n\Rightarrow\dot{\neg}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon\forall_{\mathrm{obj}}\overline{(f2)}\colon\forall_{\mathrm{obj}}\overline{(f3)}\colon\forall_{\mathrm{obj}}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\underline{(fx)}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\underline{(fx)}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\underline{(fx)})n)n)n\vdash MP\rhd\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon\overline{(r1)}\in\underline{(fx)}\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in\underline{(sy)})n)n\Rightarrow$
$\dot{\neg}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon\forall_{\mathrm{obj}}\overline{(f2)}\colon\forall_{\mathrm{obj}}\overline{(f3)}\colon\forall_{\mathrm{obj}}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\underline{(fx)}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\underline{(fx)}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\underline{(fx)})n)n)n\Rightarrow\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in\underline{(fx)}\Rightarrow\overline{(s1)}\in\{ph\in P(P(Union(\{N,\underline{(sy)}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in\underline{(sy)})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\rhd\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon\overline{(r1)}\in$
$\underline{(fx)}\Rightarrow\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in$
$\underline{(sy)})n)n\Rightarrow\dot{\neg}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon\forall_{\mathrm{obj}}\overline{(f2)}\colon\forall_{\mathrm{obj}}\overline{(f3)}\colon\forall_{\mathrm{obj}}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\underline{(fx)}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\underline{(fx)}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\underline{(fx)})n)n)n\gg\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in\underline{(fx)}\Rightarrow\overline{(s1)}\in\{ph\in P(P(Union(\{N,\underline{(sy)}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in\underline{(sy)})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\};\text{Repetition}\rhd$
$\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in\underline{(fx)}\Rightarrow\overline{(s1)}\in\{ph\in P(P(Union(\{N,\underline{(sy)}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in\underline{(sy)})n)n\Rightarrow$

$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in$
$\underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \underline{(\mathrm{sy})}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromCartProd} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in$
$\underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \dot\neg((\underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\underline{(\mathrm{sy})} \in$
$\underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}]$

$[\mathrm{FromCartProd} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in$
$\underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash$
$\mathrm{Repetition} \rhd \{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Sep2Formula} \rhd$
$\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}))) \Rightarrow$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in$
$\underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd$
$\dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}))) \Rightarrow$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in$
$\underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} =$

$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \dot\neg(\dot\neg((\mathrm{op1}$
$\underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \vdash \mathrm{FirstConjunct} \rhd \dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \gg \dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in$
$\underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{op1})} \in$
$\underline{(\mathrm{sx1})}; \mathrm{SecondConjunct} \rhd \dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{op2})} \in$
$\underline{(\mathrm{sy1})}; \mathrm{SecondConjunct} \rhd \dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \gg$
$\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\}; \mathrm{FromOrderedPair}(1) \rhd$
$\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\} \gg \underline{(\mathrm{sx})} =$
$\overline{(\mathrm{op1})}; \mathrm{SameMember}(2) \rhd \underline{(\mathrm{sx})} = \overline{(\mathrm{op1})} \rhd \overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \gg \underline{(\mathrm{sx})} \in$
$\underline{(\mathrm{sx1})}; \mathrm{FromOrderedPair}(2) \rhd \{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\} \gg \underline{(\mathrm{sy})} = \overline{(\mathrm{op2})}; \mathrm{SameMember}(2) \rhd \underline{(\mathrm{sy})} =$
$\overline{(\mathrm{op2})} \rhd \overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})} \gg \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})}; \mathrm{JoinConjuncts} \rhd \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \rhd \underline{(\mathrm{sy})} \in$
$\underline{(\mathrm{sy1})} \gg \dot\neg(\underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}; \mathrm{Ded} \rhd$
$\forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \vdash \dot\neg(\underline{(\mathrm{sx})} \in$
$\underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \gg \dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}; \mathrm{TwiceExistMP} \rhd \dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \rhd$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromCartProd}(1) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$
$\underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})}]$

$[\mathrm{FromCartProd}(1) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\underline{(\mathrm{sy1})}\colon \{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$
$\underline{(\mathrm{sx1})} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \mathrm{FromCartProd} \rhd$
$\{\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sx})}\}, \{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx1})}, \underline{(\mathrm{sy1})}\}))) \mid$

$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \underline{(sx1)} \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy1)})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \gg \dot\neg((\underline{(sx)} \in \underline{(sx1)} \Rightarrow$
$\dot\neg((\underline{(sy)} \in \underline{(sy1)})n)n; \mathrm{FirstConjunct} \rhd \dot\neg((\underline{(sx)} \in \underline{(sx1)} \Rightarrow \dot\neg((\underline{(sy)} \in \underline{(sy1)})n)n \gg$
$\underline{(sx)} \in \underline{(sx1)}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromCartProd}(2) \overset{stmt}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{(sx)}: \forall\underline{(sx1)}: \forall\underline{(sy)}: \forall\underline{(sy1)}: \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in$
$\underline{(sx1)} \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy1)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \vdash \underline{(sy)} \in \underline{(sy1)}]$

$[\mathrm{FromCartProd}(2) \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{(sx)}: \forall\underline{(sx1)}: \forall\underline{(sy)}: \forall\underline{(sy1)}: \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in$
$\underline{(sx1)} \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy1)})n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \vdash \mathrm{FromCartProd} \rhd$
$\{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \underline{(sx1)} \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy1)})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \gg \dot\neg((\underline{(sx)} \in \underline{(sx1)} \Rightarrow$
$\dot\neg((\underline{(sy)} \in \underline{(sy1)})n)n; \mathrm{SecondConjunct} \rhd \dot\neg((\underline{(sx)} \in \underline{(sx1)} \Rightarrow \dot\neg((\underline{(sy)} \in \underline{(sy1)})n)n \gg$
$\underline{(sy)} \in \underline{(sy1)}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ValueType} \overset{stmt}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}: \forall\underline{(fx)}: \forall\underline{(sy)}: \underline{\mathsf{m}} \in \mathrm{N} \vdash \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\underline{(fx)} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg((\overline{(op2)} \in$
$\underline{(sy)})n)n \Rightarrow \dot\neg((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \vdash \underline{(fx)}[\underline{\mathsf{m}}] \in \underline{(sy)}]$

$[\mathrm{ValueType} \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}: \forall\underline{(fx)}: \forall\underline{(sy)}: \underline{\mathsf{m}} \in \mathrm{N} \vdash$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot\neg((\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \vdash \mathrm{MemberOfSeries} \rhd \underline{\mathsf{m}} \in \mathrm{N} \rhd \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$

$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \underline{(fx)}[\underline{m}]\}\} \in$
$\underline{(fx)}; \mathrm{SeriesSubsetCP} \rhd \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \forall_{obj}\overline{(s1)}: \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \{ph \in P(P(\mathrm{Union}(\{N, \underline{(sy)}\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}; \mathrm{FromSubset} \rhd$
$\forall_{obj}\overline{(s1)}: \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \{ph \in P(P(\mathrm{Union}(\{N, \underline{(sy)}\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \rhd \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \underline{(fx)}[\underline{m}]\}\} \in$
$\underline{(fx)} \gg \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \underline{(fx)}[\underline{m}]\}\} \in \{ph \in P(P(\mathrm{Union}(\{N, \underline{(sy)}\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}; \mathrm{FromCartProd}(2) \rhd$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \underline{(fx)}[\underline{m}]\}\} \in \{ph \in P(P(\mathrm{Union}(\{N, \underline{(sy)}\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \gg \underline{(fx)}[\underline{m}] \in$
$\underline{(sy)}\rceil, p_0, \mathsf{c})]$

$[\mathrm{productIsFunction} \stackrel{stmt}{\to} \mathrm{SystemQ} \vdash$
$\forall\underline{(m1)}: \forall\underline{(m2)}: \forall\underline{(fx)}: \forall\underline{(fy)}: \forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2}$
$\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fy)}[\underline{m}])\}\})n)n\} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in$
$N \Rightarrow \dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fy)}[\underline{m}])\}\})n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)}]$

$[\mathrm{productIsFunction} \stackrel{proof}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(m1)}: \forall\underline{(m2)}: \forall\underline{(fx)}: \forall\underline{(fy)}: \overline{(f1)} =$
$\overline{(f3)} \vdash \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}])\}\} \vdash \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{(m2)}, \underline{(m2)}\}, \{\underline{(m2)}, (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}])\}\} \vdash \mathrm{FromOrderedPair}(1) \rhd$
$\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}])\}\} \gg$
$\overline{(f1)} = \underline{(m1)}; \mathrm{eqSymmetry} \rhd \overline{(f1)} = \underline{(m1)} \gg \underline{(m1)} = \overline{(f1)}; \mathrm{FromOrderedPair}(1) \rhd$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{(m2)}, \underline{(m2)}\}, \{\underline{(m2)}, (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}])\}\} \gg$
$\overline{(f3)} = \underline{(m2)}; \mathrm{eqTransitivity4} \rhd \underline{(m1)} = \overline{(f1)} \rhd \overline{(f1)} = \overline{(f3)} \rhd \overline{(f3)} = \underline{(m2)} \gg \underline{(m1)} =$

$\underline{(m2)}; \mathrm{SameSeries} \rhd \underline{(m1)} = \underline{(m2)} \gg \underline{(fx)}[\underline{(m1)}] = \underline{(fx)}[\underline{(m2)}]; \mathrm{SameSeries} \rhd \underline{(m1)} = \underline{(m2)} \gg \underline{(fy)}[\underline{(m1)}] = \underline{(fy)}[\underline{(m2)}]; \mathrm{MultiplyEquations} \rhd \underline{(fx)}[\underline{(m1)}] = \underline{(fx)}[\underline{(m2)}] \rhd \underline{(fy)}[\underline{(m1)}] = \underline{(fy)}[\underline{(m2)}] \gg (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}]) = (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}]); \mathrm{FromOrderedPair}(2) \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}])\}\} \gg \overline{(f2)} = (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}]); \mathrm{FromOrderedPair}(2) \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{(m2)}, \underline{(m2)}\}, \{\underline{(m2)}, (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}])\}\} \gg \overline{(f4)} = (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}]); \mathrm{eqSymmetry} \rhd \overline{(f4)} = (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}]) \gg (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}]) = \overline{(f4)}; \mathrm{eqTransitivity4} \rhd \overline{(f2)} = (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}]) \rhd (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}]) = (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}]) \rhd (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}]) = \overline{(f4)} \gg \overline{(f2)} = \overline{(f4)}; \forall \underline{(m1)}\colon \forall \underline{(m2)}\colon \forall \underline{(fx)}\colon \forall \underline{(fy)}\colon \mathrm{Ded} \rhd \forall \underline{(m1)}\colon \forall \underline{(m2)}\colon \forall \underline{(fx)}\colon \forall \underline{(fy)}\colon \overline{(f1)} = \overline{(f3)} \vdash \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}])\}\} \vdash \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{(m2)}, \underline{(m2)}\}, \{\underline{(m2)}, (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}])\}\} \vdash \overline{(f2)} = \overline{(f4)} \gg \forall_{\mathrm{obj}} \overline{(f1)}\colon \forall_{\mathrm{obj}} \overline{(f2)}\colon \forall_{\mathrm{obj}} \overline{(f3)}\colon \forall_{\mathrm{obj}} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)}\rceil, p_0, \mathsf{c})]$

$[\mathrm{productIsTotal} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{m}}\colon \forall \underline{(fx)}\colon \forall \underline{(fy)}\colon \forall_{\mathrm{obj}} \overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\})n)n]$

$[\mathrm{productIsTotal} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{m}}\colon \forall \underline{(fx)}\colon \forall \underline{(fy)}\colon \overline{(s1)} \in N \vdash \mathrm{SeriesType} \gg \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(f1)}\colon \forall_{\mathrm{obj}} \overline{(f2)}\colon \forall_{\mathrm{obj}} \overline{(f3)}\colon \forall_{\mathrm{obj}} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fx)})n)n)n)n; \mathrm{SeriesType} \gg \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(f1)}\colon \forall_{\mathrm{obj}} \overline{(f2)}\colon \forall_{\mathrm{obj}} \overline{(f3)}\colon \forall_{\mathrm{obj}} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$

$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\underline{(fy)}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{\neg}(\forall_{obj}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\underline{(fy)})n)n)n)n;\mathrm{ValueType}\rhd\overline{(s1)}\in N\rhd\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon\overline{(r1)}\in\underline{(fx)}\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{\neg}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon\forall_{obj}\overline{(f2)}\colon\forall_{obj}\overline{(f3)}\colon\forall_{obj}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\underline{(fx)}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\underline{(fx)}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{\neg}(\forall_{obj}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\underline{(fx)})n)n)n)n\gg\underline{(fx)}[\overline{(s1)}]\in Q;\mathrm{ValueType}\rhd\overline{(s1)}\in N\rhd\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon\overline{(r1)}\in$
$\underline{(fy)}\Rightarrow\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{\neg}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon\forall_{obj}\overline{(f2)}\colon\forall_{obj}\overline{(f3)}\colon\forall_{obj}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\underline{(fy)}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\underline{(fy)}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{\neg}(\forall_{obj}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\underline{(fy)})n)n)n)n\gg\underline{(fy)}[\overline{(s1)}]\in Q;\mathrm{Qclosed}(\mathrm{Multiplication})\rhd\underline{(fx)}[\overline{(s1)}]\in$
$Q\rhd\underline{(fy)}[\overline{(s1)}]\in Q\gg(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\in Q;\mathrm{ToCartProd}\rhd\overline{(s1)}\in$
$N\rhd(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\in Q\gg\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\}\}\in$
$\{ph\in P(P(\mathrm{Union}(\{N,Q\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in$
$N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\};\mathrm{eqReflexivity}\gg$
$\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\}\}=\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*$
$\underline{(fy)}[\overline{(s1)}])\}\};\mathrm{IntroExist}\,@\,\overline{(s1)}\rhd\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\}\}=$
$\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\}\}\gg$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\}\}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(fx)}[\underline{\mathsf{m}}]*\underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n;\mathrm{Formula2Sep}\rhd$
$\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\}\}\in\{ph\in P(P(\mathrm{Union}(\{N,Q\})))\mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\rhd$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\}\}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(fx)}[\underline{\mathsf{m}}]*\underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\gg$
$\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\}\}\in\{ph\in\{ph\in$
$P(P(\mathrm{Union}(\{N,Q\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow$
$\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(fx)}[\underline{\mathsf{m}}]*\underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\};\mathrm{Repetition}\rhd$
$\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\}\}\in\{ph\in\{ph\in$
$P(P(\mathrm{Union}(\{N,Q\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow$
$\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(fx)}[\underline{\mathsf{m}}]*\underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\}\gg$
$\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},(\underline{(fx)}[\overline{(s1)}]*\underline{(fy)}[\overline{(s1)}])\}\}\in\{ph\in\{ph\in$

$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})n)n\}; \mathrm{IntroExist}\ @(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] * \underline{(\mathrm{fy})}[\overline{(\mathrm{s1})}]) \rhd$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, (\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] * \underline{(\mathrm{fy})}[\overline{(\mathrm{s1})}])\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})n)n\} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})n)n\})n)n; \forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \mathrm{Ded} \rhd$
$\forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \overline{(\mathrm{s1})} \in N \vdash \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})n)n\})n)n \gg \forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in N \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})n)n\})n)n], p_0, \mathsf{c})]$

$[\mathrm{ProductIsRationalSeries} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{m1})}\colon \forall \underline{(\mathrm{m2})}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})n)n\})n)n)n)n]$

$[\mathrm{ProductIsRationalSeries} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{m1})}\colon \forall \underline{(\mathrm{m2})}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \mathrm{CPseparationIsRelation} \gg \forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{productIsFunction} \gg$
$\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} =$
$\overline{(\mathrm{f4})}; \mathrm{productIsTotal} \gg \forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}; \mathrm{ToSeries} \rhd \forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd$
$\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} =$
$\overline{(\mathrm{f4})} \rhd \forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow \dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow$
$\dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow \dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg\,(\forall_{obj}\overline{(s2)}\colon \dot\neg\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow$
$\dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\})n)n)n)n\rceil, p_0, \mathsf{c})]$

$[TimesF \overset{stmt}{\rightarrow} SystemQ \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \lambda\mathsf{c}.TypeNat0(\lceil\underline{\mathsf{m}}\rceil) \Vdash$
$\lambda\mathsf{c}.Typeseries0(\lceil\underline{(fx)}\rceil, \lceil Q\rceil) \Vdash \lambda\mathsf{c}.Typeseries0(\lceil\underline{(fy)}\rceil, \lceil Q\rceil) \Vdash \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow$
$\dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] =$
$(\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])]$

$[TimesF \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil SystemQ \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \lambda\mathsf{c}.TypeNat0(\lceil\underline{\mathsf{m}}\rceil) \Vdash$
$\lambda\mathsf{c}.Typeseries0(\lceil\underline{(fx)}\rceil, \lceil Q\rceil) \Vdash \lambda\mathsf{c}.Typeseries0(\lceil\underline{(fy)}\rceil, \lceil Q\rceil) \Vdash NatType \gg \underline{\mathsf{m}} \in$
$N; SeriesType \gg \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow \dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg\,(\forall_{obj}\overline{(s2)}\colon \dot\neg\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n; SeriesType \gg \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow \dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg\,(\forall_{obj}\overline{(s2)}\colon \dot\neg\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})n)n)n)n; ProductIsRationalSeries \gg \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow$
$\dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow$

$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\})n)n)n)n; MemberOfSeries \triangleright \underline{\mathsf{m}} \in$
$N \triangleright \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\})n)n)n)n \gg$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\}; ValueType \triangleright \underline{\mathsf{m}} \in N \triangleright$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$

∸((op2) ∈ Q)n)n ⇒ ∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⇒
∸($\forall_{\mathrm{obj}}$(f1): $\forall_{\mathrm{obj}}$(f2): $\forall_{\mathrm{obj}}$(f3): $\forall_{\mathrm{obj}}$(f4): {{(f1), (f1)}, {(f1), (f2)}} ∈ (fx) ⇒
{{(f3), (f3)}, {(f3), (f4)}} ∈ (fx) ⇒ (f1) = (f3) ⇒ (f2) = (f4))n)n ⇒
∸($\forall_{\mathrm{obj}}$(s1): (s1) ∈ N ⇒ ∸($\forall_{\mathrm{obj}}$(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈
(fx))n)n)n)n ≫ (fx)[m] ∈ Q; ValueType ⊳ m ∈ N ⊳ ∸(∸($\forall_{\mathrm{obj}}$(r1): (r1) ∈ (fy) ⇒
∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⇒
∸($\forall_{\mathrm{obj}}$(f1): $\forall_{\mathrm{obj}}$(f2): $\forall_{\mathrm{obj}}$(f3): $\forall_{\mathrm{obj}}$(f4): {{(f1), (f1)}, {(f1), (f2)}} ∈ (fy) ⇒
{{(f3), (f3)}, {(f3), (f4)}} ∈ (fy) ⇒ (f1) = (f3) ⇒ (f2) = (f4))n)n ⇒
∸($\forall_{\mathrm{obj}}$(s1): (s1) ∈ N ⇒ ∸($\forall_{\mathrm{obj}}$(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈
(fy))n)n)n)n ≫ (fy)[m] ∈ Q; Qclosed(Multiplication) ⊳ (fx)[m] ∈ Q ⊳ (fy)[m] ∈
Q ≫ ((fx)[m] ∗ (fy)[m]) ∈ Q; ToCartProd ⊳ m ∈ N ⊳ ((fx)[m] ∗ (fy)[m]) ∈ Q ≫
{{m, m}, {m, ((fx)[m] ∗ (fy)[m])}} ∈ {ph ∈ P(P(Union({N, Q}))) |
∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a$_{\mathrm{Ph}}$ = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n}; eqReflexivity ≫
{{m, m}, {m, ((fx)[m] ∗ (fy)[m])}} = {{m, m}, {m, ((fx)[m] ∗
(fy)[m])}}; IntroExist @ m ⊳ {{m, m}, {m, ((fx)[m] ∗ (fy)[m])}} =
{{m, m}, {m, ((fx)[m] ∗ (fy)[m])}} ≫
∸($\forall_{\mathrm{obj}}$m: ∸({{m, m}, {m, ((fx)[m] ∗ (fy)[m])}} = {{m, m}, {m, ((fx)[m] ∗
(fy)[m])}})n)n; Formula2Sep ⊳ {{m, m}, {m, ((fx)[m] ∗ (fy)[m])}} ∈ {ph ∈
P(P(Union({N, Q}))) | ∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a$_{\mathrm{Ph}}$ = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} ⊳
∸($\forall_{\mathrm{obj}}$m: ∸({{m, m}, {m, ((fx)[m] ∗ (fy)[m])}} = {{m, m}, {m, ((fx)[m] ∗
(fy)[m])}})n)n ≫ {{m, m}, {m, ((fx)[m] ∗ (fy)[m])}} ∈ {ph ∈ {ph ∈
P(P(Union({N, Q}))) | ∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a$_{\mathrm{Ph}}$ = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸($\forall_{\mathrm{obj}}$m: ∸(e$_{\mathrm{Ph}}$ = {{m, m}, {m, ((fx)[m] ∗ (fy)[m])}})n)n}; eqReflexivity ≫ m =
m; UniqueMember ⊳ ∸(∸($\forall_{\mathrm{obj}}$(r1): (r1) ∈ {ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a$_{\mathrm{Ph}}$ = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{\mathrm{obj}}$m: ∸(e$_{\mathrm{Ph}}$ =
{{m, m}, {m, ((fx)[m] ∗ (fy)[m])}})n)n} ⇒
∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⇒
∸($\forall_{\mathrm{obj}}$(f1): $\forall_{\mathrm{obj}}$(f2): $\forall_{\mathrm{obj}}$(f3): $\forall_{\mathrm{obj}}$(f4): {{(f1), (f1)}, {(f1), (f2)}} ∈ {ph ∈ {ph ∈
P(P(Union({N, Q}))) | ∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a$_{\mathrm{Ph}}$ = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸($\forall_{\mathrm{obj}}$m: ∸(e$_{\mathrm{Ph}}$ = {{m, m}, {m, ((fx)[m] ∗ (fy)[m])}})n)n} ⇒
{{(f3), (f3)}, {(f3), (f4)}} ∈ {ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a$_{\mathrm{Ph}}$ = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{\mathrm{obj}}$m: ∸(e$_{\mathrm{Ph}}$ =
{{m, m}, {m, ((fx)[m] ∗ (fy)[m])}})n)n} ⇒ (f1) = (f3) ⇒ (f2) = (f4))n)n ⇒

$\dot{-}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} \rhd$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} \rhd \underline{\mathsf{m}} = \underline{\mathsf{m}} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] =$
$(\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{TimesF}(\mathrm{Sym}) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}]) = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]]$

$[\mathrm{TimesF}(\mathrm{Sym}) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \mathrm{TimesF} \gg \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in$
$\mathrm{N} \Rightarrow \dot{-}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] =$
$(\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}]); \mathrm{eqSymmetry} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}]) \gg$
$(\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}]) = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{sameOrderedPair} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(sx)}\colon \forall\underline{(sx1)}\colon \forall\underline{(sy)}\colon \forall\underline{(sy1)}\colon \underline{(sx)} = \underline{(sx1)} \vdash$
$\underline{(sy)} = \underline{(sy1)} \vdash \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} = \{\{\underline{(sx1)}, \underline{(sx1)}\}, \{\underline{(sx1)}, \underline{(sy1)}\}\}]$

$[\mathrm{sameOrderedPair} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(sx)}\colon \forall\underline{(sx1)}\colon \forall\underline{(sy)}\colon \forall\underline{(sy1)}\colon \underline{(sx)} =$
$\underline{(sx1)} \vdash \underline{(sy)} = \underline{(sy1)} \vdash \mathrm{SameSingleton} \rhd \underline{(sx)} = \underline{(sx1)} \gg \{\underline{(sx)}, \underline{(sx)}\} =$
$\{\underline{(sx1)}, \underline{(sx1)}\}; \mathrm{SamePair} \rhd \underline{(sx)} = \underline{(sx1)} \rhd \underline{(sy)} = \underline{(sy1)} \gg \{\underline{(sx)}, \underline{(sy)}\} =$

$\{\underline{(sx1)}, \underline{(sy1)}\}; \text{SamePair} \rhd \{\underline{(sx)}, \underline{(sx)}\} = \{\underline{(sx1)}, \underline{(sx1)}\} \rhd \{\underline{(sx)}, \underline{(sy)}\} = \{\underline{(sx1)}, \underline{(sy1)}\} \gg \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} = \{\{\underline{(sx1)}, \underline{(sx1)}\}, \{\underline{(sx1)}, \underline{(sy1)}\}\}; \text{Repetition} \rhd \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} = \{\{\underline{(sx1)}, \underline{(sx1)}\}, \{\underline{(sx1)}, \underline{(sy1)}\}\} \gg \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} = \{\{\underline{(sx1)}, \underline{(sx1)}\}, \{\underline{(sx1)}, \underline{(sy1)}\}\}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\text{InSeriesHelper} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall \underline{\mathsf{m}}\colon \forall \underline{(fx)}\colon \forall \underline{(sx)}\colon \forall \underline{(sy)}\colon \underline{(sy)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(f1)}\colon \forall_{obj} \overline{(f2)}\colon \forall_{obj} \overline{(f3)}\colon \forall_{obj} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fx)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{obj} \underline{\mathsf{m}}\colon \dot{\neg}(\underline{(sy)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n}]$

$[\text{InSeriesHelper} \stackrel{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{\mathsf{m}}\colon \forall \underline{(fx)}\colon \forall \underline{(sx)}\colon \forall \underline{(sy)}\colon \underline{(sy)} \in \underline{(fx)} \vdash \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(f1)}\colon \forall_{obj} \overline{(f2)}\colon \forall_{obj} \overline{(f3)}\colon \forall_{obj} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fx)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n} \vdash \text{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})\mathrm{n})\mathrm{n}; \text{FirstConjunct} \rhd \dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})\mathrm{n})\mathrm{n} \gg \overline{(op1)} \in \mathrm{N}; \text{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n} \gg \underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\}; \text{SameMember} \rhd \underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\} \rhd \underline{(sy)} \in \underline{(fx)} \gg \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\} \in \underline{(fx)}; \text{MemberOfSeries} \rhd \overline{(op1)} \in \mathrm{N} \rhd \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(f1)}\colon \forall_{obj} \overline{(f2)}\colon \forall_{obj} \overline{(f3)}\colon \forall_{obj} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{obj} \overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fx)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \underline{(fx)}[\overline{(op1)}]\}\} \in \underline{(fx)}; \text{eqReflexivity} \gg$

$$\overline{(\mathrm{op1})} = \overline{(\mathrm{op1})}; \mathrm{UniqueMember} \rhd \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\} \in \underline{(\mathrm{fx})} \rhd \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \underline{(\mathrm{fx})}[\overline{(\mathrm{op1})}]\}\} \in \underline{(\mathrm{fx})} \rhd \overline{(\mathrm{op1})} = \overline{(\mathrm{op1})} \gg \overline{(\mathrm{op2})} = \underline{(\mathrm{fx})}[\overline{(\mathrm{op1})}]; \mathrm{sameOrderedPair} \rhd \overline{(\mathrm{op1})} = \overline{(\mathrm{op1})} \rhd \overline{(\mathrm{op2})} = \underline{(\mathrm{fx})}[\overline{(\mathrm{op1})}] \gg \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \underline{(\mathrm{fx})}[\overline{(\mathrm{op1})}]\}\}; \mathrm{eqTransitivity} \rhd \underline{(\mathrm{sy})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\} \rhd \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \underline{(\mathrm{fx})}[\overline{(\mathrm{op1})}]\}\} \gg \underline{(\mathrm{sy})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \underline{(\mathrm{fx})}[\overline{(\mathrm{op1})}]\}\}; \mathrm{IntroExist} \mathbin{@} \overline{(\mathrm{op1})} \rhd \underline{(\mathrm{sy})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \underline{(\mathrm{fx})}[\overline{(\mathrm{op1})}]\}\} \gg \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\underline{(\mathrm{sy})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n}; \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sy})}\colon \mathrm{Ded} \rhd$$

$$\forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sy})}\colon \underline{(\mathrm{sy})} \in \underline{(\mathrm{fx})} \vdash \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{(\mathrm{sy})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \vdash \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\underline{(\mathrm{sy})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{sy})} \in \underline{(\mathrm{fx})} \Rightarrow \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{(\mathrm{sy})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\underline{(\mathrm{sy})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$$

$$[\mathrm{InSeries} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sy})}\colon \lambda\mathsf{c}.\mathrm{Typeseries0}(\lceil\underline{(\mathrm{fx})}\rceil, \lceil\underline{(\mathrm{sx})}\rceil) \Vdash \underline{(\mathrm{sy})} \in \underline{(\mathrm{fx})} \vdash \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\underline{(\mathrm{sy})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n}]$$

$$[\mathrm{InSeries} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sy})}\colon \lambda\mathsf{c}.\mathrm{Typeseries0}(\lceil\underline{(\mathrm{fx})}\rceil, \lceil\underline{(\mathrm{sx})}\rceil) \Vdash \underline{(\mathrm{sy})} \in \underline{(\mathrm{fx})} \vdash \mathrm{SeriesType} \unrhd \lambda\mathsf{c}.\mathrm{Typeseries0}(\lceil\underline{(\mathrm{fx})}\rceil, \lceil\underline{(\mathrm{sx})}\rceil) \gg \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$$

$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n; \mathrm{Repetition} \rhd \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n; \mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} =$
$\overline{(f4)})n)n; \mathrm{Repetition} \rhd \dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \gg$
$\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} =$

$\overline{(f4)})n)n;\mathrm{FirstConjunct} \rhd \dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \gg$
$\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n;\mathrm{Repetition} \rhd \forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in$
$\underline{(sx)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg$
$\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n;\mathrm{A4}\,@\,\underline{(sy)} \rhd \forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg \underline{(sy)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n;\mathrm{MP} \rhd \underline{(sy)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \rhd \underline{(sy)} \in \underline{(fx)} \gg$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n;\mathrm{Repetition} \rhd$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n;\mathrm{InSeriesHelper} \gg$
$\underline{(sy)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow \dot{\neg}(\underline{(sy)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n \Rightarrow \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\underline{(sy)} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n;\mathrm{MP2} \rhd \underline{(sy)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow \dot{\neg}(\underline{(sy)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n \Rightarrow \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\underline{(sy)} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \rhd \underline{(sy)} \in \underline{(fx)} \rhd \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow \dot{\neg}(\underline{(sy)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n \Rightarrow \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\underline{(sy)} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n; \mathrm{TwiceExistMP} \rhd \dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in$
$\underline{(sx)})n)n \Rightarrow \dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\underline{(sy)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \rhd$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot{\neg}(\underline{(sy)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\underline{(sy)} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{To} = \mathrm{f(Subset)(Helper)} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\underline{(fy)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})n)n)n)n \Rightarrow \forall_{obj}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \Rightarrow \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \Rightarrow$
$\overline{(s1)} \in \underline{(fy)}]$

$[\mathrm{To} = \mathrm{f(Subset)(Helper)} \stackrel{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})n)n)n)n \vdash \forall_{obj}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \vdash \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \vdash$
$\mathrm{eqReflexivity} \gg \underline{\mathsf{m}} = \underline{\mathsf{m}}; \mathrm{A4} @ \underline{\mathsf{m}} \rhd \forall_{obj}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \gg \underline{(fx)}[\underline{\mathsf{m}}] =$
$\underline{(fy)}[\underline{\mathsf{m}}]; \mathrm{sameOrderedPair} \rhd \underline{\mathsf{m}} = \underline{\mathsf{m}} \rhd \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \gg$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\}; \mathrm{eqTransitivity} \rhd \overline{(s1)} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\} \gg$
$\overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\}; \mathrm{eqSymmetry} \rhd \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\} \gg$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fy})}[\underline{\mathsf{m}}]\}\} = \overline{(\mathrm{s1})}; \mathrm{NatType} \gg \underline{\mathsf{m}} \in \mathrm{N}; \mathrm{MemberOfSeries} \rhd \underline{\mathsf{m}} \in \mathrm{N} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fy})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fy})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fy})}[\underline{\mathsf{m}}]\}\} \in \underline{(\mathrm{fy})}; \mathrm{SameMember} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fy})}[\underline{\mathsf{m}}]\}\} = \overline{(\mathrm{s1})} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fy})}[\underline{\mathsf{m}}]\}\} \in \underline{(\mathrm{fy})} \gg \overline{(\mathrm{s1})} \in \underline{(\mathrm{fy})}; \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \mathrm{Ded} \rhd \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fy})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fy})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] \vdash \overline{(\mathrm{s1})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\} \vdash \overline{(\mathrm{s1})} \in \underline{(\mathrm{fy})} \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fy})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fy})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] \Rightarrow \overline{(\mathrm{s1})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\} \Rightarrow \overline{(\mathrm{s1})} \in \underline{(\mathrm{fy})}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{To} = \mathrm{f}(\mathrm{Subset}) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \lambda\mathsf{c}.\mathrm{Typeseries0}(\lceil\underline{(\mathrm{fx})}\rceil, \lceil\mathrm{Q}\rceil) \Vdash \lambda\mathsf{c}.\mathrm{Typeseries0}(\lceil\underline{(\mathrm{fy})}\rceil, \lceil\mathrm{Q}\rceil) \Vdash \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] \vdash \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{s1})} \in \underline{(\mathrm{fy})}]$

$[\mathrm{To} = \mathrm{f}(\mathrm{Subset}) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fy})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$

$\underline{(fy)})n)n)n \vdash \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \vdash \overline{(s1)} \in \underline{(fx)} \vdash \mathrm{InSeries} \gg$

$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n; \mathrm{To} = \mathrm{f(Subset)(Helper)} \gg$

$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$

$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$

$\underline{(fy)})n)n)n)n \Rightarrow \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \Rightarrow \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \Rightarrow$

$\overline{(s1)} \in \underline{(fy)}; \mathrm{MP2} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$

$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$

$\underline{(fy)})n)n)n)n \Rightarrow \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \Rightarrow \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \Rightarrow$

$\overline{(s1)} \in \underline{(fy)} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$

$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$

$\underline{(fy)})n)n)n)n \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \gg \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \Rightarrow$

$\overline{(s1)} \in \underline{(fy)}; \mathrm{ExistMP} \rhd \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \Rightarrow \overline{(s1)} \in$

$\underline{(fy)} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \gg \overline{(s1)} \in$

$\underline{(fy)}; \forall\underline{\mathsf{m}}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \mathrm{Ded} \rhd \forall\underline{\mathsf{m}}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$

$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$

$\underline{(fx)})n)n)n)n \vdash \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$

$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$

$\underline{(fy)})n)n)n)n \vdash \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \vdash \overline{(s1)} \in \underline{(fx)} \vdash \overline{(s1)} \in \underline{(fy)} \gg$

$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$

$\dot{\neg}\,((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})n)n)n)n \Rightarrow \forall_{obj}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \Rightarrow \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in$
$\underline{(fy)}; \lambda\mathsf{c}.\mathrm{Typeseries0}(\lceil\underline{(fx)}\rceil, \lceil Q\rceil) \Vdash \lambda\mathsf{c}.\mathrm{Typeseries0}(\lceil\underline{(fy)}\rceil, \lceil Q\rceil) \Vdash$
$\forall_{obj}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \vdash \mathrm{SeriesType} \unrhd \lambda\mathsf{c}.\mathrm{Typeseries0}(\lceil\underline{(fx)}\rceil, \lceil Q\rceil) \gg$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n; \mathrm{SeriesType} \unrhd \lambda\mathsf{c}.\mathrm{Typeseries0}(\lceil\underline{(fy)}\rceil, \lceil Q\rceil) \gg \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\underline{(fy)} \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})n)n)n)n; \mathrm{MP3} \rhd \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})n)n)n)n \Rightarrow \forall_{obj}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \Rightarrow \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \underline{(fy)} \rhd$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}: \forall_{\mathrm{obj}}\overline{(f2)}: \forall_{\mathrm{obj}}\overline{(f3)}: \forall_{\mathrm{obj}}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fx)})n)n)n)n \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}: \overline{(r1)} \in \underline{(fy)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}: \forall_{\mathrm{obj}}\overline{(f2)}: \forall_{\mathrm{obj}}\overline{(f3)}: \forall_{\mathrm{obj}}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \underline{(fy)})n)n)n)n \rhd \forall_{\mathrm{obj}}\underline{m}: \underline{(fx)}[\underline{m}] = \underline{(fy)}[\underline{m}] \gg \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \underline{(fy)}; \mathrm{Gen} \rhd \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \underline{(fy)} \gg \forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \underline{(fy)}; \mathrm{Repetition} \rhd \forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \underline{(fy)} \gg \forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \underline{(fy)}\rceil, p_0, c)]$

$[\mathrm{To} = f \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{m}: \forall\underline{(fx)}: \forall\underline{(fy)}: \lambda c.\mathrm{Typeseries0}(\lceil\underline{(fx)}\rceil, \lceil Q\rceil) \Vdash \lambda c.\mathrm{Typeseries0}(\lceil\underline{(fy)}\rceil, \lceil Q\rceil) \Vdash \forall_{\mathrm{obj}}\underline{m}: \underline{(fx)}[\underline{m}] = \underline{(fy)}[\underline{m}] \vdash \underline{(fx)} = \underline{(fy)}]$

$[\mathrm{To} = f \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{m}: \forall\underline{(fx)}: \forall\underline{(fy)}: \lambda c.\mathrm{Typeseries0}(\lceil\underline{(fx)}\rceil, \lceil Q\rceil) \Vdash \lambda c.\mathrm{Typeseries0}(\lceil\underline{(fy)}\rceil, \lceil Q\rceil) \Vdash \forall_{\mathrm{obj}}\underline{m}: \underline{(fx)}[\underline{m}] = \underline{(fy)}[\underline{m}] \vdash A4 @ \underline{m} \rhd \forall_{\mathrm{obj}}\underline{m}: \underline{(fx)}[\underline{m}] = \underline{(fy)}[\underline{m}] \gg \underline{(fx)}[\underline{m}] = \underline{(fy)}[\underline{m}]; \mathrm{eqSymmetry} \rhd \underline{(fx)}[\underline{m}] = \underline{(fy)}[\underline{m}] \gg \underline{(fy)}[\underline{m}] = \underline{(fx)}[\underline{m}]; \mathrm{Gen} \rhd \underline{(fy)}[\underline{m}] = \underline{(fx)}[\underline{m}] \gg \forall_{\mathrm{obj}}\underline{m}: \underline{(fy)}[\underline{m}] = \underline{(fx)}[\underline{m}]; \mathrm{To} = f(\mathrm{Subset}) \unrhd \lambda c.\mathrm{Typeseries0}(\lceil\underline{(fx)}\rceil, \lceil Q\rceil) \unrhd \lambda c.\mathrm{Typeseries0}(\lceil\underline{(fy)}\rceil, \lceil Q\rceil) \rhd \forall_{\mathrm{obj}}\underline{m}: \underline{(fx)}[\underline{m}] = \underline{(fy)}[\underline{m}] \gg \forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \underline{(fy)}; \mathrm{To} = f(\mathrm{Subset}) \unrhd \lambda c.\mathrm{Typeseries0}(\lceil\underline{(fy)}\rceil, \lceil Q\rceil) \unrhd \lambda c.\mathrm{Typeseries0}(\lceil\underline{(fx)}\rceil, \lceil Q\rceil) \rhd \forall_{\mathrm{obj}}\underline{m}: \underline{(fy)}[\underline{m}] = \underline{(fx)}[\underline{m}] \gg \forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in \underline{(fy)} \Rightarrow \overline{(s1)} \in \underline{(fx)}; \mathrm{ToSetEquality} \rhd \forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \underline{(fy)} \rhd \forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in \underline{(fy)} \Rightarrow \overline{(s1)} \in \underline{(fx)} \gg \underline{(fx)} = \underline{(fy)}\rceil, p_0, c)]$

$[\mathrm{Tester1} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{m}: \forall\underline{(fx)}: \forall\underline{(fy)}: \forall_{\mathrm{obj}}\underline{m}: \underline{(fx)}[\underline{m}] = \underline{(fy)}[\underline{m}] \vdash \underline{(fx)} = \underline{(fy)}]$

$[\mathrm{Tester1} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{m}: \forall\underline{(fx)}: \forall\underline{(fy)}: \forall_{\mathrm{obj}}\underline{m}: \underline{(fx)}[\underline{m}] = \underline{(fy)}[\underline{m}] \vdash \mathrm{To} = f \rhd \forall_{\mathrm{obj}}\underline{m}: \underline{(fx)}[\underline{m}] = \underline{(fy)}[\underline{m}] \gg \underline{(fx)} = \underline{(fy)}\rceil, p_0, c)]$

$[\mathrm{reciprocalToLeft(Less)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}: \forall\underline{y}: \forall\underline{z}: \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})n)n)n \vdash \dot{\neg}(\underline{x} <= (\underline{y} * \mathrm{rec}\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} * \mathrm{rec}\underline{z}))n)n)n \vdash \dot{\neg}((\underline{x} * \underline{z}) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = \underline{y})n)n)n]$

$[\mathrm{reciprocalToLeft(Less)} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}: \forall\underline{y}: \forall\underline{z}: \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})n)n)n \vdash \dot{\neg}(\underline{x} <= (\underline{y} * \mathrm{rec}\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} * \mathrm{rec}\underline{z}))n)n)n \vdash \mathrm{LessMultiplication} \rhd \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})n)n)n \rhd \dot{\neg}(\underline{x} <= (\underline{y} * \mathrm{rec}\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} * \mathrm{rec}\underline{z}))n)n)n \gg \dot{\neg}((\underline{x} * \underline{z}) <= ((\underline{y} * \mathrm{rec}\underline{z}) * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = ((\underline{y} * \mathrm{rec}\underline{z}) * \underline{z}))n)n)n; \mathrm{Three2threeFactors} \gg ((\underline{y} * \mathrm{rec}\underline{z}) * \underline{z}) = ((\underline{y} * \underline{z}) * \mathrm{rec}\underline{z}); \mathrm{PositiveNonzero} \rhd \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})n)n)n \gg \dot{\neg}(\underline{z} = 0)n; x = x * y * (1/y) \rhd \dot{\neg}(\underline{z} = 0)n \gg \underline{y} = ((\underline{y} * \underline{z}) * \mathrm{rec}\underline{z}); \mathrm{eqSymmetry} \rhd \underline{y} = ((\underline{y} * \underline{z}) * \mathrm{rec}\underline{z}) \gg ((\underline{y} * \underline{z}) * \mathrm{rec}\underline{z}) = \underline{y}; \mathrm{eqTransitivity} \rhd ((\underline{y} * \mathrm{rec}\underline{z}) * \underline{z}) = ((\underline{y} * \underline{z}) * \mathrm{rec}\underline{z}) \rhd ((\underline{y} * \underline{z}) * \mathrm{rec}\underline{z}) = \underline{y} \gg ((\underline{y} * \mathrm{rec}\underline{z}) * \underline{z}) = \underline{y}; \mathrm{SubLessRight} \rhd ((\underline{y} * \mathrm{rec}\underline{z}) * \underline{z}) = \underline{y} \rhd \dot{\neg}((\underline{x} * \underline{z}) <= ((\underline{y} * \mathrm{rec}\underline{z}) * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) =$

$((\underline{y} * \mathrm{rec}\underline{z}) * \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{x} * \underline{z}) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToNumericalLess} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}((-\mathrm{u}\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{ToNumericalLess} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash 0 <= \underline{x} \vdash \mathrm{NonnegativeNumerical} \rhd 0 <= \underline{x} \gg |\underline{x}| = \underline{x}; \mathrm{eqSymmetry} \rhd |\underline{x}| = \underline{x} \gg \underline{x} = |\underline{x}|; \mathrm{SubLessLeft} \rhd \underline{x} = |\underline{x}| \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}((-\mathrm{u}\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{x} <= 0 \vdash \mathrm{LessNegated} \rhd \dot{\neg}((-\mathrm{u}\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}\underline{x}) <= (-\mathrm{u}(-\mathrm{u}\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{x}) = (-\mathrm{u}(-\mathrm{u}\underline{y})))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{lemma\ nonpositiveNumerical} \rhd \underline{x} <= 0 \gg |\underline{x}| = (-\mathrm{u}\underline{x}); \mathrm{eqSymmetry} \rhd |\underline{x}| = (-\mathrm{u}\underline{x}) \gg (-\mathrm{u}\underline{x}) = |\underline{x}|; \mathrm{SubLessLeft} \rhd (-\mathrm{u}\underline{x}) = |\underline{x}| \rhd \dot{\neg}((-\mathrm{u}\underline{x}) <= (-\mathrm{u}(-\mathrm{u}\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{x}) = (-\mathrm{u}(-\mathrm{u}\underline{y})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(|\underline{x}| <= (-\mathrm{u}(-\mathrm{u}\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = (-\mathrm{u}(-\mathrm{u}\underline{y})))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{DoubleMinus} \gg (-\mathrm{u}(-\mathrm{u}\underline{y})) = \underline{y}; \mathrm{SubLessRight} \rhd (-\mathrm{u}(-\mathrm{u}\underline{y})) = \underline{y} \rhd \dot{\neg}(|\underline{x}| <= (-\mathrm{u}(-\mathrm{u}\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = (-\mathrm{u}(-\mathrm{u}\underline{y})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{x}\colon \forall\underline{y}\colon \mathrm{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash 0 <= \underline{x} \vdash \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow 0 <= \underline{x} \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}((-\mathrm{u}\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{x} <= 0 \vdash \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{x} <= 0 \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \dot{\neg}((-\mathrm{u}\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{MP} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow 0 <= \underline{x} \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{x} \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MP} \rhd \dot{\neg}((-\mathrm{u}\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{x} <= 0 \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}((-\mathrm{u}\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{y}) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{x} <= 0 \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FromLeqGeq} \rhd 0 <= \underline{x} \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \underline{x} <= 0 \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{x} <= |\mathrm{x}| \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \underline{x} <= |\underline{x}|]$

$[\mathrm{x} <= |\mathrm{x}| \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon 0 <= \underline{x} \vdash \mathrm{NonnegativeNumerical} \gg |\underline{x}| = \underline{x}; \mathrm{eqSymmetry} \rhd |\underline{x}| = \underline{x} \gg \underline{x} = |\underline{x}|; \mathrm{eqLeq} \rhd \underline{x} = |\underline{x}| \gg \underline{x} <= |\underline{x}|; \forall\underline{x}\colon \underline{x} <= 0 \vdash 0 <= |\mathrm{x}| \gg 0 <= |\underline{x}|; \mathrm{leqTransitivity} \rhd \underline{x} <= 0 \rhd 0 <= |\underline{x}| \gg \underline{x} <= |\underline{x}|; \forall\underline{x}\colon \mathrm{Ded} \rhd \forall\underline{x}\colon 0 <= \underline{x} \vdash \underline{x} <= |\underline{x}| \gg 0 <= \underline{x} \Rightarrow \underline{x} <= |\underline{x}|; \mathrm{Ded} \rhd \forall\underline{x}\colon \underline{x} <= 0 \vdash \underline{x} <= |\underline{x}| \gg \underline{x} <= 0 \Rightarrow \underline{x} <= |\underline{x}|; \mathrm{FromLeqGeq} \rhd 0 <= \underline{x} \Rightarrow \underline{x} <= |\underline{x}| \rhd \underline{x} <= 0 \Rightarrow \underline{x} <= |\underline{x}| \gg \underline{x} <= |\underline{x}|\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveToLeft(Less)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} + \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}((\underline{x} + (-\mathrm{u}\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-\mathrm{u}\underline{z})) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{PositiveToLeft(Less)} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} + \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{LessAddition} \rhd \dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} + \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{x} + (-\mathrm{u}\underline{z})) <= ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-\mathrm{u}\underline{z})) = ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg \underline{y} = ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})); \mathrm{eqSymmetry} \rhd \underline{y} = ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})) \gg ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})) = \underline{y}; \mathrm{SubLessRight} \rhd ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})) = \underline{y} \rhd \dot{\neg}((\underline{x} + (-\mathrm{u}\underline{z})) <= ((\underline{y} + \underline{z}) + (-\mathrm{u}\underline{z})) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-\mathrm{u}\underline{z})) = ((\underline{y} + \underline{z}) +$

$(-u\underline{z})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{x}+(-u\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{z})) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{NegativeToRight(Less)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{x} <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{z}+\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{NegativeToRight(Less)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{LessAddition} \rhd \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(((\underline{x}+(-u\underline{y}))+\underline{y}) <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{x}+(-u\underline{y}))+\underline{y}) = (\underline{z}+\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Three2threeTerms} \gg ((\underline{x}+(-u\underline{y}))+\underline{y}) = ((\underline{x}+\underline{y})+(-u\underline{y})); x = x + y - y \gg \underline{x} = ((\underline{x}+\underline{y})+(-u\underline{y})); \mathrm{eqSymmetry} \rhd \underline{x} = ((\underline{x}+\underline{y})+(-u\underline{y})) \gg ((\underline{x}+\underline{y})+(-u\underline{y})) = \underline{x}; \mathrm{eqTransitivity} \rhd ((\underline{x}+(-u\underline{y}))+\underline{y}) = ((\underline{x}+\underline{y})+(-u\underline{y})) \rhd ((\underline{x}+\underline{y})+(-u\underline{y})) = \underline{x} \gg ((\underline{x}+(-u\underline{y}))+\underline{y}) = \underline{x}; \mathrm{SubLessLeft} \rhd ((\underline{x}+(-u\underline{y}))+\underline{y}) = \underline{x} \rhd \dot{\neg}(((\underline{x}+(-u\underline{y}))+\underline{y}) <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{x}+(-u\underline{y}))+\underline{y}) = (\underline{z}+\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{z}+\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{NumericalDifferenceLess(Helper)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon 0 <= (\underline{x}+(-u\underline{y})) \vdash \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{NumericalDifferenceLess(Helper)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon 0 <= (\underline{x}+(-u\underline{y})) \vdash \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{leqLessTransitivity} \rhd 0 <= (\underline{x}+(-u\underline{y})) \rhd \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveNegated} \rhd \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-u\underline{z}) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{z}) = 0)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessAdditionLeft} \rhd \dot{\neg}((-u\underline{z}) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{z}) = 0)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{y}+(-u\underline{z})) <= (\underline{y}+0) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = (\underline{y}+0))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{plus0} \gg (\underline{y}+0) = \underline{y}; \mathrm{SubLessRight} \rhd (\underline{y}+0) = \underline{y} \rhd \dot{\neg}((\underline{y}+(-u\underline{z})) <= (\underline{y}+0) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = (\underline{y}+0))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{negativeToLeft(Leq)(1term)} \rhd 0 <= (\underline{x}+(-u\underline{y})) \gg \underline{y} <= \underline{x}; \mathrm{LessLeqTransitivity} \rhd \dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \underline{y} <= \underline{x} \gg \dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{NegativeToRight(Less)} \rhd \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{z}+\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{plusCommutativity} \gg (\underline{z}+\underline{y}) = (\underline{y}+\underline{z}); \mathrm{SubLessRight} \rhd (\underline{z}+\underline{y}) = (\underline{y}+\underline{z}) \rhd \dot{\neg}(\underline{x} <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{z}+\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{JoinConjuncts} \rhd \dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{NumericalDifferenceLess} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot{\neg}(|(\underline{x}+(-u\underline{y}))| <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x}+(-u\underline{y}))| = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{NumericalDifferenceLess} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot{\neg}(|(\underline{x}+(-u\underline{y}))| <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x}+(-u\underline{y}))| = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash 0 <= (\underline{x}+(-u\underline{y})) \vdash \mathrm{NonnegativeNumerical} \rhd 0 <= (\underline{x}+(-u\underline{y})) \gg |(\underline{x}+(-u\underline{y}))| = (\underline{x}+(-u\underline{y})); \mathrm{SubLessLeft} \rhd |(\underline{x}+(-u\underline{y}))| = (\underline{x}+(-u\underline{y})) \rhd \dot{\neg}(|(\underline{x}+(-u\underline{y}))| <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x}+(-u\underline{y}))| = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{NumericalDifferenceLess(Helper)} \rhd 0 <=$

$(\underline{x} + (-u\underline{y})) \rhd \dot{\neg}((\underline{x} + (-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{y})) = \underline{z})n)n)n \gg$
$\dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} + \underline{z}))n)n)n)n)n; \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(|(\underline{x} + (-u\underline{y}))| <= \underline{z} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{x} + (-u\underline{y}))| = \underline{z})n)n)n \vdash \dot{\neg}(0 <= (\underline{x} + (-u\underline{y})))n \vdash \mathrm{ToLess} \rhd \dot{\neg}(0 <=$
$(\underline{x} + (-u\underline{y})))n \gg \dot{\neg}((\underline{x} + (-u\underline{y})) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{y})) =$
$0)n)n)n; \mathrm{NegativeNumerical} \rhd \dot{\neg}((\underline{x} + (-u\underline{y})) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{y})) =$
$0)n)n)n \gg |(\underline{x} + (-u\underline{y}))| = (-u(\underline{x} + (-u\underline{y}))); \mathrm{MinusNegated} \gg$
$(-u(\underline{x} + (-u\underline{y}))) = (\underline{y} + (-u\underline{x})); \mathrm{eqTransitivity} \rhd |(\underline{x} + (-u\underline{y}))| =$
$(-u(\underline{x} + (-u\underline{y}))) \rhd (-u(\underline{x} + (-u\underline{y}))) = (\underline{y} + (-u\underline{x})) \gg |(\underline{x} + (-u\underline{y}))| =$
$(\underline{y} + (-u\underline{x})); \mathrm{SubLessLeft} \rhd |(\underline{x} + (-u\underline{y}))| = (\underline{y} + (-u\underline{x})) \rhd \dot{\neg}(|(\underline{x} + (-u\underline{y}))| <=$
$\underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x} + (-u\underline{y}))| = \underline{z})n)n)n \gg \dot{\neg}((\underline{y} + (-u\underline{x})) <= \underline{z} \Rightarrow$
$\dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{x})) = \underline{z})n)n)n; \mathrm{NegativeNegated} \rhd \dot{\neg}((\underline{x} + (-u\underline{y})) <= 0 \Rightarrow$
$\dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{y})) = 0)n)n)n \gg \dot{\neg}(0 <= (-u(\underline{x} + (-u\underline{y}))) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(-u(\underline{x}+(-u\underline{y}))))n)n)n; \mathrm{SubLessRight} \rhd (-u(\underline{x}+(-u\underline{y}))) = (\underline{y}+(-u\underline{x})) \rhd \dot{\neg}(0 <=$
$(-u(\underline{x} + (-u\underline{y}))) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (-u(\underline{x} + (-u\underline{y}))))n)n)n \gg \dot{\neg}(0 <= (\underline{y} + (-u\underline{x})) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\underline{y} + (-u\underline{x})))n)n)n; \mathrm{LessLeq} \rhd \dot{\neg}(0 <= (\underline{y} + (-u\underline{x})) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\underline{y}+(-u\underline{x})))n)n)n \gg 0 <= (\underline{y}+(-u\underline{x})); \mathrm{NumericalDifferenceLess(Helper)} \rhd 0 <=$
$(\underline{y} + (-u\underline{x})) \rhd \dot{\neg}((\underline{y} + (-u\underline{x})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{x})) = \underline{z})n)n)n \gg$
$\dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) = \underline{y})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (\underline{x} + \underline{z}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(\underline{y} = (\underline{x} + \underline{z}))n)n)n)n)n; \mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) <= \underline{y} \Rightarrow$
$\dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) = \underline{y})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (\underline{x} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} =$
$(\underline{x} + \underline{z}))n)n)n)n)n \gg \dot{\neg}((\underline{x} + (-u\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) =$
$\underline{y})n)n)n; \mathrm{NegativeToRight(Less)} \rhd \dot{\neg}((\underline{x} + (-u\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) =$
$\underline{y})n)n)n \gg \dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} =$
$(\underline{y} + \underline{z}))n)n)n; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) =$
$\underline{y})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (\underline{x} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (\underline{x} + \underline{z}))n)n)n)n)n \gg \dot{\neg}(\underline{y} <=$
$(\underline{x} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (\underline{x} + \underline{z}))n)n)n; \mathrm{PositiveToLeft(Less)} \rhd \dot{\neg}(\underline{y} <= (\underline{x} + \underline{z}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(\underline{y} = (\underline{x} + \underline{z}))n)n)n \gg \dot{\neg}((\underline{y} + (-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) =$
$\underline{x})n)n)n; \mathrm{JoinConjuncts} \rhd \dot{\neg}((\underline{y} + (-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) =$
$\underline{x})n)n)n \rhd \dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} + \underline{z}))n)n)n \gg \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) <=$
$\underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} =$
$(\underline{y} + \underline{z}))n)n)n)n)n; \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \mathrm{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(|(\underline{x} + (-u\underline{y}))| <= \underline{z} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{x} + (-u\underline{y}))| = \underline{z})n)n)n \vdash 0 <= (\underline{x} + (-u\underline{y})) \vdash \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) <= \underline{x} \Rightarrow$
$\dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} =$
$(\underline{y} + \underline{z}))n)n)n)n)n \gg \dot{\neg}(|(\underline{x} + (-u\underline{y}))| <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x} + (-u\underline{y}))| = \underline{z})n)n)n \Rightarrow$
$0 <= (\underline{x} + (-u\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) = \underline{x})n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} =$
$(\underline{y} + \underline{z}))n)n)n)n)n; \mathrm{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(|(\underline{x} + (-u\underline{y}))| <= \underline{z} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{x} + (-u\underline{y}))| = \underline{z})n)n)n \vdash \dot{\neg}(0 <= (\underline{x} + (-u\underline{y})))n \vdash \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) <=$
$\underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} =$
$(\underline{y} + \underline{z}))n)n)n)n)n \gg \dot{\neg}(|(\underline{x} + (-u\underline{y}))| <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x} + (-u\underline{y}))| = \underline{z})n)n)n \Rightarrow$
$\dot{\neg}(0 <= (\underline{x} + (-u\underline{y})))n \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) =$
$\underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))n)n)n)n)n; \dot{\neg}(|(\underline{x}+(-u\underline{y}))| <=$
$\underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x} + (-u\underline{y}))| = \underline{z})n)n)n \vdash \mathrm{MP} \rhd \dot{\neg}(|(\underline{x} + (-u\underline{y}))| <= \underline{z} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{x} + (-u\underline{y}))| = \underline{z})n)n)n \Rightarrow 0 <= (\underline{x} + (-u\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) <=$
$\underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} =$

$(\underline{y} + \underline{z}))n)n)n)n)n \rhd \dot{\neg}(|(\underline{x} + (-u\underline{y}))| <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x} + (-u\underline{y}))| = \underline{z})n)n)n \gg$
$0 <= (\underline{x} + (-u\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y} + (-u\underline{z})) = \underline{x})n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))n)n)n)n)n; \mathrm{MP} \rhd \dot{\neg}(|(\underline{x}+(-u\underline{y}))| <= \underline{z} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{x}+(-u\underline{y}))| = \underline{z})n)n)n \Rightarrow \dot{\neg}(0 <= (\underline{x}+(-u\underline{y})))n \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) <=$
$\underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} =$
$(\underline{y}+\underline{z}))n)n)n)n)n \rhd \dot{\neg}(|(\underline{x}+(-u\underline{y}))| <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x}+(-u\underline{y}))| = \underline{z})n)n)n \gg$
$\dot{\neg}(0 <= (\underline{x}+(-u\underline{y})))n \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) =$
$\underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))n)n)n)n)n; \mathrm{FromNegations} \rhd$
$0 <= (\underline{x}+(-u\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))n)n)n)n)n \rhd \dot{\neg}(0 <= (\underline{x}+(-u\underline{y})))n \Rightarrow$
$\dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))n)n)n)n)n \gg \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) =$
$\underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))n)n)n)n)n\rceil, p_0, c)]$

$[\mathrm{Fpart} - \mathrm{Bounded}(\mathrm{Base}) \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{(v1)}: \forall\underline{(v2n)}: \forall\underline{(fx)}: \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}: \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v2n)}: \underline{(v2n)} <= 0 \Rightarrow \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <=$
$\underline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| = \underline{(v1)})n)n)n)n)n]$

$[\mathrm{Fpart} - \mathrm{Bounded}(\mathrm{Base}) \stackrel{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall\underline{(v1)}: \forall\underline{(v2n)}: \forall\underline{(fx)}: \underline{(v2n)} <= 0 \vdash \mathrm{LeqLessEq} \rhd \underline{(v2n)} <= 0 \gg \dot{\neg}(\dot{\neg}(\underline{(v2n)} <=$
$0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(v2n)} = 0)n)n)n)n \Rightarrow \underline{(v2n)} = 0; \mathrm{Nonnegative}(N) \gg 0 <=$
$\underline{(v2n)}; \mathrm{toNotLess} \rhd 0 <= \underline{(v2n)} \gg \dot{\neg}(\dot{\neg}(\underline{(v2n)} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(v2n)} =$
$0)n)n)n)n; \mathrm{NegateDisjunct1} \rhd \dot{\neg}(\dot{\neg}(\underline{(v2n)} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(v2n)} = 0)n)n)n)n \Rightarrow$
$\underline{(v2n)} = 0 \rhd \dot{\neg}(\dot{\neg}(\underline{(v2n)} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(v2n)} = 0)n)n)n)n \gg \underline{(v2n)} =$
$0; \mathrm{SameSeries} \rhd \underline{(v2n)} = 0 \gg \underline{(fx)}[\underline{(v2n)}] = \underline{(fx)}[0]; \mathrm{SameNumerical} \rhd \underline{(fx)}[\underline{(v2n)}] =$
$\underline{(fx)}[0] \gg |\underline{(fx)}[\underline{(v2n)}]| = |\underline{(fx)}[0]|; \mathrm{eqAddition} \rhd |\underline{(fx)}[\underline{(v2n)}]| = |\underline{(fx)}[0]| \gg$
$(|\underline{(fx)}[\underline{(v2n)}]| + 1) = (|\underline{(fx)}[0]| + 1); \mathrm{leqReflexivity} \gg |\underline{(fx)}[\underline{(v2n)}]| <=$
$|\underline{(fx)}[\underline{(v2n)}]|; \mathrm{Leq} + 1 \rhd |\underline{(fx)}[\underline{(v2n)}]| <= |\underline{(fx)}[\underline{(v2n)}]| \gg \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <=$
$(|\underline{(fx)}[\underline{(v2n)}]| + 1) \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| =$
$(|\underline{(fx)}[\underline{(v2n)}]| + 1))n)n)n; \mathrm{SubLessRight} \rhd (|\underline{(fx)}[\underline{(v2n)}]| + 1) =$
$(|\underline{(fx)}[0]| + 1) \rhd \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <= (|\underline{(fx)}[\underline{(v2n)}]| + 1) \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| =$
$(|\underline{(fx)}[\underline{(v2n)}]| + 1))n)n)n \gg \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <= (|\underline{(fx)}[0]| + 1) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| = (|\underline{(fx)}[0]| + 1))n)n)n; \forall\underline{(v1)}: \forall\underline{(v2n)}: \forall\underline{(fx)}: \mathrm{Ded} \rhd$
$\forall\underline{(v1)}: \forall\underline{(v2n)}: \forall\underline{(fx)}: \underline{(v2n)} <= 0 \vdash \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <= (|\underline{(fx)}[0]| + 1) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| = (|\underline{(fx)}[0]| + 1))n)n)n \gg \underline{(v2n)} <= 0 \Rightarrow \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <=$
$(|\underline{(fx)}[0]| + 1) \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| = (|\underline{(fx)}[0]| + 1))n)n)n; \mathrm{Gen} \rhd \underline{(v2n)} <= 0 \Rightarrow$
$\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <= (|\underline{(fx)}[0]| + 1) \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| = (|\underline{(fx)}[0]| + 1))n)n)n \gg$
$\forall_{\mathrm{obj}}\underline{(v2n)}: \underline{(v2n)} <= 0 \Rightarrow \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <= (|\underline{(fx)}[0]| + 1) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| = (|\underline{(fx)}[0]| + 1))n)n)n; \mathrm{IntroExist}\ @(|\underline{(fx)}[0]| + 1) \rhd$
$\forall_{\mathrm{obj}}\underline{(v2n)}: \underline{(v2n)} <= 0 \Rightarrow \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <= (|\underline{(fx)}[0]| + 1) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| = (|\underline{(fx)}[0]| + 1))n)n)n \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}: \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v2n)}: \underline{(v2n)} <=$
$0 \Rightarrow \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <= \underline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| = \underline{(v1)})n)n)n)n)n\rceil, p_0, c)]$

$[\mathrm{Fpart} - \mathrm{Bounded}(\mathrm{InduHelper}) \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{(v1)}: \forall\underline{(v2n)}: \forall\underline{n}: \forall\underline{(fx)}: \underline{(v2n)} <= \underline{n} \Rightarrow \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <= \underline{(v1)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| = \underline{(v1)})n)n)n \vdash \underline{(v2n)} <= (\underline{n} + 1) \vdash \dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| <=$
$\mathrm{if}((|\underline{(fx)}[(\underline{n} + 1)]| + 1) <= \underline{(v1)}, \underline{(v1)}, (|\underline{(fx)}[(\underline{n} + 1)]| + 1)) \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{(fx)}[\underline{(v2n)}]| =$

if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n]

[Fpart − Bounded(InduHelper) $\overset{\text{proof}}{\rightarrow}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(v1): ∀(v2n): ∀n: ∀(fx): (v2n) <= n ⇒ ¬̇(|(fx)[(v2n)]| <= (v1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (v1))n)n)n ⊢ (v2n) <= (n + 1) ⊢ LeqLessEq ▷ (v2n) <= (n + 1) ≫ ¬̇(¬̇((v2n) <= (n + 1) ⇒ ¬̇(¬̇((v2n) = (n + 1))n)n)n)n ⇒ (v2n) = (n + 1); ∀(v1): ∀(v2n): ∀n: ∀(fx): (v2n) <= n ⇒ ¬̇(|(fx)[(v2n)]| <= (v1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (v1))n)n)n ⊢ ¬̇((v2n) <= (n + 1) ⇒ ¬̇(¬̇((v2n) = (n + 1))n)n)n ⊢ LessMinus1(N) ▷ ¬̇((v2n) <= (n + 1) ⇒ ¬̇(¬̇((v2n) = (n + 1))n)n)n ≫ (v2n) <= n; MP ▷ (v2n) <= n ⇒ ¬̇(|(fx)[(v2n)]| <= (v1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (v1))n)n)n ▷ (v2n) <= n ≫ ¬̇(|(fx)[(v2n)]| <= (v1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (v1))n)n)n; MaxLeq(1) ≫ (v1) <= if((|(fx)[(n+1)]|+1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)); LessLeqTransitivity ▷ ¬̇(|(fx)[(v2n)]| <= (v1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (v1))n)n)n ▷ (v1) <= if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ≫ ¬̇(|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n; ∀(v1): ∀(v2n): ∀n: ∀(fx): (v2n) = (n + 1) ⊢ SameSeries ▷ (v2n) = (n + 1) ≫ (fx)[(v2n)] = (fx)[(n + 1)]; SameNumerical ▷ (fx)[(v2n)] = (fx)[(n + 1)] ≫ |(fx)[(v2n)]| = |(fx)[(n + 1)]|; eqLeq ▷ |(fx)[(v2n)]| = |(fx)[(n + 1)]| ≫ |(fx)[(v2n)]| <= |(fx)[(n + 1)]|; Leq + 1 ▷ |(fx)[(v2n)]| <= |(fx)[(n + 1)]| ≫ ¬̇(|(fx)[(v2n)]| <= (|(fx)[(n+1)]|+1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (|(fx)[(n+1)]|+1))n)n)n; MaxLeq(2) ≫ (|(fx)[(n + 1)]| + 1) <= if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)); LessLeqTransitivity ▷ ¬̇(|(fx)[(v2n)]| <= (|(fx)[(n + 1)]| + 1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (|(fx)[(n + 1)]| + 1))n)n)n ▷ (|(fx)[(n + 1)]| + 1) <= if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ≫ ¬̇(|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n; Ded ▷ ∀(v1): ∀(v2n): ∀n: ∀(fx): (v2n) <= n ⇒ ¬̇(|(fx)[(v2n)]| <= (v1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (v1))n)n)n ⊢ ¬̇((v2n) <= (n + 1) ⇒ ¬̇(¬̇((v2n) = (n + 1))n)n)n ⊢ ¬̇(|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n ≫ (v2n) <= n ⇒ ¬̇(|(fx)[(v2n)]| <= (v1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (v1))n)n)n ⇒ ¬̇((v2n) <= (n + 1) ⇒ ¬̇(¬̇((v2n) = (n + 1))n)n)n ⇒ ¬̇(|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n; MP ▷ (v2n) <= n ⇒ ¬̇(|(fx)[(v2n)]| <= (v1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (v1))n)n)n ⇒ ¬̇((v2n) <= (n + 1) ⇒ ¬̇(¬̇((v2n) = (n + 1))n)n)n ⇒ ¬̇(|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n ▷ (v2n) <= n ⇒ ¬̇(|(fx)[(v2n)]| <= (v1) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = (v1))n)n)n ≫ ¬̇((v2n) <= (n + 1) ⇒ ¬̇(¬̇((v2n) = (n + 1))n)n)n ⇒ ¬̇(|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇(¬̇(|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n; Ded ▷ ∀(v1): ∀(v2n): ∀n: ∀(fx): (v2n) = (n + 1) ⊢ ¬̇(|(fx)[(v2n)]| <=

if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| =
if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n ≫ (v2n) =
(n + 1) ⇒ ¬̇ (|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <=
(v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <=
(v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n; FromDisjuncts ⊳ ¬̇ (¬̇ ((v2n) <=
(n + 1) ⇒ ¬̇ (¬̇ ((v2n) = (n + 1))n)n)n)n ⇒ (v2n) = (n + 1) ⊳ ¬̇ ((v2n) <=
(n + 1) ⇒ ¬̇ (¬̇ ((v2n) = (n + 1))n)n)n ⇒ ¬̇ (|(fx)[(v2n)]| <=
if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| =
if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n ⊳ (v2n) =
(n + 1) ⇒ ¬̇ (|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <=
(v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <=
(v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n ≫ ¬̇ (|(fx)[(v2n)]| <=
if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| =
if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n⌉, p_0, c)]

[Fpart − Bounded(Indu) $\stackrel{\text{stmt}}{\rightarrow}$ SystemQ ⊢
∀(v1): ∀(v2n): ∀n: ∀(fx): ¬̇ (∀$_{\mathrm{obj}}$(v1): ¬̇ (∀$_{\mathrm{obj}}$(v2n): (v2n) <= n ⇒
¬̇ (|(fx)[(v2n)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n)n)n ⇒
¬̇ (∀$_{\mathrm{obj}}$(v1): ¬̇ (∀$_{\mathrm{obj}}$(v2n): (v2n) <= (n + 1) ⇒ ¬̇ (|(fx)[(v2n)]| <= (v1) ⇒
¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n)n)n]

[Fpart − Bounded(Indu) $\stackrel{\text{proof}}{\rightarrow}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢
∀(v1): ∀(v2n): ∀n: ∀(fx): (v2n) <= n ⇒ ¬̇ (|(fx)[(v2n)]| <= (v1) ⇒
¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n ⊢ (v2n) <= (n + 1) ⊢
Fpart − Bounded(InduHelper) ⊳ (v2n) <= n ⇒ ¬̇ (|(fx)[(v2n)]| <= (v1) ⇒
¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n ⊳ (v2n) <= (n + 1) ≫ ¬̇ (|(fx)[(v2n)]| <=
if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| =
if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| +
1)))n)n)n; ∀(v1): ∀(v2n): ∀n: ∀(fx): Ded ⊳ ∀(v1): ∀(v2n): ∀n: ∀(fx): (v2n) <= n ⇒
¬̇ (|(fx)[(v2n)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n ⊢ (v2n) <= (n+1) ⊢
¬̇ (|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒
¬̇ (¬̇ (|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| +
1)))n)n)n ≫ (v2n) <= n ⇒ ¬̇ (|(fx)[(v2n)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| =
(v1))n)n)n ⇒ (v2n) <= (n + 1) ⇒ ¬̇ (|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <=
(v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <=
(v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n; AddAll ⊳ (v2n) <= n ⇒
¬̇ (|(fx)[(v2n)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n ⇒ (v2n) <=
(n + 1) ⇒ ¬̇ (|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <=
(v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <=
(v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n ≫ ∀$_{\mathrm{obj}}$(v2n): (v2n) <= n ⇒
¬̇ (|(fx)[(v2n)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n ⇒
∀$_{\mathrm{obj}}$(v2n): (v2n) <= (n + 1) ⇒ ¬̇ (|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <=
(v1), (v1), (|(fx)[(n + 1)]| + 1)) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = if((|(fx)[(n + 1)]| + 1) <=
(v1), (v1), (|(fx)[(n + 1)]| + 1)))n)n)n; AddExist(SimpleAnt) @ if((|(fx)[(n +
1)]| + 1) <= (v1), (v1), (|(fx)[(n + 1)]| + 1)) ⊳ ∀$_{\mathrm{obj}}$(v2n): (v2n) <= n ⇒
¬̇ (|(fx)[(v2n)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n ⇒
∀$_{\mathrm{obj}}$(v2n): (v2n) <= (n + 1) ⇒ ¬̇ (|(fx)[(v2n)]| <= if((|(fx)[(n + 1)]| + 1) <=

$(v1), (v1), (|(fx)[(n+1)]| + 1)) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = \mathrm{if}((|(fx)[(n+1)]| + 1) <= (v1), (v1), (|(fx)[(n+1)]| + 1)))n)n)n \gg \dot{\neg}(\forall_{obj}(v1) \colon \dot{\neg}(\forall_{obj}(v2n) \colon (v2n) <= n \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{obj}(v1) \colon \dot{\neg}(\forall_{obj}(v2n) \colon (v2n) <= (n+1) \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n)n)n\rceil, p_0, c)]$

$[\mathrm{Fpart-Bounded} \overset{stmt}{\to} \mathrm{SystemQ} \vdash \forall(v1) \colon \forall(v2) \colon \forall n \colon \forall(fx) \colon \dot{\neg}(\forall_{obj}(v1) \colon \dot{\neg}(\forall_{obj}(v2) \colon (v2) <= n \Rightarrow \dot{\neg}(|(fx)[(v2)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2)]| = (v1))n)n)n)n)n]$

$[\mathrm{Fpart-Bounded} \overset{proof}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall(v1) \colon \forall(v2) \colon \forall n \colon \forall(fx) \colon \mathrm{Fpart-Bounded(Base)} \gg \dot{\neg}(\forall_{obj}(v1) \colon \dot{\neg}(\forall_{obj}(v2) \colon (v2) <= 0 \Rightarrow \dot{\neg}(|(fx)[(v2)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2)]| = (v1))n)n)n)n)n; \mathrm{Fpart-Bounded(Indu)} \gg \dot{\neg}(\forall_{obj}(v1) \colon \dot{\neg}(\forall_{obj}(v2) \colon (v2) <= n \Rightarrow \dot{\neg}(|(fx)[(v2)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2)]| = (v1))n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{obj}(v1) \colon \dot{\neg}(\forall_{obj}(v2) \colon (v2) <= (n+1) \Rightarrow \dot{\neg}(|(fx)[(v2)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2)]| = (v1))n)n)n)n)n; \mathrm{Induction} \rhd \dot{\neg}(\forall_{obj}(v1) \colon \dot{\neg}(\forall_{obj}(v2) \colon (v2) <= 0 \Rightarrow \dot{\neg}(|(fx)[(v2)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2)]| = (v1))n)n)n)n)n \rhd \dot{\neg}(\forall_{obj}(v1) \colon \dot{\neg}(\forall_{obj}(v2) \colon (v2) <= n \Rightarrow \dot{\neg}(|(fx)[(v2)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2)]| = (v1))n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{obj}(v1) \colon \dot{\neg}(\forall_{obj}(v2) \colon (v2) <= (n+1) \Rightarrow \dot{\neg}(|(fx)[(v2)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2)]| = (v1))n)n)n)n)n \gg \dot{\neg}(\forall_{obj}(v1) \colon \dot{\neg}(\forall_{obj}(v2) \colon (v2) <= n \Rightarrow \dot{\neg}(|(fx)[(v2)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2)]| = (v1))n)n)n)n)n\rceil, p_0, c)]$

$[\mathrm{F-Bounded(Helper)} \overset{stmt}{\to} \mathrm{SystemQ} \vdash \forall x \colon \forall y \colon \forall z \colon \dot{\neg}(|(x + (-uy))| <= z \Rightarrow \dot{\neg}(\dot{\neg}(|(x + (-uy))| = z)n)n)n \vdash \dot{\neg}(|y| <= \mathrm{if}(|(x + (-uz))| <= |(x+z)|, |(x+z)|, |(x + (-uz))|) \Rightarrow \dot{\neg}(\dot{\neg}(|y| = \mathrm{if}(|(x + (-uz))| <= |(x+z)|, |(x+z)|, |(x + (-uz))|))n)n)n]$

$[\mathrm{F-Bounded(Helper)} \overset{proof}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall x \colon \forall y \colon \forall z \colon \dot{\neg}(|(x + (-uy))| <= z \Rightarrow \dot{\neg}(\dot{\neg}(|(x + (-uy))| = z)n)n)n \vdash \mathrm{NumericalDifferenceLess} \rhd \dot{\neg}(|(x + (-uy))| <= z \Rightarrow \dot{\neg}(\dot{\neg}(|(x + (-uy))| = z)n)n)n \gg \dot{\neg}(\dot{\neg}((y + (-uz)) <= x \Rightarrow \dot{\neg}(\dot{\neg}((y + (-uz)) = x)n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(x <= (y+z) \Rightarrow \dot{\neg}(\dot{\neg}(x = (y+z))n)n)n)n)n; \mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}((y + (-uz)) <= x \Rightarrow \dot{\neg}(\dot{\neg}((y + (-uz)) = x)n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(x <= (y+z) \Rightarrow \dot{\neg}(\dot{\neg}(x = (y+z))n)n)n)n)n \gg \dot{\neg}((y + (-uz)) <= x \Rightarrow \dot{\neg}(\dot{\neg}((y + (-uz)) = x)n)n)n; \mathrm{NegativeToRight(Less)} \rhd \dot{\neg}((y + (-uz)) <= x \Rightarrow \dot{\neg}(\dot{\neg}((y + (-uz)) = x)n)n)n \gg \dot{\neg}(y <= (x+z) \Rightarrow \dot{\neg}(\dot{\neg}(y = (x+z))n)n)n; x <= |x| \gg (x+z) <= |(x+z)|; \mathrm{LessLeqTransitivity} \rhd \dot{\neg}(y <= (x+z) \Rightarrow \dot{\neg}(\dot{\neg}(y = (x+z))n)n)n \rhd (x+z) <= |(x+z)| \gg \dot{\neg}(y <= |(x+z)| \Rightarrow \dot{\neg}(\dot{\neg}(y = |(x+z)|)n)n)n; \mathrm{MaxLeq(1)} \gg |(x+z)| <= \mathrm{if}(|(x + (-uz))| <= |(x+z)|, |(x+z)|, |(x + (-uz))|); \mathrm{LessLeqTransitivity} \rhd \dot{\neg}(y <= |(x+z)| \Rightarrow \dot{\neg}(\dot{\neg}(y = |(x+z)|)n)n)n \rhd |(x+z)| <= \mathrm{if}(|(x + (-uz))| <= |(x+z)|, |(x+z)|, |(x + (-uz))|) \gg \dot{\neg}(y <= \mathrm{if}(|(x + (-uz))| <= |(x+z)|, |(x+z)|, |(x + (-uz))|) \Rightarrow \dot{\neg}(\dot{\neg}(y = \mathrm{if}(|(x + (-uz))| <= |(x+z)|, |(x+z)|, |(x + (-uz))|))n)n)n; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}((y + (-uz)) <= x \Rightarrow \dot{\neg}(\dot{\neg}((y + (-uz)) = x)n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(x <= (y+z) \Rightarrow \dot{\neg}(\dot{\neg}(x = (y+z))n)n)n)n)n \gg \dot{\neg}(x <= (y+z) \Rightarrow \dot{\neg}(\dot{\neg}(x =$

$(\underline{y}+\underline{z}))n)n)n;\ \mathrm{PositiveToLeft(Less)} \rhd \dot\neg(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} =$
$(\underline{y}+\underline{z}))n)n)n \gg \dot\neg((\underline{x}+(-u\underline{z})) <= \underline{y} \Rightarrow \dot\neg(\dot\neg((\underline{x}+(-u\underline{z})) = \underline{y})n)n)n;\ x <=$
$|x| \gg (\underline{z}+(-u\underline{x})) <= |(\underline{z}+(-u\underline{x}))|;\ \mathrm{NumericalDifference} \gg |(\underline{z}+(-u\underline{x}))| =$
$|(\underline{x}+(-u\underline{z}))|;\ \mathrm{subLeqRight} \rhd |(\underline{z}+(-u\underline{x}))| = |(\underline{x}+(-u\underline{z}))| \rhd (\underline{z}+(-u\underline{x})) <=$
$|(\underline{z}+(-u\underline{x}))| \gg (\underline{z}+(-u\underline{x})) <= |(\underline{x}+(-u\underline{z}))|;\ \mathrm{LeqNegated} \rhd (\underline{z}+(-u\underline{x})) <=$
$|(\underline{x}+(-u\underline{z}))| \gg (-u|(\underline{x}+(-u\underline{z}))|) <= (-u(\underline{z}+(-u\underline{x})));\ \mathrm{MinusNegated} \gg$
$(-u(\underline{z}+(-u\underline{x}))) = (\underline{x}+(-u\underline{z}));\ \mathrm{subLeqRight} \rhd (-u(\underline{z}+(-u\underline{x}))) =$
$(\underline{x}+(-u\underline{z})) \rhd (-u|(\underline{x}+(-u\underline{z}))|) <= (-u(\underline{z}+(-u\underline{x}))) \gg (-u|(\underline{x}+(-u\underline{z}))|) <=$
$(\underline{x}+(-u\underline{z}));\ \mathrm{leqLessTransitivity} \rhd (-u|(\underline{x}+(-u\underline{z}))|) <= (\underline{x}+(-u\underline{z})) \rhd \dot\neg((\underline{x}+$
$(-u\underline{z})) <= \underline{y} \Rightarrow \dot\neg(\dot\neg((\underline{x}+(-u\underline{z})) = \underline{y})n)n)n \gg \dot\neg((-u|(\underline{x}+(-u\underline{z}))|) <= \underline{y} \Rightarrow$
$\dot\neg(\dot\neg((-u|(\underline{x}+(-u\underline{z}))|) = \underline{y})n)n)n;\ \mathrm{MaxLeq}(2) \gg |(\underline{x}+(-u\underline{z}))| <=$
$\mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|);\ \mathrm{LeqNegated} \rhd |(\underline{x}+(-u\underline{z}))| <=$
$\mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|) \gg (-u\mathrm{if}(|(\underline{x}+(-u\underline{z}))| <=$
$|(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|)) <= (-u|(\underline{x}+(-u\underline{z}))|);\ \mathrm{leqLessTransitivity} \rhd$
$(-u\mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|)) <=$
$(-u|(\underline{x}+(-u\underline{z}))|) \rhd \dot\neg((-u|(\underline{x}+(-u\underline{z}))|) <= \underline{y} \Rightarrow \dot\neg(\dot\neg((-u|(\underline{x}+(-u\underline{z}))|) =$
$\underline{y})n)n)n \gg \dot\neg((-u\mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|)) <= \underline{y} \Rightarrow$
$\dot\neg(\dot\neg((-u\mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|)) =$
$\underline{y})n)n)n;\ \mathrm{ToNumericalLess} \rhd \dot\neg((-u\mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+$
$(-u\underline{z}))|)) <= \underline{y} \Rightarrow \dot\neg(\dot\neg((-u\mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|)) =$
$\underline{y})n)n)n \rhd \dot\neg(\underline{y} <= \mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|) \Rightarrow$
$\dot\neg(\dot\neg(\underline{y} = \mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|))n)n)n \gg$
$\dot\neg(|\underline{y}| <= \mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|) \Rightarrow \dot\neg(\dot\neg(|\underline{y}| =$
$\mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|))n)n)n\rceil, p_0, c)]$

$[F - \mathrm{Bounded} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\overline{(v1)}{:}\,\forall\overline{(v2)}{:}\,\forall\underline{n}{:}\,\forall\overline{(\epsilon)}{:}\,\forall\overline{(fx)}{:}\,\dot\neg(\forall_{\mathrm{obj}}\overline{(v1)}{:}\,\dot\neg(\forall_{\mathrm{obj}}\overline{(v2)}{:}\,\dot\neg(|\overline{(fx)}[\overline{(v2)}]| <= \overline{(v1)} \Rightarrow$
$\dot\neg(\dot\neg(|\overline{(fx)}[\overline{(v2)}]| = \overline{(v1)})n)n)n)n)n]$

$[F - \mathrm{Bounded} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall\overline{(v1)}{:}\,\forall\overline{(v2)}{:}\,\forall\underline{n}{:}\,\forall\overline{(fx)}{:}\,\forall_{\mathrm{obj}}\overline{(v1)}{:}\,\forall_{\mathrm{obj}}\overline{(v2)}{:}\,\dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)n)n)n \Rightarrow$
$\underline{n} <= \overline{(v1)} \Rightarrow \underline{n} <= \overline{(v2)} \Rightarrow \dot\neg(|(\overline{(fx)}[\overline{(v1)}] + (-u\overline{(fx)}[\overline{(v2)}]))| <= 1 \Rightarrow$
$\dot\neg(\dot\neg(|(\overline{(fx)}[\overline{(v1)}] + (-u\overline{(fx)}[\overline{(v2)}]))| = 1)n)n)n \vdash \underline{n} <= \overline{(v2)} \vdash$
$\mathrm{A4} @ \underline{n} \rhd \forall_{\mathrm{obj}}\overline{(v1)}{:}\,\forall_{\mathrm{obj}}\overline{(v2)}{:}\,\dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)n)n)n \Rightarrow \underline{n} <= \overline{(v1)} \Rightarrow$
$\underline{n} <= \overline{(v2)} \Rightarrow \dot\neg(|(\overline{(fx)}[\overline{(v1)}] + (-u\overline{(fx)}[\overline{(v2)}]))| <= 1 \Rightarrow$
$\dot\neg(\dot\neg(|(\overline{(fx)}[\overline{(v1)}] + (-u\overline{(fx)}[\overline{(v2)}]))| = 1)n)n)n \gg \forall_{\mathrm{obj}}\overline{(v2)}{:}\,\dot\neg(0 <= 1 \Rightarrow$
$\dot\neg(\dot\neg(0 = 1)n)n)n \Rightarrow \underline{n} <= \underline{n} \Rightarrow \underline{n} <= \overline{(v2)} \Rightarrow \dot\neg(|(\overline{(fx)}[\underline{n}] + (-u\overline{(fx)}[\overline{(v2)}]))| <=$
$1 \Rightarrow \dot\neg(\dot\neg(|(\overline{(fx)}[\underline{n}] + (-u\overline{(fx)}[\overline{(v2)}]))| = 1)n)n)n;\ \mathrm{A4} @ \overline{(v2)} \rhd \forall_{\mathrm{obj}}\overline{(v2)}{:}\,\dot\neg(0 <=$
$1 \Rightarrow \dot\neg(\dot\neg(0 = 1)n)n)n \Rightarrow \underline{n} <= \underline{n} \Rightarrow \underline{n} <= \overline{(v2)} \Rightarrow$
$\dot\neg(|(\overline{(fx)}[\underline{n}] + (-u\overline{(fx)}[\overline{(v2)}]))| <= 1 \Rightarrow \dot\neg(\dot\neg(|(\overline{(fx)}[\underline{n}] + (-u\overline{(fx)}[\overline{(v2)}]))| =$
$1)n)n)n \gg \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)n)n)n \Rightarrow \underline{n} <= \underline{n} \Rightarrow \underline{n} <= \overline{(v2)} \Rightarrow$
$\dot\neg(|(\overline{(fx)}[\underline{n}] + (-u\overline{(fx)}[\overline{(v2)}]))| <= 1 \Rightarrow \dot\neg(\dot\neg(|(\overline{(fx)}[\underline{n}] + (-u\overline{(fx)}[\overline{(v2)}]))| =$
$1)n)n)n;\ 0 < 1 \gg \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)n)n)n;\ \mathrm{leqReflexivity} \gg \underline{n} <=$
$\underline{n};\ \mathrm{MP3} \rhd \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)n)n)n \Rightarrow \underline{n} <= \underline{n} \Rightarrow \underline{n} <= \overline{(v2)} \Rightarrow$
$\dot\neg(|(\overline{(fx)}[\underline{n}] + (-u\overline{(fx)}[\overline{(v2)}]))| <= 1 \Rightarrow \dot\neg(\dot\neg(|(\overline{(fx)}[\underline{n}] + (-u\overline{(fx)}[\overline{(v2)}]))| =$
$1)n)n)n \rhd \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)n)n)n \rhd \underline{n} <= \underline{n} \rhd \underline{n} <= \overline{(v2)} \gg$
$\dot\neg(|(\overline{(fx)}[\underline{n}] + (-u\overline{(fx)}[\overline{(v2)}]))| <= 1 \Rightarrow \dot\neg(\dot\neg(|(\overline{(fx)}[\underline{n}] + (-u\overline{(fx)}[\overline{(v2)}]))| =$

1)n)n)n; F − Bounded(Helper) ▷ ∸ (|((fx)[n] + (−u(fx)[(v2)]))| <= 1 ⇒
∸ (∸ (|((fx)[n] + (−u(fx)[(v2)]))| = 1)n)n)n ≫ ∸ (|(fx)[(v2)]| <=
if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|) ⇒
∸ (∸ (|(fx)[(v2)]| = if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] +
1)|, |((fx)[n] + (−u1))|))n)n)n; ∀(v1): ∀(v2): ∀n: ∀(fx): $\forall_{obj}$(v2): (v2) <= n ⇒
∸ (|(fx)[(v2)]| <= (v1) ⇒ ∸ (∸ (|(fx)[(v2)]| = (v1))n)n)n ⊢ ∸ (n <= (v2))n ⊢
A4 @ (v2) ▷ $\forall_{obj}$(v2): (v2) <= n ⇒ ∸ (|(fx)[(v2)]| <= (v1) ⇒
∸ (∸ (|(fx)[(v2)]| = (v1))n)n)n ≫ (v2) <= n ⇒ ∸ (|(fx)[(v2)]| <= (v1) ⇒
∸ (∸ (|(fx)[(v2)]| = (v1))n)n)n; ToLess ▷ ∸ (n <= (v2))n ≫ ∸ ((v2) <= n ⇒
∸ (∸ ((v2) = n)n)n)n; LessLeq ▷ ∸ ((v2) <= n ⇒ ∸ (∸ ((v2) = n)n)n)n ≫
(v2) <= n; MP ▷ (v2) <= n ⇒ ∸ (|(fx)[(v2)]| <= (v1) ⇒ ∸ (∸ (|(fx)[(v2)]| =
(v1))n)n)n ▷ (v2) <= n ≫ ∸ (|(fx)[(v2)]| <= (v1) ⇒ ∸ (∸ (|(fx)[(v2)]| =
(v1))n)n)n; ∀(v1): ∀(v2): ∀n: ∀(ϵ): ∀(fx): Ded ▷
∀(v1): ∀(v2): ∀n: ∀(fx): $\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸ (0 <= 1 ⇒ ∸ (∸ (0 = 1)n)n)n ⇒
n <= (v1) ⇒ n <= (v2) ⇒ ∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= 1 ⇒
∸ (∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| = 1)n)n)n ⊢ n <= (v2) ⊢ ∸ (|(fx)[(v2)]| <=
if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|) ⇒
∸ (∸ (|(fx)[(v2)]| = if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] +
1)|, |((fx)[n] + (−u1))|))n)n)n ≫ $\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸ (0 <= 1 ⇒ ∸ (∸ (0 =
1)n)n)n ⇒ n <= (v1) ⇒ n <= (v2) ⇒ ∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= 1 ⇒
∸ (∸ (|((fx)[(v1)]+(−u(fx)[(v2)]))| = 1)n)n)n ⇒ n <= (v2) ⇒ ∸ (|(fx)[(v2)]| <=
if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|) ⇒
∸ (∸ (|(fx)[(v2)]| = if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] +
1)|, |((fx)[n] + (−u1))|))n)n)n; Ded ▷ ∀(v1): ∀(v2): ∀n: ∀(fx): $\forall_{obj}$(v2): (v2) <=
n ⇒ ∸ (|(fx)[(v2)]| <= (v1) ⇒ ∸ (∸ (|(fx)[(v2)]| = (v1))n)n)n ⊢ ∸ (n <=
(v2))n ⊢ ∸ (|(fx)[(v2)]| <= (v1) ⇒ ∸ (∸ (|(fx)[(v2)]| = (v1))n)n)n ≫
$\forall_{obj}$(v2): (v2) <= n ⇒ ∸ (|(fx)[(v2)]| <= (v1) ⇒ ∸ (∸ (|(fx)[(v2)]| =
(v1))n)n)n ⇒ ∸ (n <= (v2))n ⇒ ∸ (|(fx)[(v2)]| <= (v1) ⇒ ∸ (∸ (|(fx)[(v2)]| =
(v1))n)n)n; Cauchy ≫ $\forall_{obj}$(ϵ): ∸ ($\forall_{obj}$n: ∸ ($\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸ (0 <= (ϵ) ⇒
∸ (∸ (0 = (ϵ))n)n)n ⇒ n <= (v1) ⇒ n <= (v2) ⇒
∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒ ∸ (∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| =
(ϵ))n)n)n)n)n; A4 @ 1 ▷ $\forall_{obj}$(ϵ): ∸ ($\forall_{obj}$n: ∸ ($\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸ (0 <= (ϵ) ⇒
∸ (∸ (0 = (ϵ))n)n)n ⇒ n <= (v1) ⇒ n <= (v2) ⇒
∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒ ∸ (∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| =
(ϵ))n)n)n)n)n ≫ ∸ ($\forall_{obj}$n: ∸ ($\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸ (0 <= 1 ⇒ ∸ (∸ (0 =
1)n)n)n ⇒ n <= (v1) ⇒ n <= (v2) ⇒ ∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <=
1 ⇒ ∸ (∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| = 1)n)n)n)n)n; Fpart − Bounded ≫
∸ ($\forall_{obj}$(v1): ∸ ($\forall_{obj}$(v2): (v2) <= n ⇒ ∸ (|(fx)[(v2)]| <= (v1) ⇒
∸ (∸ (|(fx)[(v2)]| = (v1))n)n)n)n)n; ExistMP ▷ $\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸ (0 <= 1 ⇒
∸ (∸ (0 = 1)n)n)n ⇒ n <= (v1) ⇒ n <= (v2) ⇒
∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= 1 ⇒ ∸ (∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| =
1)n)n)n ⇒ n <= (v2) ⇒ ∸ (|(fx)[(v2)]| <= if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|) ⇒ ∸ (∸ (|(fx)[(v2)]| =
if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|))n)n)n ▷
∸ ($\forall_{obj}$n: ∸ ($\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸ (0 <= 1 ⇒ ∸ (∸ (0 = 1)n)n)n ⇒ n <= (v1) ⇒
n <= (v2) ⇒ ∸ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= 1 ⇒ ∸ (∸ (|((fx)[(v1)] +

(−u(fx)[(v2)]))| = 1)n)n)n)n)n ≫ n <= (v2) ⇒ ∸(|(fx)[(v2)]| <=
if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|) ⇒
∸(∸(|(fx)[(v2)]| = if(|((fx)[n]+(−u1))| <= |((fx)[n]+1)|, |((fx)[n]+1)|, |((fx)[n]+
(−u1))|))n)n)n; ExistMP ▷ $\forall_{\mathrm{obj}}$(v2): (v2) <= n ⇒ ∸(|(fx)[(v2)]| <= (v1) ⇒
∸(∸(|(fx)[(v2)]| = (v1))n)n)n ⇒ ∸(n <= (v2))n ⇒ ∸(|(fx)[(v2)]| <= (v1) ⇒
∸(∸(|(fx)[(v2)]| = (v1))n)n)n ▷ ∸($\forall_{\mathrm{obj}}$(v1): ∸($\forall_{\mathrm{obj}}$(v2): (v2) <= n ⇒
∸(|(fx)[(v2)]| <= (v1) ⇒ ∸(∸(|(fx)[(v2)]| = (v1))n)n)n)n)n ≫ ∸(n <=
(v2))n ⇒ ∸(|(fx)[(v2)]| <= (v1) ⇒ ∸(∸(|(fx)[(v2)]| =
(v1))n)n)n; LessThanMax ▷ n <= (v2) ⇒ ∸(|(fx)[(v2)]| <=
if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|) ⇒
∸(∸(|(fx)[(v2)]| = if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|))n)n)n ▷ ∸(n <= (v2))n ⇒
∸(|(fx)[(v2)]| <= (v1) ⇒ ∸(∸(|(fx)[(v2)]| = (v1))n)n)n ≫ ∸(|(fx)[(v2)]| <=
if((v1) <= if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), (v1)) ⇒ ∸(∸(|(fx)[(v2)]| =
if((v1) <= if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), (v1)))n)n)n; Gen ▷
∸(|(fx)[(v2)]| <= if((v1) <= if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), (v1)) ⇒ ∸(∸(|(fx)[(v2)]| =
if((v1) <= if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), (v1)))n)n)n ≫
$\forall_{\mathrm{obj}}$(v2): ∸(|(fx)[(v2)]| <= if((v1) <= if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), (v1)) ⇒ ∸(∸(|(fx)[(v2)]| =
if((v1) <= if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] +
(−u1))|), if(|((fx)[n] + (−u1))| <= |((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] +
(−u1))|), (v1)))n)n)n; IntroExist @ if((v1) <= if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), if(|((fx)[n] + (−u1))| <=
|((fx)[n]+1)|, |((fx)[n]+1)|, |((fx)[n]+(−u1))|), (v1))▷$\forall_{\mathrm{obj}}$(v2): ∸(|(fx)[(v2)]| <=
if((v1) <= if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), (v1)) ⇒ ∸(∸(|(fx)[(v2)]| =
if((v1) <= if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), if(|((fx)[n] + (−u1))| <=
|((fx)[n] + 1)|, |((fx)[n] + 1)|, |((fx)[n] + (−u1))|), (v1)))n)n)n ≫
∸($\forall_{\mathrm{obj}}$(v1): ∸($\forall_{\mathrm{obj}}$(v2): ∸(|(fx)[(v2)]| <= (v1) ⇒ ∸(∸(|(fx)[(v2)]| =
(v1))n)n)n)n)n⌉, p_0, c)]

[NegativeToLeft(Less) $\overset{\mathrm{stmt}}{\to}$ SystemQ ⊢ ∀x: ∀y: ∀z: ∸(x <= (y + (−uz)) ⇒
∸(∸(x = (y + (−uz)))n)n)n ⊢ ∸((x + z) <= y ⇒ ∸(∸((x + z) = y)n)n)n]

[NegativeToLeft(Less) $\overset{\mathrm{proof}}{\to}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢ ∀x: ∀y: ∀z: ∸(x <=
(y + (−uz)) ⇒ ∸(∸(x = (y + (−uz)))n)n)n ⊢ LessAddition ▷ ∸(x <=

$(\underline{y}+(-\mathrm{u}\underline{z})) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+(-\mathrm{u}\underline{z})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{x}+\underline{z}) <= ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+\underline{z}) = ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Three2threeTerms} \gg ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) = ((\underline{y}+\underline{z})+(-\mathrm{u}\underline{z})); \mathrm{x} = \mathrm{x}+\mathrm{y}-\mathrm{y} \gg \underline{y} = ((\underline{y}+\underline{z})+(-\mathrm{u}\underline{z})); \mathrm{eqSymmetry} \rhd \underline{y} = ((\underline{y}+\underline{z})+(-\mathrm{u}\underline{z})) \gg ((\underline{y}+\underline{z})+(-\mathrm{u}\underline{z})) = \underline{y}; \mathrm{eqTransitivity} \rhd ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) = ((\underline{y}+\underline{z})+(-\mathrm{u}\underline{z})) \rhd ((\underline{y}+\underline{z})+(-\mathrm{u}\underline{z})) = \underline{y} \gg ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) = \underline{y}; \mathrm{SubLessRight} \rhd ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) = \underline{y} \rhd \dot{\neg}((\underline{x}+\underline{z}) <= ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+\underline{z}) = ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{x}+\underline{z}) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+\underline{z}) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveTripled} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \underline{x}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{PositiveTripled} \stackrel{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \underline{x}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash 0 < 3 \gg \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveFactors} \rhd \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \underline{x}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= (((1+1)+1) * (\mathrm{rec}((1+1)+1) * \underline{x})) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (((1+1)+1) * (\mathrm{rec}((1+1)+1) * \underline{x})))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{timesAssociativity} \gg ((((1+1)+1) * \mathrm{rec}((1+1)+1)) * \underline{x}) = (((1+1)+1) * (\mathrm{rec}((1+1)+1) * \underline{x})); \mathrm{eqSymmetry} \rhd ((((1+1)+1) * \mathrm{rec}((1+1)+1)) * \underline{x}) = (((1+1)+1) * (\mathrm{rec}((1+1)+1) * \underline{x})) \gg (((1+1)+1) * (\mathrm{rec}((1+1)+1) * \underline{x})) = ((((1+1)+1) * \mathrm{rec}((1+1)+1)) * \underline{x}); \mathrm{PositiveNonzero} \rhd \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(((1+1)+1) = 0)\mathrm{n}; \mathrm{Reciprocal} \rhd \dot{\neg}(((1+1)+1) = 0)\mathrm{n} \gg (((1+1)+1) * \mathrm{rec}((1+1)+1)) = 1; \mathrm{eqMultiplication} \rhd (((1+1)+1) * \mathrm{rec}((1+1)+1)) = 1 \gg ((((1+1)+1) * \mathrm{rec}((1+1)+1)) * \underline{x}) = (1 * \underline{x}); \mathrm{times1Left} \gg (1 * \underline{x}) = \underline{x}; \mathrm{eqTransitivity4} \rhd (((1+1)+1) * (\mathrm{rec}((1+1)+1) * \underline{x})) = ((((1+1)+1) * \mathrm{rec}((1+1)+1)) * \underline{x}) \rhd ((((1+1)+1) * \mathrm{rec}((1+1)+1)) * \underline{x}) = (1 * \underline{x}) \rhd (1 * \underline{x}) = \underline{x} \gg (((1+1)+1) * (\mathrm{rec}((1+1)+1) * \underline{x})) = \underline{x}; \mathrm{SubLessRight} \rhd (((1+1)+1) * (\mathrm{rec}((1+1)+1) * \underline{x})) = \underline{x} \rhd \dot{\neg}(0 <= (((1+1)+1) * (\mathrm{rec}((1+1)+1) * \underline{x})) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (((1+1)+1) * (\mathrm{rec}((1+1)+1) * \underline{x})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{PositiveDividedBy3} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \underline{x}))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{PositiveDividedBy3} \stackrel{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash 0 < 3 \gg \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveInverted} \rhd \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= \mathrm{rec}((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveFactors} \rhd \dot{\neg}(0 <= \mathrm{rec}((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \underline{x}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[|\mathrm{x}-\mathrm{x}| = 0 \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{x}\colon |(\underline{x}+(-\mathrm{u}\underline{x}))| = 0]$

$[|\mathrm{x}-\mathrm{x}| = 0 \stackrel{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \mathrm{eqReflexivity} \gg \underline{x} = \underline{x}; \mathrm{PositiveToLeft(Eq)(1term)} \rhd \underline{x} = \underline{x} \gg (\underline{x}+(-\mathrm{u}\underline{x})) = 0; \mathrm{SameNumerical} \rhd (\underline{x}+(-\mathrm{u}\underline{x})) = 0 \gg |(\underline{x}+(-\mathrm{u}\underline{x}))| = |0|; |0| = 0 \gg |0| = 0; \mathrm{eqTransitivity} \rhd |(\underline{x}+(-\mathrm{u}\underline{x}))| = |0| \rhd |0| = 0 \gg |(\underline{x}+(-\mathrm{u}\underline{x}))| = 0\rceil, \mathrm{p}_0, \mathsf{c})]$

$[1 < 2 \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \dot{\neg}(1 <= (1+1) \Rightarrow \dot{\neg}(\dot{\neg}(1 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[1 < 2 \stackrel{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash 0 < 1 \gg \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n}; \text{LessAddition} \rhd \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((0+1) <= (1+1) \Rightarrow \dot{\neg}(\dot{\neg}((0+1) = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}; \text{plus0Left} \gg (0+1) = 1; \text{SubLessLeft} \rhd (0+1) = 1 \rhd \dot{\neg}((0+1) <= (1+1) \Rightarrow \dot{\neg}(\dot{\neg}((0+1) = (1+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(1 <= (1+1) \Rightarrow \dot{\neg}(\dot{\neg}(1 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}; \text{Repetition} \rhd \dot{\neg}(1 <= (1+1) \Rightarrow \dot{\neg}(\dot{\neg}(1 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(1 <= (1+1) \Rightarrow \dot{\neg}(\dot{\neg}(1 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[1/3 < 2/3 \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \dot{\neg}(\mathrm{rec}((1+1)+1) <= ((1+1) * \mathrm{rec}((1+1)+1)) \Rightarrow \dot{\neg}(\dot{\neg}(\mathrm{rec}((1+1)+1) = ((1+1) * \mathrm{rec}((1+1)+1)))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[1/3 < 2/3 \stackrel{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash 1 < 2 \gg \dot{\neg}(1 <= (1+1) \Rightarrow \dot{\neg}(\dot{\neg}(1 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n}; 0 < 1/3 \gg \dot{\neg}(0 <= \mathrm{rec}((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}; \text{LessMultiplication} \rhd \dot{\neg}(0 <= \mathrm{rec}((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(1 <= (1+1) \Rightarrow \dot{\neg}(\dot{\neg}(1 = (1+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((1 * \mathrm{rec}((1+1)+1)) <= ((1+1) * \mathrm{rec}((1+1)+1)) \Rightarrow \dot{\neg}(\dot{\neg}((1 * \mathrm{rec}((1+1)+1)) = ((1+1) * \mathrm{rec}((1+1)+1)))\mathrm{n})\mathrm{n})\mathrm{n}; \text{times1Left} \gg (1 * \mathrm{rec}((1+1)+1)) = \mathrm{rec}((1+1)+1); \text{SubLessLeft} \rhd (1 * \mathrm{rec}((1+1)+1)) = \mathrm{rec}((1+1)+1) \rhd \dot{\neg}((1 * \mathrm{rec}((1+1)+1)) <= ((1+1) * \mathrm{rec}((1+1)+1)) \Rightarrow \dot{\neg}(\dot{\neg}((1 * \mathrm{rec}((1+1)+1)) = ((1+1) * \mathrm{rec}((1+1)+1)))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\mathrm{rec}((1+1)+1) <= ((1+1) * \mathrm{rec}((1+1)+1)) \Rightarrow \dot{\neg}(\dot{\neg}(\mathrm{rec}((1+1)+1) = ((1+1) * \mathrm{rec}((1+1)+1)))\mathrm{n})\mathrm{n})\mathrm{n}; \text{Repetition} \rhd \dot{\neg}(\mathrm{rec}((1+1)+1) <= ((1+1) * \mathrm{rec}((1+1)+1)) \Rightarrow \dot{\neg}(\dot{\neg}(\mathrm{rec}((1+1)+1) = ((1+1) * \mathrm{rec}((1+1)+1)))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\mathrm{rec}((1+1)+1) <= ((1+1) * \mathrm{rec}((1+1)+1)) \Rightarrow \dot{\neg}(\dot{\neg}(\mathrm{rec}((1+1)+1) = ((1+1) * \mathrm{rec}((1+1)+1)))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[(1/3)\mathrm{x} + (1/3)\mathrm{x} = (2/3)\mathrm{x} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon ((\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}) + (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) = (((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}})]$

$[(1/3)\mathrm{x} + (1/3)\mathrm{x} = (2/3)\mathrm{x} \stackrel{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \text{TwoWholes} \gg ((\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}) + (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) = ((1+1) * (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})); \text{timesAssociativity} \gg (((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}}) = ((1+1) * (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})); \text{eqSymmetry} \rhd (((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}}) = ((1+1) * (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) \gg ((1+1) * (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) = (((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}}); \text{eqTransitivity} \rhd ((\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}) + (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) = ((1+1) * (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) \rhd ((1+1) * (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) = (((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}}) \gg ((\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}) + (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) = (((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}}); \text{Repetition} \rhd ((\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}) + (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) = (((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}}) \gg ((\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}) + (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) = (((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[-(1/3)\mathrm{x} - (1/3)\mathrm{x} = -(2/3)\mathrm{x} \stackrel{\text{stmt}}{\rightarrow} \text{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon ((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}))) = (-\mathrm{u}(((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}}))]$

$[-(1/3)\mathrm{x} - (1/3)\mathrm{x} = -(2/3)\mathrm{x} \stackrel{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon (1/3)\mathrm{x} + (1/3)\mathrm{x} = (2/3)\mathrm{x} \gg ((\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}) + (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) = (((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}}); \text{EqNegated} \rhd ((\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}) + (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) = (((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}}) \gg (-\mathrm{u}((\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}) + (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}))) = (-\mathrm{u}(((1+1) * \mathrm{rec}((1+1)+1)) * \underline{\mathsf{x}})); -\mathrm{x} - \mathrm{y} = -(\mathrm{x} + \mathrm{y}) \gg ((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}))) = (-\mathrm{u}((\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}) + (\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}))); \text{eqTransitivity} \rhd ((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}})) + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{x}}))) =$

$(-u((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))) \rhd (-u((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))) = (-u(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})) \gg ((-u(\mathrm{rec}((1+1)+1)*\underline{x}))+(-u(\mathrm{rec}((1+1)+1)*\underline{x}))) = (-u(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}))\rceil, \mathrm{p}_0, \mathsf{c})]$

$[(2/3)\mathrm{x}+(1/3)\mathrm{x}=\mathrm{x} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon ((((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x}]$

$[(2/3)\mathrm{x}+(1/3)\mathrm{x}=\mathrm{x} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \mathrm{TwoWholes} \gg ((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x})); \mathrm{timesAssociativity} \gg (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x})); \mathrm{eqSymmetry} \rhd (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) \gg ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) = (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}); \mathrm{eqTransitivity} \rhd ((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) \rhd ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) = (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) \gg ((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}); \mathrm{eqAddition} \rhd ((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) \gg (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = ((((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})); \mathrm{ThreeThirds} \gg (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x}; \mathrm{Equality} \rhd (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = ((((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) \rhd (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x} \gg ((((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[-\mathrm{x}+(1/3)\mathrm{x}=-(2/3)\mathrm{x} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{x}\colon ((-u\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = (-u(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}))]$

$[-\mathrm{x}+(1/3)\mathrm{x}=-(2/3)\mathrm{x} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon (2/3)\mathrm{x}+(1/3)\mathrm{x}=\mathrm{x} \gg ((((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x}; \mathrm{PositiveToRight(Eq)} \rhd ((((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x} \gg (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = (\underline{x}+(-u(\mathrm{rec}((1+1)+1)*\underline{x}))); \mathrm{EqNegated} \rhd (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = (\underline{x}+(-u(\mathrm{rec}((1+1)+1)*\underline{x}))) \gg (-u(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})) = (-u(\underline{x}+(-u(\mathrm{rec}((1+1)+1)*\underline{x})))); \mathrm{MinusNegated} \gg (-u(\underline{x}+(-u(\mathrm{rec}((1+1)+1)*\underline{x})))) = ((\mathrm{rec}((1+1)+1)*\underline{x})+(-u\underline{x})); \mathrm{plusCommutativity} \gg ((\mathrm{rec}((1+1)+1)*\underline{x})+(-u\underline{x})) = ((-u\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})); \mathrm{eqTransitivity4} \rhd (-u(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})) = (-u(\underline{x}+(-u(\mathrm{rec}((1+1)+1)*\underline{x})))) \rhd (-u(\underline{x}+(-u(\mathrm{rec}((1+1)+1)*\underline{x})))) = ((\mathrm{rec}((1+1)+1)*\underline{x})+(-u\underline{x})) \rhd ((\mathrm{rec}((1+1)+1)*\underline{x})+(-u\underline{x})) = ((-u\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) \gg (-u(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})) = ((-u\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})); \mathrm{eqSymmetry} \rhd (-u(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})) = ((-u\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) \gg ((-u\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = (-u(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}))\rceil, \mathrm{p}_0, \mathsf{c})]$

line ell y because lemma (2/3)x+(1/3)x=x indeed 2/3 * meta x + 1/3 * meta x = meta x end line line ell a because lemma eqTransitivity modus ponens ell x modus ponens ell y indeed 1/3 * meta x + 2/3 * meta x = meta x end line

$[\mathrm{PreserveLessGreater} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(x1)}\colon \forall\underline{(x2)}\colon \forall\underline{(y1)}\colon \forall\underline{(y2)}\colon \forall\underline{z}\colon \underline{(x1)} <=$

((y1) + (−uz)) ⊢ ∸(|((x1) + (−u(x2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ∸(∸(|((x1) + (−u(x2)))| = (rec((1 + 1) + 1) ∗ z))n)n)n ⊢ ∸(|((y1) + (−u(y2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ∸(∸(|((y1) + (−u(y2)))| = (rec((1 + 1) + 1) ∗ z))n)n)n ⊢ (x2) <= ((y2) + (−u(rec((1 + 1) + 1) ∗ z)))]

[PreserveLessGreater $\stackrel{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(x1): ∀(x2): ∀(y1): ∀(y2): ∀z: (x1) <= ((y1) + (−uz)) ⊢ ∸(|((x1) + (−u(x2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ∸(∸(|((x1) + (−u(x2)))| = (rec((1 + 1) + 1) ∗ z))n)n)n ⊢ ∸(|((y1) + (−u(y2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ∸(∸(|((y1) + (−u(y2)))| = (rec((1 + 1) + 1) ∗ z))n)n)n ⊢ 0 <= |x| ≫ 0 <= |((x1) + (−u(x2)))|; leqLessTransitivity ⊳ 0 <= |((x1) + (−u(x2)))| ⊳ ∸(|((x1) + (−u(x2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ∸(∸(|((x1) + (−u(x2)))| = (rec((1 + 1) + 1) ∗ z))n)n)n ≫ ∸(0 <= (rec((1 + 1) + 1) ∗ z) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ z))n)n)n; PositiveTripled ⊳ ∸(0 <= (rec((1 + 1) + 1) ∗ z) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ z))n)n)n ≫ ∸(0 <= z ⇒ ∸(∸(0 = z)n)n)n; NumericalDifferenceLess ⊳ ∸(|((x1) + (−u(x2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ∸(∸(|((x1) + (−u(x2)))| = (rec((1 + 1) + 1) ∗ z))n)n)n ≫ ∸(∸(((x2) + (−u(rec((1 + 1) + 1) ∗ z))) <= (x1) ⇒ ∸(∸(((x2) + (−u(rec((1 + 1) + 1) ∗ z))) = (x1))n)n)n ⇒ ∸(∸((x1) <= ((x2) + (rec((1 + 1) + 1) ∗ z)) ⇒ ∸(∸((x1) = ((x2) + (rec((1+1)+1) ∗ z)))n)n)n)n)n; FirstConjunct ⊳ ∸(∸(((x2) + (−u(rec((1 + 1) + 1) ∗ z))) <= (x1) ⇒ ∸(∸(((x2) + (−u(rec((1 + 1) + 1) ∗ z))) = (x1))n)n)n ⇒ ∸(∸((x1) <= ((x2) + (rec((1 + 1) + 1) ∗ z)) ⇒ ∸(∸((x1) = ((x2) + (rec((1+1)+1) ∗ z)))n)n)n)n)n ≫ ∸(((x2) + (−u(rec((1+1)+1) ∗ z))) <= (x1) ⇒ ∸(∸(((x2) + (−u(rec((1 + 1) + 1) ∗ z))) = (x1))n)n)n; NegativeToRight(Less) ⊳ ∸(((x2) + (−u(rec((1 + 1) + 1) ∗ z))) <= (x1) ⇒ ∸(∸(((x2) + (−u(rec((1 + 1) + 1) ∗ z))) = (x1))n)n)n ≫ ∸((x2) <= ((x1) + (rec((1 + 1) + 1) ∗ z)) ⇒ ∸(∸((x2) = ((x1) + (rec((1 + 1) + 1) ∗ z)))n)n)n; leqAddition ⊳ (x1) <= ((y1) + (−uz)) ≫ ((x1) + (rec((1 + 1) + 1) ∗ z)) <= (((y1) + (−uz)) + (rec((1 + 1) + 1) ∗ z)); −x + (1/3)x = −(2/3)x ≫ ((−uz) + (rec((1 + 1) + 1) ∗ z)) = (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z)); Three2twoTerms ⊳ ((−uz) + (rec((1 + 1) + 1) ∗ z)) = (−u(((1 + 1) ∗ rec((1+1)+1)) ∗ z)) ≫ (((y1) + (−uz)) + (rec((1+1)+1) ∗ z)) = ((y1) + (−u(((1 + 1) ∗ rec((1+1)+1)) ∗ z))); subLeqRight ⊳ (((y1) + (−uz)) + (rec((1+1)+1) ∗ z)) = ((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))) ⊳ ((x1) + (rec((1 + 1) + 1) ∗ z)) <= (((y1) + (−uz)) + (rec((1 + 1) + 1) ∗ z)) ≫ ((x1) + (rec((1 + 1) + 1) ∗ z)) <= ((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))); NumericalDifferenceLess ⊳ ∸(|((y1) + (−u(y2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ∸(∸(|((y1) + (−u(y2)))| = (rec((1 + 1) + 1) ∗ z))n)n)n ≫ ∸(∸(((y2) + (−u(rec((1 + 1) + 1) ∗ z))) <= (y1) ⇒ ∸(∸(((y2) + (−u(rec((1 + 1) + 1) ∗ z))) = (y1))n)n)n ⇒ ∸(∸((y1) <= ((y2) + (rec((1 + 1) + 1) ∗ z)) ⇒ ∸(∸((y1) = ((y2) + (rec((1 + 1) + 1) ∗ z)))n)n)n)n)n; SecondConjunct ⊳ ∸(∸(((y2) + (−u(rec((1 + 1) + 1) ∗ z))) <= (y1) ⇒ ∸(∸(((y2) + (−u(rec((1 + 1) + 1) ∗ z))) = (y1))n)n)n ⇒ ∸(∸((y1) <= ((y2) + (rec((1 + 1) + 1) ∗ z)) ⇒ ∸(∸((y1) = ((y2) + (rec((1 + 1) + 1) ∗ z)))n)n)n)n)n ≫ ∸((y1) <= ((y2) + (rec((1 + 1) + 1) ∗ z)) ⇒ ∸(∸((y1) = ((y2) + (rec((1 + 1) + 1) ∗ z)))n)n)n; PositiveToLeft(Less) ⊳ ∸((y1) <= ((y2) + (rec((1+1)+1) ∗ z)) ⇒ ∸(∸((y1) = ((y2) + (rec((1+1)+1) ∗ z)))n)n)n ≫

¬̇(((y1)+(−u(rec((1+1)+1)∗z))) <= (y2) ⇒ ¬̇(¬̇(((y1)+(−u(rec((1+1)+1)∗z))) = (y2))n)n)n; LessAddition ⊳ ¬̇(((y1)+(−u(rec((1+1)+1)∗z))) <= (y2) ⇒ ¬̇(¬̇(((y1)+(−u(rec((1+1)+1)∗z))) = (y2))n)n)n ≫ ¬̇((((y1)+(−u(rec((1+1)+1)∗z)))+(−u(rec((1+1)+1)∗z))) <= ((y2)+(−u(rec((1+1)+1)∗z))) ⇒ ¬̇(¬̇((((y1) + (−u(rec((1 + 1) + 1) ∗ z))) + (−u(rec((1 + 1) + 1) ∗ z))) = ((y2) + (−u(rec((1 + 1) + 1) ∗ z))))n)n)n; plusAssociativity ≫ (((y1) + (−u(rec((1 + 1) + 1) ∗ z))) + (−u(rec((1 + 1) + 1) ∗ z))) = ((y1)+((−u(rec((1+1)+1)∗z))+(−u(rec((1+1)+1)∗z)))); −(1/3)x−(1/3)x = −(2/3)x ≫ ((−u(rec((1 + 1) + 1) ∗ z)) + (−u(rec((1 + 1) + 1) ∗ z))) = (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z)); EqAdditionLeft ⊳ ((−u(rec((1 + 1) + 1) ∗ z)) + (−u(rec((1 + 1) + 1) ∗ z))) = (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z)) ≫ ((y1) + ((−u(rec((1 + 1) + 1) ∗ z)) + (−u(rec((1 + 1) + 1) ∗ z)))) = ((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))); eqTransitivity ⊳ (((y1) + (−u(rec((1 + 1) + 1) ∗ z))) + (−u(rec((1 + 1) + 1) ∗ z))) = ((y1) + ((−u(rec((1 + 1) + 1) ∗ z)) + (−u(rec((1 + 1) + 1) ∗ z)))) ⊳ ((y1) + ((−u(rec((1 + 1) + 1) ∗ z)) + (−u(rec((1 + 1) + 1) ∗ z)))) = ((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))) ≫ (((y1) + (−u(rec((1 + 1) + 1) ∗ z))) + (−u(rec((1 + 1) + 1) ∗ z))) = ((y1)+(−u(((1+1)∗rec((1+1)+1))∗z))); SubLessLeft ⊳ (((y1)+(−u(rec((1+1)+1)∗z))) + (−u(rec((1+1)+1)∗z))) = ((y1) + (−u(((1+1)∗rec((1+1)+1))∗z))) ⊳ ¬̇((((y1)+(−u(rec((1+1)+1)∗z)))+(−u(rec((1+1)+1)∗z))) <= ((y2) + (−u(rec((1 + 1) + 1) ∗ z))) ⇒ ¬̇(¬̇((((y1) + (−u(rec((1 + 1) + 1) ∗ z))) + (−u(rec((1 + 1) + 1) ∗ z))) = ((y2) + (−u(rec((1 + 1) + 1) ∗ z))))n)n)n ≫ ¬̇(((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))) <= ((y2) + (−u(rec((1 + 1) + 1) ∗ z))) ⇒ ¬̇(¬̇(((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))) = ((y2) + (−u(rec((1 + 1) + 1) ∗ z))))n)n)n; LessLeqTransitivity ⊳ ¬̇((x2) <= ((x1)+(rec((1+1)+1)∗z)) ⇒ ¬̇(¬̇((x2) = ((x1)+(rec((1+1)+1)∗z)))n)n)n ⊳ ((x1) + (rec((1 + 1) + 1) ∗ z)) <= ((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))) ≫ ¬̇((x2) <= ((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))) ⇒ ¬̇(¬̇((x2) = ((y1)+(−u(((1+1)∗rec((1+1)+1))∗z))))n)n)n; LessTransitivity ⊳ ¬̇((x2) <= ((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))) ⇒ ¬̇(¬̇((x2) = ((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))))n)n)n ⊳ ¬̇(((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))) <= ((y2) + (−u(rec((1 + 1) + 1) ∗ z))) ⇒ ¬̇(¬̇(((y1) + (−u(((1 + 1) ∗ rec((1 + 1) + 1)) ∗ z))) = ((y2) + (−u(rec((1 + 1) + 1) ∗ z))))n)n)n ≫ ¬̇((x2) <= ((y2) + (−u(rec((1 + 1) + 1) ∗ z))) ⇒ ¬̇(¬̇((x2) = ((y2) + (−u(rec((1 + 1) + 1) ∗ z))))n)n)n; LessLeq ⊳ ¬̇((x2) <= ((y2) + (−u(rec((1 + 1) + 1) ∗ z))) ⇒ ¬̇(¬̇((x2) = ((y2) + (−u(rec((1 + 1) + 1) ∗ z))))n)n)n ≫ (x2) <= ((y2) + (−u(rec((1 + 1) + 1) ∗ z)))⌉, p_0, c)]

[ClosetolessIsLess $\overset{\text{stmt}}{\to}$ SystemQ ⊢ ∀(x1): ∀(x2): ∀y: ∀z: (x1) <= (y + (−uz)) ⊢ ¬̇(|((x1) + (−u(x2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ¬̇(¬̇(|((x1) + (−u(x2)))| = (rec((1 + 1) + 1) ∗ z))n)n)n ⊢ (x2) <= (y + (−u(rec((1 + 1) + 1) ∗ z)))]

[ClosetolessIsLess $\overset{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(x1): ∀(x2): ∀y: ∀z: (x1) <= (y + (−uz)) ⊢ ¬̇(|((x1) + (−u(x2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ¬̇(¬̇(|((x1) + (−u(x2)))| = (rec((1 + 1) + 1) ∗ z))n)n)n ⊢ 0 <= |x| ≫ 0 <= |((x1) + (−u(x2)))|; leqLessTransitivity ⊳ 0 <= |((x1) + (−u(x2)))| ⊳ ¬̇(|((x1) + (−u(x2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒

$\dot{\neg}(\dot{\neg}(|((\underline{(x1)} + (-u\underline{(x2)}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{z}}))n)n)n \gg \dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{z}}))n)n)n; |x - x| = 0 \gg$
$|(\underline{\mathsf{y}} + (-u\underline{\mathsf{y}}))| = 0; \mathrm{eqSymmetry} \rhd |(\underline{\mathsf{y}} + (-u\underline{\mathsf{y}}))| = 0 \gg 0 =$
$|(\underline{\mathsf{y}} + (-u\underline{\mathsf{y}}))|; \mathrm{SubLessLeft} \rhd 0 = |(\underline{\mathsf{y}} + (-u\underline{\mathsf{y}}))| \rhd \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*\underline{\mathsf{z}}))n)n)n \gg \dot{\neg}(|(\underline{\mathsf{y}}+(-u\underline{\mathsf{y}}))| <= (\mathrm{rec}((1+1)+1)*\underline{\mathsf{z}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{\mathsf{y}}+(-u\underline{\mathsf{y}}))| = (\mathrm{rec}((1+1)+1)*\underline{\mathsf{z}}))n)n)n; \mathrm{PreserveLessGreater} \rhd \underline{(x1)} <=$
$(\underline{\mathsf{y}} + (-u\underline{\mathsf{z}})) \rhd \dot{\neg}(|((\underline{(x1)} + (-u\underline{(x2)}))| <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(x1)} + (-u\underline{(x2)}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{z}}))n)n)n \rhd \dot{\neg}(|(\underline{\mathsf{y}} + (-u\underline{\mathsf{y}}))| <=$
$(\mathrm{rec}((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{y}} + (-u\underline{\mathsf{y}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{z}}))n)n)n \gg$
$\underline{(x2)} <= (\underline{\mathsf{y}} + (-u(\mathrm{rec}((1+1)+1) * \underline{\mathsf{z}})))\rceil, p_0, \mathsf{c})]$

$[\mathrm{SubLessLeft}(F) \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{(fx)}\colon\forall\underline{(fy)}\colon\forall\underline{(fz)}\colon\forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n \vdash$
$\dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= ((\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \vdash$
$\dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fy)}[\overline{\mathsf{m}}] <= ((\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n]$

$[\mathrm{SubLessLeft}(F) \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{(fx)}\colon\forall\underline{(fy)}\colon\forall\underline{(fz)}\colon\forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n \vdash$
$\dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= ((\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \vdash$
$\mathrm{Repetition} \rhd \forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n \gg$
$\forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n; \mathrm{Ded} \rhd \forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n \gg$
$\forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{obj}\overline{(n1)}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{(n1)} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n; \mathrm{A4} @(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \rhd \forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}]+(-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n \gg \dot{\neg}(\forall_{obj}\overline{(n1)}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))n)n)n \Rightarrow \overline{(n1)} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))n)n)n)n)n; \mathrm{Repetition} \rhd$

$\dot\neg(\forall_{obj}\overline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \gg$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n; \mathrm{Ded} \rhd$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \gg$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(n2)}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n; \forall\underline{(fx)}: \forall\underline{(fx)}: \forall\underline{(fz)}: \forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n \vdash$
$A4 @ \overline{\mathsf{m}} \rhd \forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow$
$\underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n \gg \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n; \mathrm{FirstConjunct} \rhd \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n \gg \dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n; \mathrm{PositiveDividedBy3} \rhd \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \gg \dot\neg(0 <= (rec((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(0 =$
$(rec((1+1)+1) * \overline{(\epsilon)}))n)n)n; \forall\underline{(fx)}: \forall\underline{(fy)}: \forall\underline{(fz)}: \forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <=$
$(rec((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1+1)+1) * \overline{(\epsilon)}))n)n)n \Rightarrow \overline{(n1)} <=$
$\overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= (rec((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = (rec((1+1)+1) * \overline{(\epsilon)}))n)n)n \vdash$
$\forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n \vdash if(\overline{(n2)} <= \overline{(n1)}, \overline{(n1)}, \overline{(n2)}) <= \overline{\mathsf{m}} \vdash \mathrm{MaxLeq}(1) \gg$
$\overline{(n1)} <= if(\overline{(n2)} <= \overline{(n1)}, \overline{(n1)}, \overline{(n2)}); \mathrm{leqTransitivity} \rhd \overline{(n1)} <= if(\overline{(n2)} <=$
$\overline{(n1)}, \overline{(n1)}, \overline{(n2)}) \rhd if(\overline{(n2)} <= \overline{(n1)}, \overline{(n1)}, \overline{(n2)}) <= \overline{\mathsf{m}} \gg \overline{(n1)} <=$
$\overline{\mathsf{m}}; \mathrm{MaxLeq}(2) \gg \overline{(n2)} <= if(\overline{(n2)} <= \overline{(n1)}, \overline{(n1)}, \overline{(n2)}); \mathrm{leqTransitivity} \rhd$
$\overline{(n2)} <= if(\overline{(n2)} <= \overline{(n1)}, \overline{(n1)}, \overline{(n2)}) \rhd if(\overline{(n2)} <= \overline{(n1)}, \overline{(n1)}, \overline{(n2)}) <= \overline{\mathsf{m}} \gg$
$\overline{(n2)} <= \overline{\mathsf{m}}; A4 @ \overline{\mathsf{m}} \rhd \forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n \gg \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n; \mathrm{FirstConjunct} \rhd \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n \gg \dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n; \mathrm{SecondConjunct} \rhd \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n \gg \overline{(n2)} <=$
$\overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})); \mathrm{MP} \rhd \overline{(n2)} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})) \rhd \overline{(n2)} <= \overline{\mathsf{m}} \gg \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})); A4 @ \overline{\mathsf{m}} \rhd \forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <= (rec((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(0 =$
$(rec((1+1)+1) * \overline{(\epsilon)}))n)n)n \Rightarrow \overline{(n1)} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <=$
$(rec((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| =$

$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveDividedBy3} \rhd \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MP2} \rhd \dot{\neg}\,(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}\,(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \overline{(\mathrm{n1})} <= \overline{\mathsf{m}} \gg \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ClosetolessIsLess} \rhd \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})) \rhd \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)})))); \mathrm{Ded} \rhd \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fz})}\colon \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \vdash \dot{\neg}\,(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(0 <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{TwiceExistMP} \rhd$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{n2})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Ded} \rhd \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \vdash \mathrm{if}(\overline{(\mathrm{n2})} <=$
$\overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \vdash \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))) \gg$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{(\mathrm{n1})} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))); \mathrm{ExistMP} \rhd \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <=$

$\overline{\mathsf{m}} \Rightarrow \dot\neg\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot\neg\,(\dot\neg\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)})))) \rhd \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{n1})}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(0 <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot\neg\,(\dot\neg\,(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <=$
$\overline{\mathsf{m}} \Rightarrow \dot\neg\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot\neg\,(\dot\neg\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))));\ \mathrm{TwiceExistMP} \rhd \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow$
$\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+$
$1) * \overline{(\epsilon)})))) \rhd \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{n2})}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\mathrm{n} \gg$
$\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+$
$1) * \overline{(\epsilon)}))));\ \mathrm{JoinConjuncts} \rhd \dot\neg\,(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot\neg\,(\dot\neg\,(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)})))) \gg \dot\neg\,(\dot\neg\,(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot\neg\,(\dot\neg\,(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <=$
$\overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n};\ \mathrm{Gen} \rhd \dot\neg\,(\dot\neg\,(0 <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot\neg\,(\dot\neg\,(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathrm{if}(\overline{(\mathrm{n2})} <=$
$\overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}]+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))))\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot\neg\,(\dot\neg\,(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow$
$\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n};\ \mathrm{IntroExist}\ @\ \mathrm{if}(\overline{(\mathrm{n2})} <=$
$\overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) \rhd \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot\neg\,(\dot\neg\,(0 = (\mathrm{rec}((1+$
$1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n} \gg \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot\neg\,(\dot\neg\,(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n};\ \mathrm{IntroExist}\ @(\mathrm{rec}((1+$
$1)+1) * \overline{(\epsilon)}) \rhd \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot\neg\,(\dot\neg\,(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n};\ \mathrm{Repetition} \rhd$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SubLessLeft(R)} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\overline{(\mathrm{fx})}\colon \forall\overline{(\mathrm{fy})}\colon \forall\overline{(\mathrm{fz})}\colon \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{SubLessLeft(R)} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\overline{(\mathrm{fx})}\colon \forall\overline{(\mathrm{fy})}\colon \forall\overline{(\mathrm{fz})}\colon \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}: \forall_{\mathrm{obj}}\overline{(f2)}: \forall_{\mathrm{obj}}\overline{(f3)}: \forall_{\mathrm{obj}}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(fy)}[\overline{\mathsf{m}}] +$
$(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)}))))n)n)n)n)n)n \vdash \mathrm{From} == \triangleright\{ph \in P(\{ph \in P(\{ph \in$
$P(P(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}: \forall_{\mathrm{obj}}\overline{(f2)}: \forall_{\mathrm{obj}}\overline{(f3)}: \forall_{\mathrm{obj}}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}: \forall_{\mathrm{obj}}\overline{(f2)}: \forall_{\mathrm{obj}}\overline{(f3)}: \forall_{\mathrm{obj}}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}: \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n; \mathrm{Repetition} \triangleright \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)}))))n)n)n)n)n)n \gg \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)}))))n)n)n)n)n)n; \mathrm{SubLessLeft(F)} \triangleright \forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| =$

$\overline{(\epsilon)})n)n)n)n)n \rhd \dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \gg$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fy)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n; \text{Repetition} \rhd$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fy)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \gg$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fy)}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n\rceil, p_0, \mathsf{c})]$

$[\text{ClosetogreaterIsGreater} \overset{stmt}{\rightarrow} \text{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon\forall\underline{(y1)}\colon\forall\underline{(y2)}\colon\forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} <=$
$(\underline{(y1)} + (-u\underline{\mathsf{z}})) \vdash \dot\neg(|(\underline{(y1)} + (-u\underline{(y2)}))| <= (rec((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg(|(\underline{(y1)} +$
$(-u\underline{(y2)}))| = (rec((1+1)+1) * \underline{\mathsf{z}}))n)n)n \vdash \underline{\mathsf{x}} <= (\underline{(y2)} + (-u(rec((1+1)+1) * \underline{\mathsf{z}})))]$

$[\text{ClosetogreaterIsGreater} \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon\forall\underline{(y1)}\colon\forall\underline{(y2)}\colon\forall\underline{\mathsf{z}}\colon \underline{\mathsf{x}} <=$
$(\underline{(y1)} + (-u\underline{\mathsf{z}})) \vdash \dot\neg(|(\underline{(y1)} + (-u\underline{(y2)}))| <= (rec((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(y1)} + (-u\underline{(y2)}))| = (rec((1+1)+1) * \underline{\mathsf{z}}))n)n)n \vdash 0 <= |x| \gg 0 <=$
$|(\underline{(y1)} + (-u\underline{(y2)}))|; \text{leqLessTransitivity} \rhd 0 <=$
$|(\underline{(y1)} + (-u\underline{(y2)}))| \rhd \dot\neg(|(\underline{(y1)} + (-u\underline{(y2)}))| <= (rec((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(y1)} + (-u\underline{(y2)}))| = (rec((1+1)+1) * \underline{\mathsf{z}}))n)n)n \gg \dot\neg(0 <=$
$(rec((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1+1)+1) * \underline{\mathsf{z}}))n)n)n; |x - x| = 0 \gg$
$|(\underline{\mathsf{x}} + (-u\underline{\mathsf{x}}))| = 0; \text{eqSymmetry} \rhd |(\underline{\mathsf{x}} + (-u\underline{\mathsf{x}}))| = 0 \gg 0 =$
$|(\underline{\mathsf{x}} + (-u\underline{\mathsf{x}}))|; \text{SubLessLeft} \rhd 0 = |(\underline{\mathsf{x}} + (-u\underline{\mathsf{x}}))| \rhd \dot\neg(0 <= (rec((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow$
$\dot\neg(\dot\neg(0 = (rec((1+1)+1) * \underline{\mathsf{z}}))n)n)n \gg \dot\neg(|(\underline{\mathsf{x}} + (-u\underline{\mathsf{x}}))| <= (rec((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{\mathsf{x}} + (-u\underline{\mathsf{x}}))| = (rec((1+1)+1) * \underline{\mathsf{z}}))n)n)n; \text{PreserveLessGreater} \rhd \underline{\mathsf{x}} <=$
$(\underline{(y1)} + (-u\underline{\mathsf{z}})) \rhd \dot\neg(|(\underline{\mathsf{x}} + (-u\underline{\mathsf{x}}))| <= (rec((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{\mathsf{x}} + (-u\underline{\mathsf{x}}))| = (rec((1+1)+1) * \underline{\mathsf{z}}))n)n)n \rhd \dot\neg(|(\underline{(y1)} + (-u\underline{(y2)}))| <=$
$(rec((1+1)+1) * \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg(|(\underline{(y1)} + (-u\underline{(y2)}))| =$
$(rec((1+1)+1) * \underline{\mathsf{z}}))n)n)n \gg \underline{\mathsf{x}} <= (\underline{(y2)} + (-u(rec((1+1)+1) * \underline{\mathsf{z}})))\rceil, p_0, \mathsf{c})]$

$[\text{SubLessRight(F)} \overset{stmt}{\rightarrow} \text{SystemQ} \vdash$
$\forall\underline{(fx)}\colon\forall\underline{(fy)}\colon\forall\underline{(fz)}\colon\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n \vdash$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fz)}[\overline{\mathsf{m}}] <= (\underline{(fx)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \vdash$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fz)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n]$

$[\text{SubLessRight(F)} \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash$
$\forall\underline{(fx)}\colon\forall\underline{(fy)}\colon\forall\underline{(fz)}\colon\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n \vdash$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fz)}[\overline{\mathsf{m}}] <= (\underline{(fx)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \vdash$

Repetition $\rhd \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; Ded $\rhd \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{n1})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; A4 $@(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \rhd \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{n1})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; Repetition $\rhd$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; Ded $\rhd$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{n2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fz})}\colon \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \vdash$
A4 $@\,\overline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow$
$\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n}$; FirstConjunct $\rhd \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}$; PositiveDividedBy3 $\rhd \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$

$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \vdash \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \vdash \mathrm{MaxLeq}(1) \gg$
$\overline{(\mathrm{n1})} <= \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}); \mathrm{leqTransitivity} \rhd \overline{(\mathrm{n1})} <= \mathrm{if}(\overline{(\mathrm{n2})} <=$
$\overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) \rhd \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \gg \overline{(\mathrm{n1})} <=$
$\overline{\mathsf{m}}; \mathrm{MaxLeq}(2) \gg \overline{(\mathrm{n2})} <= \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}); \mathrm{leqTransitivity} \rhd$
$\overline{(\mathrm{n2})} <= \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) \rhd \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \gg$
$\overline{(\mathrm{n2})} <= \overline{\mathsf{m}}; \mathrm{A4} @ \overline{\mathsf{m}} \rhd \forall_{\mathrm{obj}} \overline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{n2})} <=$
$\overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})); \mathrm{MP} \rhd \overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})) \rhd \overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \gg \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})); \mathrm{A4} @ \overline{\mathsf{m}} \rhd \forall_{\mathrm{obj}} \overline{\mathsf{m}} \colon \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveDividedBy3} \rhd \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MP2} \rhd \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \overline{(\mathrm{n1})} <= \overline{\mathsf{m}} \gg \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ClosetogreaterIsGreater} \rhd \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})) \rhd \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)})))); \mathrm{Ded} \rhd \forall \underline{(\mathrm{fx})} \colon \forall \underline{(\mathrm{fx})} \colon \forall \underline{(\mathrm{fz})} \colon \forall_{\mathrm{obj}} \overline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}} \overline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{TwiceExistMP} \rhd$
$\forall_{\mathrm{obj}} \overline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$

$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{n2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Ded} \rhd \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \vdash \mathrm{if}(\overline{(\mathrm{n2})} <=$
$\overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \vdash \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)})))) \gg$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{(\mathrm{n1})} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)})))); \mathrm{ExistMP} \rhd \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)})))) \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{n1})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{(\mathrm{n1})} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)})))); \mathrm{TwiceExistMP} \rhd \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow$
$\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+$
$1)*\overline{(\epsilon)})))) \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{n2})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+$
$1)*\overline{(\epsilon)})))); \mathrm{JoinConjuncts} \rhd \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)})))) \gg \dot{\neg}(\dot{\neg}(0 <= (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <=$
$\overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)})))))\mathrm{n})\mathrm{n}; \mathrm{Gen} \rhd \dot{\neg}(\dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*\overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathrm{if}(\overline{(\mathrm{n2})} <=$

$\overline{(n1)}, \overline{(n1)}, \overline{(n2)}) <= \overline{\mathsf{m}} \Rightarrow \underline{(fz)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}]+(-u(rec((1+1)+1)*\overline{(\epsilon)})))))n)n \gg$
$\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= (rec((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot\neg\,(\dot\neg\,(0 =$
$(rec((1+1)+1)*\overline{(\epsilon)}))n)n)n \Rightarrow \dot\neg\,(if(\overline{(n2)} <= \overline{(n1)}, \overline{(n1)}, \overline{(n2)}) <= \overline{\mathsf{m}} \Rightarrow$
$\underline{(fz)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u(rec((1+1)+1)*\overline{(\epsilon)})))))n)n;$ IntroExist @ $if(\overline{(n2)} <=$
$\overline{(n1)}, \overline{(n1)}, \overline{(n2)}) \rhd \forall_{obj}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= (rec((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot\neg\,(\dot\neg\,(0 = (rec((1+$
$1)+1)*\overline{(\epsilon)}))n)n)n \Rightarrow \dot\neg\,(if(\overline{(n2)} <= \overline{(n1)}, \overline{(n1)}, \overline{(n2)}) <= \overline{\mathsf{m}} \Rightarrow \underline{(fz)}[\overline{\mathsf{m}}] <=$
$(\underline{(fy)}[\overline{\mathsf{m}}] + (-u(rec((1+1)+1)*\overline{(\epsilon)})))))n)n \gg \dot\neg\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <=$
$(rec((1+1)+1)*\overline{(\epsilon)}) \Rightarrow \dot\neg\,(\dot\neg\,(0 = (rec((1+1)+1)*\overline{(\epsilon)}))n)n)n \Rightarrow \dot\neg\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\underline{(fz)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u(rec((1+1)+1)*\overline{(\epsilon)})))))n)n)n)n;$ IntroExist @$(rec((1+$
$1)+1)*\overline{(\epsilon)}) \rhd \dot\neg\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= (rec((1+1)+1)*\overline{(\epsilon)}) \Rightarrow$
$\dot\neg\,(\dot\neg\,(0 = (rec((1+1)+1)*\overline{(\epsilon)}))n)n)n \Rightarrow \dot\neg\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fz)}[\overline{\mathsf{m}}] <=$
$(\underline{(fy)}[\overline{\mathsf{m}}] + (-u(rec((1+1)+1)*\overline{(\epsilon)})))))n)n)n)n \gg$
$\dot\neg\,(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fz)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n;$ Repetition $\rhd$
$\dot\neg\,(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fz)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \gg$
$\dot\neg\,(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fz)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n\rceil, p_0, \mathsf{c})]$

[SubLessRight(R) $\overset{stmt}{\rightarrow}$ SystemQ $\vdash \forall\underline{(fx)}\colon\forall\underline{(fy)}\colon\forall\underline{(fz)}\colon \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow$
$\dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow$
$\dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(f1)}\colon\forall_{obj}\overline{(f2)}\colon\forall_{obj}\overline{(f3)}\colon\forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg\,(\forall_{obj}\overline{(s2)}\colon \dot\neg\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg\,(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg\,(\dot\neg\,(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow$
$\dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg\,(\forall_{obj}\overline{(op1)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{(op2)}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(op1)} \in N \Rightarrow$
$\dot\neg\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(f1)}\colon\forall_{obj}\overline{(f2)}\colon\forall_{obj}\overline{(f3)}\colon\forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg\,(\forall_{obj}\overline{(s2)}\colon \dot\neg\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg\,(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg\,(\dot\neg\,(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \vdash$
$\dot\neg\,(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg\,(\dot\neg\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$

$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{SubLessRight(R)} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\ulcorner \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \forall \underline{(\mathrm{fz})}\colon \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{From} == \triangleright\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$ $\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$ $\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$ $\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$ $\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$ $\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$ $\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$ $\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$ $\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$ $\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$ $(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <=$ $\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] +$ $(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SubLessRight(F)} \rhd \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$ $\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$ $\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$ $\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$ $\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$ $\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$ $\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd$ $\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$ $\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$ $\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$ $\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[-\mathrm{x} * \mathrm{y} = -(\mathrm{x} * \mathrm{y}) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{y}}) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}}))]$

$[-\mathrm{x} * \mathrm{y} = -(\mathrm{x} * \mathrm{y}) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \mathrm{Times}(-1)\mathrm{Left} \gg$ $((-\mathrm{u}1) * \underline{\mathsf{x}}) = (-\mathrm{u}\underline{\mathsf{x}}); \mathrm{eqMultiplication} \rhd ((-\mathrm{u}1) * \underline{\mathsf{x}}) = (-\mathrm{u}\underline{\mathsf{x}}) \gg$ $(((-\mathrm{u}1) * \underline{\mathsf{x}}) * \underline{\mathsf{y}}) = ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{y}}); \mathrm{eqSymmetry} \rhd (((-\mathrm{u}1) * \underline{\mathsf{x}}) * \underline{\mathsf{y}}) = ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{y}}) \gg$ $((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{y}}) = (((-\mathrm{u}1) * \underline{\mathsf{x}}) * \underline{\mathsf{y}}); \mathrm{timesAssociativity} \gg (((-\mathrm{u}1) * \underline{\mathsf{x}}) * \underline{\mathsf{y}}) =$ $((-\mathrm{u}1) * (\underline{\mathsf{x}} * \underline{\mathsf{y}})); \mathrm{Times}(-1)\mathrm{Left} \gg ((-\mathrm{u}1) * (\underline{\mathsf{x}} * \underline{\mathsf{y}})) =$ $(-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})); \mathrm{eqTransitivity4} \rhd ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{y}}) = (((-\mathrm{u}1) * \underline{\mathsf{x}}) * \underline{\mathsf{y}}) \rhd (((-\mathrm{u}1) * \underline{\mathsf{x}}) * \underline{\mathsf{y}}) =$ $((-\mathrm{u}1) * (\underline{\mathsf{x}} * \underline{\mathsf{y}})) \rhd ((-\mathrm{u}1) * (\underline{\mathsf{x}} * \underline{\mathsf{y}})) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}})) \gg ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{y}}) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{y}}))\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{LeqMultiplicationLeft} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon 0 <= \underline{\mathsf{z}} \vdash \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash (\underline{\mathsf{z}} * \underline{\mathsf{x}}) <=$ $(\underline{\mathsf{z}} * \underline{\mathsf{y}})]$

$[\mathrm{LeqMultiplicationLeft} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon 0 <= \underline{\mathsf{z}} \vdash \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash$ $\mathrm{leqMultiplication} \rhd 0 <= \underline{\mathsf{z}} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}); \mathrm{timesCommutativity} \gg$ $(\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * \underline{\mathsf{x}}); \mathrm{subLeqLeft} \rhd (\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * \underline{\mathsf{x}}) \rhd (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \gg (\underline{\mathsf{z}} * \underline{\mathsf{x}}) <=$ $(\underline{\mathsf{y}} * \underline{\mathsf{z}}); \mathrm{timesCommutativity} \gg (\underline{\mathsf{y}} * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * \underline{\mathsf{y}}); \mathrm{subLeqRight} \rhd (\underline{\mathsf{y}} * \underline{\mathsf{z}}) =$ $(\underline{\mathsf{z}} * \underline{\mathsf{y}}) \rhd (\underline{\mathsf{z}} * \underline{\mathsf{x}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \gg (\underline{\mathsf{z}} * \underline{\mathsf{x}}) <= (\underline{\mathsf{z}} * \underline{\mathsf{y}})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SameFmultiplication(Helper)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$ $\forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <= (\underline{(\epsilon)} * \mathrm{rec}\underline{(\mathrm{v1})}) \Rightarrow$

$\dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \Rightarrow$
$\forall_{\mathrm{obj}}\overline{(v2)}\colon \dot{\neg}(|\overline{(fz)}[\overline{(v2)}]| <= \overline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(|\overline{(fz)}[\overline{(v2)}]| = \overline{(v1)})n)n)n \Rightarrow \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n]$

$[SameFmultiplication(Helper) \overset{proof}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil SystemQ \vdash$
$\forall\overline{(v1)}\colon \forall\overline{(v2)}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\overline{(\epsilon)}\colon \forall\overline{(fx)}\colon \forall\overline{(fy)}\colon \forall\overline{(fz)}\colon \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \vdash$
$\forall_{\mathrm{obj}}\overline{(v2)}\colon \dot{\neg}(|\overline{(fz)}[\overline{(v2)}]| <= \overline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(|\overline{(fz)}[\overline{(v2)}]| = \overline{(v1)})n)n)n \vdash \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash A4 @ \overline{(v2)} \rhd \forall_{\mathrm{obj}}\overline{(v2)}\colon \dot{\neg}(|\overline{(fz)}[\overline{(v2)}]| <= \overline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(|\overline{(fz)}[\overline{(v2)}]| = \overline{(v1)})n)n)n \gg \dot{\neg}(|\overline{(fz)}[\overline{(v2)}]| <= \overline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(|\overline{(fz)}[\overline{(v2)}]| = \overline{(v1)})n)n)n; 0 <= |x| \gg 0 <= |\overline{(fz)}[\overline{(v2)}]|; leqLessTransitivity \rhd 0 <= |\overline{(fz)}[\overline{(v2)}]| \rhd \dot{\neg}(|\overline{(fz)}[\overline{(v2)}]| <= \overline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(|\overline{(fz)}[\overline{(v2)}]| = \overline{(v1)})n)n)n \gg \dot{\neg}(0 <= \overline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(v1)})n)n)n; PositiveInverted \rhd \dot{\neg}(0 <= \overline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(v1)})n)n)n \gg \dot{\neg}(0 <= \mathrm{rec}(v1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}(v1))n)n)n; PositiveFactors \rhd \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \rhd \dot{\neg}(0 <= \mathrm{rec}\overline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}\overline{(v1)})n)n)n \gg \dot{\neg}(0 <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n; A4 @ \underline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \gg \dot{\neg}(0 <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n; MP2 \rhd \dot{\neg}(0 <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \rhd \dot{\neg}(0 <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \gg \dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n; reciprocalToLeft(Less) \rhd \dot{\neg}(0 <= \overline{(v1)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(v1)})n)n)n \rhd \dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| <= (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\overline{(fx)}[\underline{\mathsf{m}}] + (-u\overline{(fy)}[\underline{\mathsf{m}}]))| = (\overline{(\epsilon)} * \mathrm{rec}\overline{(v1)}))n)n)n \gg$

$\dot{\neg}\,((|(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| * \overline{(\mathrm{v1})}) <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,((|(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| * \overline{(\mathrm{v1})}) = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n};\mathrm{TimesF} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] =$
$(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]);\mathrm{TimesF} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] =$
$(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]);\mathrm{EqNegated} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]) \gg (-\mathrm{u}\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]) = (-\mathrm{u}(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]));-\mathrm{x} * \mathrm{y} =$
$-(\mathrm{x} * \mathrm{y}) \gg ((-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]) * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]) = (-\mathrm{u}(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]));\mathrm{eqSymmetry} \rhd$
$((-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]) * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]) = (-\mathrm{u}(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])) \gg (-\mathrm{u}(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])) =$
$((-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]) * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]);\mathrm{eqTransitivity} \rhd (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]) = (-\mathrm{u}(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] *$
$\overline{(\mathrm{fz})}[\underline{\mathsf{m}}])) \rhd (-\mathrm{u}(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])) = ((-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]) * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]) \gg (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]) =$
$((-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]) * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]);\mathrm{AddEquations} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]) \rhd (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]) =$
$((-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]) * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]) \gg (\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])) =$
$(((\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]) + ((-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]) * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}]));\mathrm{DistributionOutLeft} \gg$

$(((\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}]) + ((-u\overline{(fy)}[\underline{m}]) * \overline{(fz)}[\underline{m}])) =$
$((\overline{(fz)}[\underline{m}] * ((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}]))); \mathrm{eqTransitivity} \rhd (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fy)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}])) =$
$(((\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}]) + ((-u\overline{(fy)}[\underline{m}]) * \overline{(fz)}[\underline{m}])) \rhd (((\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}]) +$
$((-u\overline{(fy)}[\underline{m}]) * \overline{(fz)}[\underline{m}])) = ((\overline{(fz)}[\underline{m}] * ((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}]))) \gg (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fy)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}])) =$
$((\overline{(fz)}[\underline{m}] * ((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}]))); \mathrm{SameNumerical} \rhd (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fy)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}])) =$
$((\overline{(fz)}[\underline{m}] * ((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}]))) \gg |(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fy)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}]))| =$
$|((\overline{(fz)}[\underline{m}] * ((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}])))|; \mathrm{SplitNumericalProduct} \gg$
$|((\overline{(fz)}[\underline{m}] * ((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}])))| = (|\overline{(fz)}[\underline{m}]| * |((\overline{(fx)}[\underline{m}] +$
$(-u\overline{(fy)}[\underline{m}]))|); \mathrm{timesCommutativity} \gg (|\overline{(fz)}[\underline{m}]| * |((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}]))|) =$
$(|((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}]))| * |\overline{(fz)}[\underline{m}]|); \mathrm{eqTransitivity4} \rhd |(\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fy)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}]))| =$
$|((\overline{(fz)}[\underline{m}] * ((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}])))| \rhd |((\overline{(fz)}[\underline{m}] * ((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}])))| =$
$(|\overline{(fz)}[\underline{m}]| * |((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}]))|) \rhd (|\overline{(fz)}[\underline{m}]| * |((\overline{(fx)}[\underline{m}] + (-u\overline{(fy)}[\underline{m}]))|) =$

(|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|) ≫ |({ph ∈ {ph ∈ P(P(Union({N, Q}))) | $\dot\neg$(∀$_{obj}$(op1): $\dot\neg$($\dot\neg$(∀$_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒ $\dot\neg$((op2) ∈ Q)n)n ⇒ $\dot\neg$(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | $\dot\neg$(∀$_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{ph ∈ {ph ∈ P(P(Union({N, Q}))) | $\dot\neg$(∀$_{obj}$(op1): $\dot\neg$($\dot\neg$(∀$_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒ $\dot\neg$((op2) ∈ Q)n)n ⇒ $\dot\neg$(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | $\dot\neg$(∀$_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m]))| = (|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|); eqSymmetry ▷ |({ph ∈ {ph ∈ P(P(Union({N, Q}))) | $\dot\neg$(∀$_{obj}$(op1): $\dot\neg$($\dot\neg$(∀$_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒ $\dot\neg$((op2) ∈ Q)n)n ⇒ $\dot\neg$(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | $\dot\neg$(∀$_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{ph ∈ {ph ∈ P(P(Union({N, Q}))) | $\dot\neg$(∀$_{obj}$(op1): $\dot\neg$($\dot\neg$(∀$_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒ $\dot\neg$((op2) ∈ Q)n)n ⇒ $\dot\neg$(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | $\dot\neg$(∀$_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m]))| = (|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|) ≫ (|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|) = |({ph ∈ {ph ∈ P(P(Union({N, Q}))) | $\dot\neg$(∀$_{obj}$(op1): $\dot\neg$($\dot\neg$(∀$_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒ $\dot\neg$((op2) ∈ Q)n)n ⇒ $\dot\neg$(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | $\dot\neg$(∀$_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{ph ∈ {ph ∈ P(P(Union({N, Q}))) | $\dot\neg$(∀$_{obj}$(op1): $\dot\neg$($\dot\neg$(∀$_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒ $\dot\neg$((op2) ∈ Q)n)n ⇒ $\dot\neg$(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | $\dot\neg$(∀$_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m]))|; A4 @ (fz)[m] ▷ ∀$_{obj}$(v2): $\dot\neg$(|(fz)[(v2)]| <= (v1) ⇒ $\dot\neg$($\dot\neg$(|(fz)[(v2)]| = (v1))n)n)n ≫ |(fz)[m]| <= (v1); 0 <= |x| ≫ 0 <= |((fx)[m] + (−u(fy)[m]))|; LeqMultiplicationLeft ▷ 0 <= |((fx)[m] + (−u(fy)[m]))| ▷ |(fz)[m]| <= (v1) ≫ (|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|) <= (|((fx)[m] + (−u(fy)[m]))| ∗ (v1)); leqLessTransitivity ▷ (|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|) <= (|((fx)[m] + (−u(fy)[m]))| ∗ (v1)) ▷ $\dot\neg$(((|((fx)[m] + (−u(fy)[m]))| ∗ (v1)) <= (ϵ) ⇒ $\dot\neg$($\dot\neg$(((|((fx)[m] + (−u(fy)[m]))| ∗ (v1)) = (ϵ))n)n)n ≫ $\dot\neg$(((|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|) <= (ϵ) ⇒ $\dot\neg$($\dot\neg$(((|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|) = (ϵ))n)n)n; SubLessLeft ▷ (|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|) = |({ph ∈ {ph ∈ P(P(Union({N, Q}))) | $\dot\neg$(∀$_{obj}$(op1): $\dot\neg$($\dot\neg$(∀$_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒ $\dot\neg$((op2) ∈ Q)n)n ⇒ $\dot\neg$(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | $\dot\neg$(∀$_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{ph ∈ {ph ∈ P(P(Union({N, Q}))) | $\dot\neg$(∀$_{obj}$(op1): $\dot\neg$($\dot\neg$(∀$_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒ $\dot\neg$((op2) ∈ Q)n)n ⇒ $\dot\neg$(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | $\dot\neg$(∀$_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m]))| ▷ $\dot\neg$(((|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|) <= (ϵ) ⇒ $\dot\neg$($\dot\neg$(((|((fx)[m] + (−u(fy)[m]))| ∗ |(fz)[m]|) = (ϵ))n)n)n ≫ $\dot\neg$(|({ph ∈ {ph ∈ P(P(Union({N, Q}))) | $\dot\neg$(∀$_{obj}$(op1): $\dot\neg$($\dot\neg$(∀$_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒ $\dot\neg$((op2) ∈ Q)n)n ⇒ $\dot\neg$(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | $\dot\neg$(∀$_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{ph ∈ {ph ∈

$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\overline{(\mathrm{v1})}\colon \forall\overline{(\mathrm{v2})}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\overline{(\epsilon)}\colon \forall\overline{(\mathrm{fx})}\colon \forall\overline{(\mathrm{fy})}\colon \forall\overline{(\mathrm{fz})}\colon \mathrm{Ded} \rhd$
$\forall\overline{(\mathrm{v1})}\colon \forall\overline{(\mathrm{v2})}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\overline{(\epsilon)}\colon \forall\overline{(\mathrm{fx})}\colon \forall\overline{(\mathrm{fy})}\colon \forall\overline{(\mathrm{fz})}\colon \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <= (\underline{(\epsilon)} * \mathrm{rec}(\overline{\mathrm{v1}})) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)} * \mathrm{rec}(\overline{\mathrm{v1}})))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <=$
$(\underline{(\epsilon)} * \mathrm{rec}(\overline{\mathrm{v1}})) \Rightarrow \dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = (\underline{(\epsilon)} * \mathrm{rec}(\overline{\mathrm{v1}})))\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}\overline{(\mathrm{v2})}\colon \dot{\neg}(|\overline{(\mathrm{fz})}[\overline{(\mathrm{v2})}]| <= \overline{(\mathrm{v1})} \Rightarrow \dot{\neg}(\dot{\neg}(|\overline{(\mathrm{fz})}[\overline{(\mathrm{v2})}]| = \overline{(\mathrm{v1})})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <= (\underline{(\epsilon)} * \mathrm{rec}(\overline{\mathrm{v1}})) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)} * \mathrm{rec}(\overline{\mathrm{v1}})))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= (\underline{(\epsilon)} * \mathrm{rec}(\overline{\mathrm{v1}})) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = (\underline{(\epsilon)} * \mathrm{rec}(\overline{\mathrm{v1}})))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\overline{(\mathrm{v2})}\colon \dot{\neg}(|\overline{(\mathrm{fz})}[\overline{(\mathrm{v2})}]| <= \overline{(\mathrm{v1})} \Rightarrow \dot{\neg}(\dot{\neg}(|\overline{(\mathrm{fz})}[\overline{(\mathrm{v2})}]| = \overline{(\mathrm{v1})})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]+(-\mathrm{u}\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))|=$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{SameFmultiplication}\overset{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash$
$\forall\underline{(\mathrm{v1})}\colon\forall\underline{(\mathrm{v2})}\colon\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon\forall\underline{(\mathrm{fz})}\colon\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(0<=$
$\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\vdash$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow$
$\dot{\neg}(|(\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]+(-\mathrm{u}\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]+(-\mathrm{u}\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{SameFmultiplication}\overset{\mathrm{proof}}{\rightarrow}\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash$
$\forall\underline{(\mathrm{v1})}\colon\forall\underline{(\mathrm{v2})}\colon\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon\forall\underline{(\mathrm{fz})}\colon\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(0<=$
$\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\vdash$
$\mathrm{Repetition}\rhd\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\gg$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow$
$\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|=$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n};\mathrm{Ded}\rhd\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\gg$
$\forall_{\mathrm{obj}}\underline{(\epsilon)}\colon\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(0<=\underline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\underline{\mathsf{n}}<=\underline{\mathsf{m}}\Rightarrow$
$\dot{\neg}(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|<=\underline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|=$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n};\mathrm{A4}\ @(\underline{(\epsilon)}*\mathrm{rec}\underline{(\mathrm{v1})})\rhd\forall_{\mathrm{obj}}\underline{(\epsilon)}\colon\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(0<=\underline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(0=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\underline{\mathsf{n}}<=\underline{\mathsf{m}}\Rightarrow\dot{\neg}(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|<=\underline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\gg\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(0<=$

$((\epsilon) * \mathrm{rec}(v1)) \Rightarrow \dot\neg(\dot\neg(0 = ((\epsilon) * \mathrm{rec}(v1)))n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow$
$\dot\neg(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| <= ((\epsilon) * \mathrm{rec}(v1)) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| = ((\epsilon) * \mathrm{rec}(v1)))n)n)n)n)n; \mathrm{F-Bounded} \gg$
$\dot\neg(\forall_{obj}(v1){:}\ \dot\neg(\forall_{obj}(v2){:}\ \dot\neg(|(fz)[(v2)]| <= (v1) \Rightarrow \dot\neg(\dot\neg(|(fz)[(v2)]| =$
$(v1))n)n)n)n)n; \mathrm{SameFmultiplication(Helper)} \gg \forall_{obj}\underline{m}{:}\ \dot\neg(0 <=$
$((\epsilon) * \mathrm{rec}(v1)) \Rightarrow \dot\neg(\dot\neg(0 = ((\epsilon) * \mathrm{rec}(v1)))n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow$
$\dot\neg(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| <= ((\epsilon) * \mathrm{rec}(v1)) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| = ((\epsilon) * \mathrm{rec}(v1)))n)n)n \Rightarrow$
$\forall_{obj}(v2){:}\ \dot\neg(|(fz)[(v2)]| <= (v1) \Rightarrow \dot\neg(\dot\neg(|(fz)[(v2)]| = (v1))n)n)n \Rightarrow \dot\neg(0 <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow \dot\neg(|(\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow$
$\dot\neg((op2) \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}{:}\ \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fx)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\underline{m}] + (-u\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow$
$\dot\neg((op2) \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}{:}\ \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\underline{m}]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow \dot\neg((op2) \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}{:}\ \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fx)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\underline{m}] + (-u\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow$
$\dot\neg((op2) \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}{:}\ \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\underline{m}]))| =$
$(\epsilon))n)n)n; \mathrm{ExistMP2} \rhd \forall_{obj}\underline{m}{:}\ \dot\neg(0 <= ((\epsilon) * \mathrm{rec}(v1)) \Rightarrow \dot\neg(\dot\neg(0 =$
$((\epsilon) * \mathrm{rec}(v1)))n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow \dot\neg(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| <=$
$((\epsilon) * \mathrm{rec}(v1)) \Rightarrow \dot\neg(\dot\neg(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| = ((\epsilon) * \mathrm{rec}(v1)))n)n)n \Rightarrow$
$\forall_{obj}(v2){:}\ \dot\neg(|(fz)[(v2)]| <= (v1) \Rightarrow \dot\neg(\dot\neg(|(fz)[(v2)]| = (v1))n)n)n \Rightarrow \dot\neg(0 <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow \dot\neg(|(\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow$
$\dot\neg((op2) \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}{:}\ \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fx)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\underline{m}] + (-u\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow$
$\dot\neg((op2) \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}{:}\ \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\underline{m}]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow \dot\neg((op2) \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}{:}\ \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fx)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\underline{m}] + (-u\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow$
$\dot\neg((op2) \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}{:}\ \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\underline{m}]))| =$
$(\epsilon))n)n)n \rhd \dot\neg(\forall_{obj}\underline{n}{:}\ \dot\neg(\forall_{obj}\underline{m}{:}\ \dot\neg(0 <= ((\epsilon) * \mathrm{rec}(v1)) \Rightarrow \dot\neg(\dot\neg(0 =$
$((\epsilon) * \mathrm{rec}(v1)))n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow \dot\neg(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| <=$

$((\epsilon) * \mathrm{rec}(v1)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\underline{\mathsf{m}}] + (-u(fy)[\underline{\mathsf{m}}]))| =$
$((\epsilon) * \mathrm{rec}(v1)))n)n)n)n)n \rhd \dot{\neg}(\forall_{\mathrm{obj}}(v1){:}\ \dot{\neg}(\forall_{\mathrm{obj}}(v2){:}\ \dot{\neg}(|(fz)[(v2)]| <= (v1) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(fz)[(v2)]| = (v1))n)n)n)n)n \gg \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| =$
$(\epsilon))n)n)n; \mathrm{Gen} \rhd \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in$
$N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| = (\epsilon))n)n)n \gg$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$

$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})n)n)n; \mathrm{IntroExist} @ \underline{\mathsf{n}} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})n)n)n \gg$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in$
$\{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})n)n)n)n)n; \mathrm{Gen} \rhd \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$

$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})n)n)n)n)n \gg \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})n)n)n)n)n; \mathrm{Ded} \rhd \forall_{\mathrm{obj}}\underline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})n)n)n)n)n \gg \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{\overline{(\epsilon)}})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$

$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n; \mathrm{Repetition} \rhd \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n \gg \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n], p_0, \mathsf{c})]$
$[EqMultiplication(R) \overset{stmt}{\to} SystemQ \vdash \forall\underline{(fx)}: \forall\underline{(fy)}: \forall\underline{(fz)}: \{ph \in P(\{ph \in$
$P(\{ph \in P(P(Union(\{N, Q\}))) | \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$

$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \vdash \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$

$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}]$

$[\mathrm{EqMultiplication}(\mathrm{R}) \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \forall\underline{(fz)}\colon \{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\underline{(fy)}[\overline{\mathsf{m}}] +$
$(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \mathrm{From} == \triangleright\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$

$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$

$\dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$

$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$

$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow$

$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg\,(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot\neg\,(\dot\neg\,(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$

$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$

$\dot\neg\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$

$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SameFmultiplication} \rhd \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow$

$\dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot\neg\,(\dot\neg\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$

$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$

$\dot\neg\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$

$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$

$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$

$\dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot\neg\,(\dot\neg\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$

$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$

$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$

$\dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| =$

$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{To} == \rhd \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 =$

$\overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$

$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$

$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$

$\dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot\neg\,(\dot\neg\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$

$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\mathsf{e}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$

$P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}(\forall_{obj}\underline{m}\colon \dot{-}(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\overline{m}]))| =$
$\overline{(\epsilon)})n)n)n)n)n \gg \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$f_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in f_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in f_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}\colon \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$f_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{-}(\forall_{obj}\overline{n}\colon \dot{-}(\forall_{obj}\overline{m}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{m}\colon \dot{-}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fx)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{m}\colon \dot{-}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fx)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$f_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in f_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in f_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}\colon \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$f_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{-}(\forall_{obj}\overline{n}\colon \dot{-}(\forall_{obj}\overline{m}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{m}\colon \dot{-}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{m}\colon \dot{-}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; eqReflexivity \gg \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in f_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in f_{Ph} \Rightarrow$

$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}(s1)\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}(s1)\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; \mathrm{eqReflexivity} \gg \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}(s1)\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$

$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; eqTransitivity4 \rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\})))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} \rhd \{ph \in \mathrm{P}(\{ph \in \mathrm{P}(\{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in \mathrm{P}(\{ph \in \mathrm{P}(\{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$

$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| =$
$(\epsilon))n)n)n)n)n\} \rhd \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{obj}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}(r1)\colon (r1) \in$
$f_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{obj}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(f1)\colon \forall_{obj}(f2)\colon \forall_{obj}(f3)\colon \forall_{obj}(f4)\colon \{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in f_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in f_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1)\colon (s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2)\colon \dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$f_{Ph})n)n)n)n\}) \mid \forall_{obj}(\epsilon)\colon \dot{\neg}(\forall_{obj}\overline{n}\colon \dot{\neg}(\forall_{obj}\overline{m}\colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{obj}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{obj}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| = (\epsilon))n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{obj}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}(r1)\colon (r1) \in$
$f_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{obj}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(f1)\colon \forall_{obj}(f2)\colon \forall_{obj}(f3)\colon \forall_{obj}(f4)\colon \{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in f_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in f_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1)\colon (s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2)\colon \dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$f_{Ph})n)n)n)n\}) \mid \forall_{obj}(\epsilon)\colon \dot{\neg}(\forall_{obj}\overline{n}\colon \dot{\neg}(\forall_{obj}\overline{m}\colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{obj}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{obj}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * (fz)[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| = (\epsilon))n)n)n)n)n\} \gg$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{obj}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}(r1)\colon (r1) \in$
$f_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1)\colon \dot{\neg}(\dot{\neg}(\forall_{obj}(op2)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(f1)\colon \forall_{obj}(f2)\colon \forall_{obj}(f3)\colon \forall_{obj}(f4)\colon \{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in f_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in f_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1)\colon (s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2)\colon \dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$

$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\bar{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\bar{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\bar{\mathsf{n}} <= \bar{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\bar{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\bar{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\bar{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\bar{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\bar{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\bar{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\bar{\mathsf{n}} <= \bar{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\bar{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\bar{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\bar{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\bar{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{x} * 0 = 0(\mathrm{F}) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}]$

$[\mathrm{x} * 0 = 0(\mathrm{F}) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{fx})}\colon \mathrm{TimesF} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] = ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}]); \mathrm{NatType} \gg \underline{\mathsf{m}} \in$
$\mathrm{N}; 0\mathrm{f} \rhd \underline{\mathsf{m}} \in \mathrm{N} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}] = 0; \mathrm{EqMultiplicationLeft} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}] = 0 \gg$
$((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}]) = ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * 0); \mathrm{x} * 0 = 0 \gg$
$((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * 0) = 0; \mathrm{eqSymmetry} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}] = 0 \gg 0 = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}]; \mathrm{eqTransitivity5} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] = ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}]) \rhd ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}]) = ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * 0) \rhd ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * 0) = 0 \rhd 0 =$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}] \gg \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}]; \mathrm{Gen} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}] \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}]; \mathrm{To} =$
$\mathrm{f} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}] \gg \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$

$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{x} * 0 = 0(\mathrm{R}) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$

$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\}]$
$[x * 0 = 0(R) \stackrel{proof}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil SystemQ \vdash \forall\underline{(fx)}\colon x * 0 = 0(F) \gg \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}]))\}\})n)n\} = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}; EqualsSameF \rhd \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}]))\}\})n)n\} = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\} \gg$
$\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{n}\colon \dot{\neg}(\forall_{obj}\overline{m}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{n} <= \overline{m} \Rightarrow$
$\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}]))\}\})n)n\}[\overline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}]))\}\})n)n\}[\overline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{To} == \rhd\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$

$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$(\epsilon))n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in$
$N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$(\epsilon))n)n)n)n)n\}; eqReflexivity \gg \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$

$(\epsilon))n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))\ |$
$\dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\})\ |\ \dot{\neg}(\dot{\neg}(\forall_{obj}(r1){:}\ (r1) \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(f1){:}\ \forall_{obj}(f2){:}\ \forall_{obj}(f3){:}\ \forall_{obj}(f4){:}\ \{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in \mathsf{f}_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1){:}\ (s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2){:}\ \dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\})\ |\ \forall_{obj}(\epsilon){:}\ \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}{:}\ \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}{:}\ \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))\ |$
$\dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}\ |\ \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\})))\ |$
$\dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}\ |\ \dot{\neg}(\forall_{obj}(crs1){:}\ \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{(crs1), (crs1)\}, \{(crs1), 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))\ |$
$\dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}\ |\ \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\})))\ |$
$\dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}\ |\ \dot{\neg}(\forall_{obj}(crs1){:}\ \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{(crs1), (crs1)\}, \{(crs1), 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$(\epsilon))n)n)n)n)n\};$ == Transitivity $\rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\})))\ |\ \dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\})\ |$
$\dot{\neg}(\dot{\neg}(\forall_{obj}(r1){:}\ (r1) \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(f1){:}\ \forall_{obj}(f2){:}\ \forall_{obj}(f3){:}\ \forall_{obj}(f4){:}\ \{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in \mathsf{f}_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1){:}\ (s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2){:}\ \dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\})\ |\ \forall_{obj}(\epsilon){:}\ \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}{:}\ \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}{:}\ \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))\ |$
$\dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}\ |\ \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\})))\ |$
$\dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}\ |\ \dot{\neg}(\forall_{obj}(crs1){:}\ \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{(crs1), (crs1)\}, \{(crs1), 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))\ |$
$\dot{\neg}(\forall_{obj}(op1){:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}\ |\ \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\})))\ |$

$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \rhd \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{-}(\dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}(crs1)\colon \dot{-}(\mathsf{c}_{Ph} =$
$\{\{(crs1), (crs1)\}, \{(crs1), 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$(\epsilon))n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}(r1)\colon (r1) \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow$
$\dot{-}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}(f1)\colon \forall_{obj}(f2)\colon \forall_{obj}(f3)\colon \forall_{obj}(f4)\colon \{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in \mathsf{f}_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{-}(\forall_{obj}(s1)\colon (s1) \in N \Rightarrow \dot{-}(\forall_{obj}(s2)\colon \dot{-}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}(\epsilon)\colon \dot{-}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{-}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{-}(0 <= (\epsilon) \Rightarrow \dot{-}(\dot{-}(0 = (\epsilon))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}(crs1)\colon \dot{-}(\mathsf{c}_{Ph} =$
$\{\{(crs1), (crs1)\}, \{(crs1), 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{-}(\dot{-}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in$
$N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} =$
$\{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}(crs1)\colon \dot{-}(\mathsf{c}_{Ph} =$
$\{\{(crs1), (crs1)\}, \{(crs1), 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = (\epsilon))n)n)n)n)n\} \gg$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}(r1)\colon (r1) \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow$
$\dot{-}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}(f1)\colon \forall_{obj}(f2)\colon \forall_{obj}(f3)\colon \forall_{obj}(f4)\colon \{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in \mathsf{f}_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{-}(\forall_{obj}(s1)\colon (s1) \in N \Rightarrow \dot{-}(\forall_{obj}(s2)\colon \dot{-}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}(\epsilon)\colon \dot{-}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{-}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{-}(0 <= (\epsilon) \Rightarrow \dot{-}(\dot{-}(0 = (\epsilon))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}(crs1)\colon \dot{-}(\mathsf{c}_{Ph} =$
$\{\{(crs1), (crs1)\}, \{(crs1), 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{-}(\dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}(op1)\colon \dot{-}(\dot{-}(\forall_{obj}(op2)\colon \dot{-}(\dot{-}(\dot{-}((op1) \in N \Rightarrow \dot{-}((op2) \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{Ph} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; \text{Repetition} \rhd \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$

$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}((\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{-}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))) \mid$

$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{DistributionLeft} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon (\underline{\mathsf{x}} * (\underline{\mathsf{y}} + \underline{\mathsf{z}})) = ((\underline{\mathsf{y}} * \underline{\mathsf{x}}) + (\underline{\mathsf{z}} * \underline{\mathsf{x}}))]$

$[\mathrm{DistributionLeft} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \mathrm{DistributionOutLeft} \gg ((\underline{\mathsf{y}} * \underline{\mathsf{x}}) + (\underline{\mathsf{z}} * \underline{\mathsf{x}})) = (\underline{\mathsf{x}} * (\underline{\mathsf{y}} + \underline{\mathsf{z}})); \mathrm{eqSymmetry} \rhd ((\underline{\mathsf{y}} * \underline{\mathsf{x}}) + (\underline{\mathsf{z}} * \underline{\mathsf{x}})) = (\underline{\mathsf{x}} * (\underline{\mathsf{y}} + \underline{\mathsf{z}})) \gg (\underline{\mathsf{x}} * (\underline{\mathsf{y}} + \underline{\mathsf{z}})) = ((\underline{\mathsf{y}} * \underline{\mathsf{x}}) + (\underline{\mathsf{z}} * \underline{\mathsf{x}}))\rceil, \mathrm{p}_0, \mathsf{c})]$

XX 'nonnegativeFactors' er en konsekvens heraf

$[\mathrm{MultiplyEquations(Leq)} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon 0 <= \underline{\mathsf{x}} \vdash 0 <= \underline{\mathsf{z}} \vdash \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash \underline{\mathsf{z}} <= \underline{\mathsf{u}} \vdash (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{u}})]$

$[\mathrm{MultiplyEquations(Leq)} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon 0 <= \underline{\mathsf{x}} \vdash 0 <= \underline{\mathsf{z}} \vdash \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash \underline{\mathsf{z}} <= \underline{\mathsf{u}} \vdash \mathrm{leqMultiplication} \rhd 0 <= \underline{\mathsf{z}} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}); \mathrm{leqTransitivity} \rhd 0 <= \underline{\mathsf{x}} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \gg 0 <= \underline{\mathsf{y}}; \mathrm{LeqMultiplicationLeft} \rhd 0 <= \underline{\mathsf{y}} \rhd \underline{\mathsf{z}} <= \underline{\mathsf{u}} \gg (\underline{\mathsf{y}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{u}}); \mathrm{leqTransitivity} \rhd (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \rhd (\underline{\mathsf{y}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{u}}) \gg (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{u}})\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{LessMultiplication(F)(Helper2)} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon \forall \underline{\mathsf{v}}\colon \dot{\neg}(0 <= \underline{\mathsf{u}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{u}})n)n)n \vdash \dot{\neg}(0 <= \underline{\mathsf{v}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{v}})n)n)n \vdash \underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}})) \vdash 0 <= (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{v}})) \vdash (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= ((\underline{\mathsf{y}} * \underline{\mathsf{z}}) + (-\mathrm{u}(\underline{\mathsf{u}} * \underline{\mathsf{v}})))]$

$[\mathrm{LessMultiplication(F)(Helper2)} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon \forall \underline{\mathsf{v}}\colon \dot{\neg}(0 <= \underline{\mathsf{u}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{u}})n)n)n \vdash \dot{\neg}(0 <= \underline{\mathsf{v}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{v}})n)n)n \vdash \underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}})) \vdash 0 <= (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{v}})) \vdash \mathrm{negativeToLeft(Leq)} \rhd \underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}})) \gg (\underline{\mathsf{x}} + \underline{\mathsf{u}}) <= \underline{\mathsf{y}}; \mathrm{plusCommutativity} \gg (\underline{\mathsf{x}} + \underline{\mathsf{u}}) = (\underline{\mathsf{u}} + \underline{\mathsf{x}}); \mathrm{subLeqLeft} \rhd (\underline{\mathsf{x}} + \underline{\mathsf{u}}) = (\underline{\mathsf{u}} + \underline{\mathsf{x}}) \rhd (\underline{\mathsf{x}} + \underline{\mathsf{u}}) <= \underline{\mathsf{y}} \gg (\underline{\mathsf{u}} + \underline{\mathsf{x}}) <= \underline{\mathsf{y}}; \mathrm{PositiveToRight(Leq)} \rhd (\underline{\mathsf{u}} + \underline{\mathsf{x}}) <= \underline{\mathsf{y}} \gg \underline{\mathsf{u}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})); \mathrm{negativeToLeft(Leq)(1term)} \rhd 0 <= (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{v}})) \gg \underline{\mathsf{v}} <= \underline{\mathsf{z}}; \mathrm{LessLeq} \rhd \dot{\neg}(0 <= \underline{\mathsf{u}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{u}})n)n)n \gg 0 <= \underline{\mathsf{u}}; \mathrm{LessLeq} \rhd \dot{\neg}(0 <= \underline{\mathsf{v}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{v}})n)n)n \gg 0 <= \underline{\mathsf{v}}; \mathrm{MultiplyEquations(Leq)} \rhd 0 <= \underline{\mathsf{u}} \rhd 0 <= \underline{\mathsf{v}} \rhd \underline{\mathsf{u}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})) \rhd \underline{\mathsf{v}} <= \underline{\mathsf{z}} \gg (\underline{\mathsf{u}} * \underline{\mathsf{v}}) <= ((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})) * \underline{\mathsf{z}}); \mathrm{timesCommutativity} \gg ((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})) * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))); \mathrm{DistributionLeft} \gg (\underline{\mathsf{z}} * (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))) = ((\underline{\mathsf{y}} * \underline{\mathsf{z}}) + ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{z}})); -\mathrm{x} * \mathrm{y} = -(\mathrm{x} * \mathrm{y}) \gg ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{z}}) =$

$(-\mathrm{u}(\underline{x}*\underline{z}));\mathrm{EqAdditionLeft}\rhd((-\mathrm{u}\underline{x})*\underline{z})=(-\mathrm{u}(\underline{x}*\underline{z}))\gg((\underline{y}*\underline{z})+((-\mathrm{u}\underline{x})*\underline{z}))=((\underline{y}*\underline{z})+(-\mathrm{u}(\underline{x}*\underline{z})));\mathrm{eqTransitivity4}\rhd((\underline{y}+(-\mathrm{u}\underline{x}))*\underline{z})=(\underline{z}*(\underline{y}+(-\mathrm{u}\underline{x})))\rhd(\underline{z}*(\underline{y}+(-\mathrm{u}\underline{x})))=((\underline{y}*\underline{z})+((-\mathrm{u}\underline{x})*\underline{z}))\rhd((\underline{y}*\underline{z})+((-\mathrm{u}\underline{x})*\underline{z}))=((\underline{y}*\underline{z})+(-\mathrm{u}(\underline{x}*\underline{z})))\gg((\underline{y}+(-\mathrm{u}\underline{x}))*\underline{z})=((\underline{y}*\underline{z})+(-\mathrm{u}(\underline{x}*\underline{z})));\mathrm{subLeqRight}\rhd((\underline{y}+(-\mathrm{u}\underline{x}))*\underline{z})=((\underline{y}*\underline{z})+(-\mathrm{u}(\underline{x}*\underline{z})))\rhd(\underline{u}*\underline{v})<=((\underline{y}+(-\mathrm{u}\underline{x}))*\underline{z})\gg(\underline{u}*\underline{v})<=((\underline{y}*\underline{z})+(-\mathrm{u}(\underline{x}*\underline{z})));\mathrm{negativeToLeft(Leq)}\rhd(\underline{u}*\underline{v})<=((\underline{y}*\underline{z})+(-\mathrm{u}(\underline{x}*\underline{z})))\gg((\underline{u}*\underline{v})+(\underline{x}*\underline{z}))<=(\underline{y}*\underline{z});\mathrm{plusCommutativity}\gg((\underline{u}*\underline{v})+(\underline{x}*\underline{z}))=((\underline{x}*\underline{z})+(\underline{u}*\underline{v}));\mathrm{subLeqLeft}\rhd((\underline{u}*\underline{v})+(\underline{x}*\underline{z}))=((\underline{x}*\underline{z})+(\underline{u}*\underline{v}))\rhd((\underline{u}*\underline{v})+(\underline{x}*\underline{z}))<=(\underline{y}*\underline{z})\gg((\underline{x}*\underline{z})+(\underline{u}*\underline{v}))<=(\underline{y}*\underline{z});\mathrm{PositiveToRight(Leq)}\rhd((\underline{x}*\underline{z})+(\underline{u}*\underline{v}))<=(\underline{y}*\underline{z})\gg(\underline{x}*\underline{z})<=((\underline{y}*\underline{z})+(-\mathrm{u}(\underline{u}*\underline{v})))\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{LessMultiplication(F)(Helper)}\overset{\mathrm{stmt}}{\to}\mathrm{SystemQ}\vdash\forall\underline{m}\colon\forall\underline{n}\colon\forall(\epsilon)_1\colon\forall(\epsilon2)\colon\forall(\mathrm{fx})\colon\forall(\mathrm{fy})\colon\forall(\mathrm{fz})\colon\forall_{\mathrm{obj}}\underline{m}\colon\dot\neg(\dot\neg(0<=(\epsilon)_1\Rightarrow\dot\neg(\dot\neg(0=(\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{n}<=\underline{m}\Rightarrow(\mathrm{fx})[\underline{m}]<=((\mathrm{fy})[\underline{m}]+(-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n}\Rightarrow\forall_{\mathrm{obj}}\underline{m}\colon\dot\neg(\dot\neg(0<=(\epsilon2)\Rightarrow\dot\neg(\dot\neg(0=(\epsilon2))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{n}<=\underline{m}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P(P(Union(\{N,Q\})))}\mid\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon\dot\neg(\dot\neg(\dot\neg((\mathrm{op1})\in\mathrm{N}\Rightarrow\dot\neg((\mathrm{op2})\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon\dot\neg(\mathsf{c}_{\mathrm{Ph}}=\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),0\}\})\mathrm{n})\mathrm{n}\}[\underline{m}]<=((\mathrm{fz})[\underline{m}]+(-\mathrm{u}(\epsilon2))))\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\dot\neg(0<=((\epsilon)_1*(\epsilon2))\Rightarrow\dot\neg(\dot\neg(0=((\epsilon)_1*(\epsilon2)))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{n}<=\underline{m}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P(P(Union(\{N,Q\})))}\mid\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon\dot\neg(\dot\neg(\dot\neg((\mathrm{op1})\in\mathrm{N}\Rightarrow\dot\neg((\mathrm{op2})\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}\underline{m}\colon\dot\neg(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{m},\underline{m}\},\{\underline{m},((\mathrm{fx})[\underline{m}]*(\mathrm{fz})[\underline{m}])\}\})\mathrm{n})\mathrm{n}\}[\underline{m}]<=(\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P(P(Union(\{N,Q\})))}\mid\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon\dot\neg(\dot\neg(\dot\neg((\mathrm{op1})\in\mathrm{N}\Rightarrow\dot\neg((\mathrm{op2})\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}\underline{m}\colon\dot\neg(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{m},\underline{m}\},\{\underline{m},((\mathrm{fy})[\underline{m}]*(\mathrm{fz})[\underline{m}])\}\})\mathrm{n})\mathrm{n}\}[\underline{m}]+(-\mathrm{u}((\epsilon)_1*(\epsilon2)))))\mathrm{n})\mathrm{n}]$

$[\mathrm{LessMultiplication(F)(Helper)}\overset{\mathrm{proof}}{\to}\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash\forall\underline{m}\colon\forall\underline{n}\colon\forall(\epsilon)_1\colon\forall(\epsilon2)\colon\forall(\mathrm{fx})\colon\forall(\mathrm{fy})\colon\forall(\mathrm{fz})\colon\forall_{\mathrm{obj}}\underline{m}\colon\dot\neg(\dot\neg(0<=(\epsilon)_1\Rightarrow\dot\neg(\dot\neg(0=(\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{n}<=\underline{m}\Rightarrow(\mathrm{fx})[\underline{m}]<=((\mathrm{fy})[\underline{m}]+(-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n}\vdash\forall_{\mathrm{obj}}\underline{m}\colon\dot\neg(\dot\neg(0<=(\epsilon2)\Rightarrow\dot\neg(\dot\neg(0=(\epsilon2))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{n}<=\underline{m}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P(P(Union(\{N,Q\})))}\mid\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon\dot\neg(\dot\neg(\dot\neg((\mathrm{op1})\in\mathrm{N}\Rightarrow\dot\neg((\mathrm{op2})\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon\dot\neg(\mathsf{c}_{\mathrm{Ph}}=\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),0\}\})\mathrm{n})\mathrm{n}\}[\underline{m}]<=((\mathrm{fz})[\underline{m}]+(-\mathrm{u}(\epsilon2))))\mathrm{n})\mathrm{n}\vdash\mathrm{A4}\,@\,\underline{m}\rhd\forall_{\mathrm{obj}}\underline{m}\colon\dot\neg(\dot\neg(0<=(\epsilon)_1\Rightarrow\dot\neg(\dot\neg(0=(\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{n}<=\underline{m}\Rightarrow(\mathrm{fx})[\underline{m}]<=((\mathrm{fy})[\underline{m}]+(-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n}\gg\dot\neg(\dot\neg(0<=(\epsilon)_1\Rightarrow\dot\neg(\dot\neg(0=(\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{n}<=\underline{m}\Rightarrow(\mathrm{fx})[\underline{m}]<=((\mathrm{fy})[\underline{m}]+(-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n};\mathrm{A4}\,@\,\underline{m}\rhd\forall_{\mathrm{obj}}\underline{m}\colon\dot\neg(\dot\neg(0<=(\epsilon2)\Rightarrow\dot\neg(\dot\neg(0=(\epsilon2))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{n}<=\underline{m}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P(P(Union(\{N,Q\})))}\mid\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon\dot\neg(\dot\neg(\dot\neg((\mathrm{op1})\in\mathrm{N}\Rightarrow\dot\neg((\mathrm{op2})\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon\dot\neg(\mathsf{c}_{\mathrm{Ph}}=\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),0\}\})\mathrm{n})\mathrm{n}\}[\underline{m}]<=((\mathrm{fz})[\underline{m}]+(-\mathrm{u}(\epsilon2))))\mathrm{n})\mathrm{n}\gg\dot\neg(\dot\neg(0<=(\epsilon2)\Rightarrow\dot\neg(\dot\neg(0=(\epsilon2))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{n}<=\underline{m}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P(P(Union(\{N,Q\})))}\mid\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon\dot\neg(\dot\neg(\dot\neg((\mathrm{op1})\in\mathrm{N}\Rightarrow$

$\dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$((\mathrm{fz})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon 2))))\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot\neg(\dot\neg(0 <= (\epsilon)_1 \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n} \gg \dot\neg(0 <=$
$(\epsilon)_1 \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot\neg(\dot\neg(0 <= (\epsilon 2) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= ((\mathrm{fz})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon 2))))\mathrm{n})\mathrm{n} \gg \dot\neg(0 <=$
$(\epsilon 2) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveFactors} \rhd \dot\neg(0 <= (\epsilon)_1 \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot\neg(0 <= (\epsilon 2) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 <= ((\epsilon)_1 * (\epsilon 2)) \Rightarrow$
$\dot\neg(\dot\neg(0 = ((\epsilon)_1 *$
$(\epsilon 2)))\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall(\epsilon)_1\colon \forall(\epsilon 2)\colon \forall(\mathrm{fx})\colon \forall(\mathrm{fy})\colon \forall(\mathrm{fz})\colon \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon)_1 \Rightarrow$
$\dot\neg(\dot\neg(0 = (\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon 2) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$((\mathrm{fz})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon 2))))\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash \mathrm{A4} @ \underline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon)_1 \Rightarrow$
$\dot\neg(\dot\neg(0 = (\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\dot\neg(0 <= (\epsilon)_1 \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <=$
$((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n}; \mathrm{A4} @ \underline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon 2) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= ((\mathrm{fz})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon 2))))\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\dot\neg(0 <= (\epsilon 2) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$((\mathrm{fz})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon 2))))\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot\neg(\dot\neg(0 <= (\epsilon)_1 \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n} \gg \dot\neg(0 <=$
$(\epsilon)_1 \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot\neg(\dot\neg(0 <= (\epsilon 2) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}),(\mathrm{crs1})\},\{(\mathrm{crs1}),0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= ((\mathrm{fz})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon 2))))\mathrm{n})\mathrm{n} \gg \dot\neg(0 <=$
$(\epsilon 2) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot\neg(\dot\neg(0 <= (\epsilon)_1 \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n} \gg \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$(\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)); \mathrm{MP} \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <=$
$((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)) \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \gg (\mathrm{fx})[\underline{\mathsf{m}}] <=$
$((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)); \mathrm{SecondConjunct} \rhd \dot\neg(\dot\neg(0 <= (\epsilon 2) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$

$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] <= (\underline{(fz)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon2)})))n)n \gg \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] <= (\underline{(fz)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon2)})); MP \rhd \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] <= (\underline{(fz)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon2)})) \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \gg$
$\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] <= (\underline{(fz)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon2)})); NatType \gg \underline{\mathsf{m}} \in$
$N; 0f \rhd \underline{\mathsf{m}} \in N \gg \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] = 0; subLeqLeft \rhd \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] = 0 \rhd \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] <=$
$(\underline{(fz)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon2)})) \gg 0 <=$
$(\underline{(fz)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon2)})); LessMultiplication(F)(Helper2) \rhd \dot\neg(0 <= \underline{(\epsilon)_1} \Rightarrow$
$\dot\neg(\dot\neg(0 = \underline{(\epsilon)_1})n)n)n \rhd \dot\neg(0 <= \underline{(\epsilon2)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon2)})n)n)n \rhd \underline{(fx)}[\underline{\mathsf{m}}] <=$
$(\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)_1})) \rhd 0 <= (\underline{(fz)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon2)})) \gg (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) <=$
$((\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon2)}))); TimesF(Sym) \gg (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) =$
$\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]; subLeqLeft \rhd (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) =$
$\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] \rhd (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) <=$
$((\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon2)}))) \gg \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] <=$
$((\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon2)}))); TimesF(Sym) \gg (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) =$

$\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]; \mathrm{eqAddition} \rhd (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) =$
$\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] \gg$
$(((\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))) = (\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))); \mathrm{subLeqRight} \rhd$
$(((\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))) = (\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))) \rhd \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] <=$
$(((\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}]) + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))) \gg \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-u(\underline{(\epsilon)_1} *$
$\underline{(\epsilon 2)}))); \forall\underline{\mathsf{m}}: \forall\underline{\mathsf{n}}: \forall\underline{(\epsilon)_1}: \forall\underline{(\epsilon 2)}: \forall\underline{(fx)}: \forall\underline{(fy)}: \forall\underline{(fz)}: \mathrm{Ded} \rhd$
$\forall\underline{\mathsf{m}}: \forall\underline{\mathsf{n}}: \forall\underline{(\epsilon)_1}: \forall\underline{(\epsilon 2)}: \forall\underline{(fx)}: \forall\underline{(fy)}: \forall\underline{(fz)}: \forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)_1})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)_1})))n)n \vdash$
$\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon 2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon 2)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] <=$
$((\underline{(fz)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon 2)})))n)n \vdash \dot{\neg}(0 <= (\underline{(\epsilon)_1} * \underline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))n)n)n \gg \forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)_1})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)_1})))n)n \Rightarrow \forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon 2)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon 2)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}] <= ((\underline{(fz)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon 2)})))n)n \Rightarrow \dot{\neg}(0 <=$
$(\underline{(\epsilon)_1} * \underline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))n)n)n; \mathrm{Ded} \rhd$
$\forall\underline{\mathsf{m}}: \forall\underline{\mathsf{n}}: \forall\underline{(\epsilon)_1}: \forall\underline{(\epsilon 2)}: \forall\underline{(fx)}: \forall\underline{(fy)}: \forall\underline{(fz)}: \forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)_1})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)_1})))n)n \vdash$

$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= (\epsilon 2) \Rightarrow \dot{-}(\dot{-}(0 = (\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{-}(\dot{-}(\dot{-}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{-}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} = \{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$((\mathrm{fz})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon 2))))\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{-}(\dot{-}(\dot{-}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{-}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{-}(\dot{-}(\dot{-}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{-}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}((\epsilon)_1 *$
$(\epsilon 2)))) \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= (\epsilon)_1 \Rightarrow \dot{-}(\dot{-}(0 = (\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$(\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= (\epsilon 2) \Rightarrow \dot{-}(\dot{-}(0 =$
$(\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{-}(\dot{-}(\dot{-}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{-}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= ((\mathrm{fz})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon 2))))\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{-}(\dot{-}(\dot{-}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{-}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{-}(\dot{-}(\dot{-}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{-}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}((\epsilon)_1 *$
$(\epsilon 2))));\mathrm{JoinConjuncts}(2\mathrm{conditions}) \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= (\epsilon)_1 \Rightarrow \dot{-}(\dot{-}(0 =$
$(\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= (\epsilon 2) \Rightarrow \dot{-}(\dot{-}(0 = (\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{-}(\dot{-}(\dot{-}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{-}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} = \{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$((\mathrm{fz})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon 2))))\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(0 <= ((\epsilon)_1 * (\epsilon 2)) \Rightarrow \dot{-}(\dot{-}(0 =$
$((\epsilon)_1 * (\epsilon 2)))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= (\epsilon)_1 \Rightarrow \dot{-}(\dot{-}(0 = (\epsilon)_1)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon)_1)))\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= (\epsilon 2) \Rightarrow$
$\dot{-}(\dot{-}(0 = (\epsilon 2))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{-}(\dot{-}(\dot{-}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{-}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= ((\mathrm{fz})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon 2))))\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{-}(\dot{-}(\dot{-}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{-}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{-}(\dot{-}(\dot{-}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$

$\dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{(\epsilon)_1} *$
$\underline{(\epsilon 2)})))) \gg \forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)_1})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)_1})))n)n \Rightarrow \forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon 2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon 2)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon 2)})))n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 <= (\underline{(\epsilon)_1} * \underline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{(\epsilon)_1} * \underline{(\epsilon 2)})))))n)n\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{LessMultiplication}(F) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall \underline{\mathsf{m}}\colon \forall \underline{\mathsf{n}}\colon \forall \underline{(\epsilon)_1}\colon \forall \underline{(\epsilon 2)}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \forall \underline{(\mathrm{fz})}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n \vdash$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n \vdash$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n]$

$[\mathrm{LessMultiplication}(F) \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall \underline{\mathsf{m}}\colon \forall \underline{\mathsf{n}}\colon \forall \underline{(\epsilon)_1}\colon \forall \underline{(\epsilon 2)}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \forall \underline{(\mathrm{fz})}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n \vdash$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$

$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{Repetition} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\, \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\, \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\, \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\, \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Ded} \rhd$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\, \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\, \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\epsilon)_1}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}{:}\, \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\, \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)_1})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\, \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\, \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\, \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\, \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\, \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\, \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Ded} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\, \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\, \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\, \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\epsilon 2)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}{:}\, \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\, \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon 2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon 2)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\, \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon 2)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessMultiplication}(\mathrm{F})(\mathrm{Helper}) \gg$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\, \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)_1})))\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\, \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon 2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon 2)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\, \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon 2)})))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 <= (\underline{(\epsilon)_1} * \underline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\, \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\, \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}(\overline{(\epsilon)_1} *$
$\overline{(\epsilon 2)}))))))\mathrm{n})\mathrm{n}; \mathrm{TwiceExistMP2} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})))\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon 2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon 2)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon 2)})))\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(0 <= (\overline{(\epsilon)_1} * \overline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\overline{(\epsilon)_1} * \overline{(\epsilon 2)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}(\overline{(\epsilon)_1} *$
$\overline{(\epsilon 2)}))))))\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)_1}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon 2)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon 2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon 2)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon 2)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(0 <= (\overline{(\epsilon)_1} * \overline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\overline{(\epsilon)_1} * \overline{(\epsilon 2)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}(\overline{(\epsilon)_1} *$
$\overline{(\epsilon 2)}))))))\mathrm{n})\mathrm{n}; \mathrm{Gen} \rhd \dot{\neg}(\dot{\neg}(0 <= (\overline{(\epsilon)_1} * \overline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)_1} * \overline{(\epsilon 2)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}(\overline{(\epsilon)_1} *$
$\overline{(\epsilon 2)}))))))\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= (\overline{(\epsilon)_1} * \overline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)_1} * \overline{(\epsilon 2)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$

$\{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u(\overline{(\epsilon)_1} *$
$\overline{(\epsilon2)})))))n)n; \mathrm{IntroExist}\ @\ \underline{n} \rhd \forall_{obj}\underline{m}: \dot\neg(\dot\neg(0 <= (\overline{(\epsilon)_1} * \overline{(\epsilon2)}) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\overline{(\epsilon)_1} * \overline{(\epsilon2)}))n)n)n \Rightarrow \dot\neg(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u(\overline{(\epsilon)_1} *$
$\overline{(\epsilon2)})))))n)n \gg \dot\neg(\forall_{obj}\underline{n}: \dot\neg(\forall_{obj}\underline{m}: \dot\neg(\dot\neg(0 <= (\overline{(\epsilon)_1} * \overline{(\epsilon2)}) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\overline{(\epsilon)_1} * \overline{(\epsilon2)}))n)n)n \Rightarrow \dot\neg(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u(\overline{(\epsilon)_1} *$
$\overline{(\epsilon2)})))))n)n)n)n; \mathrm{IntroExist}\ @(\overline{(\epsilon)_1} * \overline{(\epsilon2)}) \rhd \dot\neg(\forall_{obj}\underline{n}: \dot\neg(\forall_{obj}\underline{m}: \dot\neg(\dot\neg(0 <=$
$(\overline{(\epsilon)_1} * \overline{(\epsilon2)}) \Rightarrow \dot\neg(\dot\neg(0 = (\overline{(\epsilon)_1} * \overline{(\epsilon2)}))n)n)n \Rightarrow \dot\neg(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u(\overline{(\epsilon)_1} *$
$\overline{(\epsilon2)})))))n)n)n)n \gg \dot\neg(\forall_{obj}\underline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\underline{n}: \dot\neg(\forall_{obj}\underline{m}: \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] +$
$(-u(\underline{(\epsilon)}))))n)n)n)n)n)n; \mathrm{Ded} \rhd \dot\neg(\forall_{obj}\underline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\underline{n}: \dot\neg(\forall_{obj}\underline{m}: \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},(\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$

$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n \gg \dot{-}(\forall_{obj}\overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n; \text{Repetition} \rhd \dot{-}(\forall_{obj}\overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n \gg \dot{-}(\forall_{obj}\overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n\rceil, p_0, \mathsf{c})]$
$[\text{LessMultiplication}(R) \overset{stmt}{\rightarrow} \text{SystemQ} \vdash$
$\forall\underline{(fx)}: \forall\underline{(fy)}: \forall\underline{(fz)}: \dot{-}(\forall_{obj}\overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\overline{(crs1)}: \dot{-}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] <= (\underline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \vdash$
$\dot{-}(\forall_{obj}\overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \vdash$
$\dot{-}(\forall_{obj}\overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$

$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{LessMultiplication(R)} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\ulcorner \mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon\forall\underline{(\mathrm{fz})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{Repetition} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessMultiplication(F)} \rhd$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$

$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{-}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fy})[\underline{\mathsf{m}}]*(\mathrm{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n;\mathrm{Repetition}\rhd\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{-}(\dot{-}(0<=$
$\overline{(\epsilon)}\Rightarrow\dot{-}(\dot{-}(0=\overline{(\epsilon)})n)n)n\Rightarrow\dot{-}(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\{ph\in\{ph\in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(op1)}\in N\Rightarrow\dot{-}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{-}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fx})[\underline{\mathsf{m}}]*(\mathrm{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]<=(\{ph\in\{ph\in$
$P(P(\mathrm{Union}(\{N,Q\})))\mid\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(op1)}\in N\Rightarrow$
$\dot{-}(\overline{(op2)}\in Q)n)n\Rightarrow\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{-}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fy})[\underline{\mathsf{m}}]*(\mathrm{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n\gg\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{-}(\dot{-}(0<=\overline{(\epsilon)}\Rightarrow$
$\dot{-}(\dot{-}(0=\overline{(\epsilon)})n)n)n\Rightarrow\dot{-}(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\{ph\in\{ph\in P(P(\mathrm{Union}(\{N,Q\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(op1)}\in N\Rightarrow\dot{-}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{-}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fx})[\underline{\mathsf{m}}]*(\mathrm{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]<=(\{ph\in\{ph\in$
$P(P(\mathrm{Union}(\{N,Q\})))\mid\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(op1)}\in N\Rightarrow$
$\dot{-}(\overline{(op2)}\in Q)n)n\Rightarrow\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{-}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fy})[\underline{\mathsf{m}}]*(\mathrm{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n;\mathrm{eqReflexivity}\gg\{ph\in P(\{ph\in P(\{ph\in$
$P(P(\mathrm{Union}(\{N,Q\})))\mid\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(op1)}\in N\Rightarrow$
$\dot{-}(\overline{(op2)}\in Q)n)n\Rightarrow\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\})\mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(r1)}\colon\overline{(r1)}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(op1)}\in N\Rightarrow$
$\dot{-}(\overline{(op2)}\in Q)n)n\Rightarrow\dot{-}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(f1)}\colon\forall_{\mathrm{obj}}\overline{(f2)}\colon\forall_{\mathrm{obj}}\overline{(f3)}\colon\forall_{\mathrm{obj}}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{-}(\forall_{\mathrm{obj}}\overline{(s2)}\colon\dot{-}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\})\mid\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{-}(0<=\overline{(\epsilon)}\Rightarrow\dot{-}(\dot{-}(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot{-}(|(\{ph\in\{ph\in P(P(\mathrm{Union}(\{N,Q\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(op1)}\in N\Rightarrow\dot{-}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{-}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fx})[\underline{\mathsf{m}}]*(\mathrm{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{-}(\dot{-}(|(\{ph\in\{ph\in P(P(\mathrm{Union}(\{N,Q\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(op1)}\in N\Rightarrow\dot{-}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{-}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fx})[\underline{\mathsf{m}}]*(\mathrm{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})n)n)n)n)n\}=$
$\{ph\in P(\{ph\in P(\{ph\in P(P(\mathrm{Union}(\{N,Q\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(op1)}\in N\Rightarrow\dot{-}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\})\mid\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(r1)}\colon\overline{(r1)}\in$
$\mathsf{f}_{\mathrm{Ph}}\Rightarrow\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(op1)}\in N\Rightarrow\dot{-}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{-}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(f1)}\colon\forall_{\mathrm{obj}}\overline{(f2)}\colon\forall_{\mathrm{obj}}\overline{(f3)}\colon\forall_{\mathrm{obj}}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{-}(\forall_{\mathrm{obj}}\overline{(s2)}\colon\dot{-}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$

$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; SubLessLeft(R) \rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$

$\overline{(\epsilon)})n)n)n)n)n\} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n \gg \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n; eqReflexivity \gg \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$

$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{SubLessRight}(\mathrm{R}) \rhd \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \rhd \dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$

$\overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n \gg \dot{\neg}(\forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n], p_0, \mathsf{c})]$

$[EqMultiplicationLeft(R) \overset{stmt}{\rightarrow} SystemQ \vdash \forall\underline{(fx)}: \forall\underline{(fy)}: \forall\underline{(fz)}: \{ph \in P(\{ph \in$
$P(\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \vdash \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$

$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}{:}\ \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}{:}\ \forall_{obj}\overline{(f2)}{:}\ \forall_{obj}\overline{(f3)}{:}\ \forall_{obj}\overline{(f4)}{:}\ \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}{:}\ \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}{:}\ \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}{:}\ \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}{:}\ \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}{:}\ \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fz)}[\underline{\mathsf{m}}] * \underline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fz)}[\underline{\mathsf{m}}] * \underline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}{:}\ \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}{:}\ \forall_{obj}\overline{(f2)}{:}\ \forall_{obj}\overline{(f3)}{:}\ \forall_{obj}\overline{(f4)}{:}\ \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}{:}\ \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}{:}\ \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}{:}\ \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}{:}\ \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}{:}\ \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fz)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fz)}[\underline{\mathsf{m}}] * \underline{(fy)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\}]$

$[\text{EqMultiplicationLeft(R)} \stackrel{\text{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall\underline{(fx)}{:}\ \forall\underline{(fy)}{:}\ \forall\underline{(fz)}{:}\ \{ph \in$
$P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}{:}\ \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}{:}\ \forall_{obj}\overline{(f2)}{:}\ \forall_{obj}\overline{(f3)}{:}\ \forall_{obj}\overline{(f4)}{:}\ \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}{:}\ \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}{:}\ \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}{:}\ \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}{:}\ \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}{:}\ \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{-}(\dot{-}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \mathrm{EqMultiplication}(\mathrm{R}) \rhd \{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{-}(\dot{-}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{TimesCommutativity}(\mathrm{R}) \gg \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fz})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fz})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$

$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{TimesCommutativity}(\mathrm{R}) \gg \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fz)[\underline{\mathsf{m}}]*(fy)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fz)[\underline{\mathsf{m}}]*(fy)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; ==$ Transitivity $\rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(\mathrm{Union}(\{N,Q\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fz)[\underline{\mathsf{m}}]*(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fz)[\underline{\mathsf{m}}]*(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fx)[\underline{\mathsf{m}}]*(fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fx)[\underline{\mathsf{m}}]*(fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} \rhd \{ph \in P(\{ph \in P(\{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$

$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fz)[\underline{\mathsf{m}}] * (fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\, \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fz)[\underline{\mathsf{m}}] * (fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}(r1){:}\, (r1) \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(f1){:}\, \forall_{obj}(f2){:}\, \forall_{obj}(f3){:}\, \forall_{obj}(f4){:}\, \{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in \mathsf{f}_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1){:}\, (s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2){:}\, \dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}{:}\, \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}{:}\, \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}{:}\, \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\, \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\, \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; == \text{Transitivity} \triangleright \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}(r1){:}\, (r1) \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(f1){:}\, \forall_{obj}(f2){:}\, \forall_{obj}(f3){:}\, \forall_{obj}(f4){:}\, \{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in \mathsf{f}_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1){:}\, (s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2){:}\, \dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}{:}\, \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}{:}\, \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}{:}\, \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\, \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fz)[\underline{\mathsf{m}}] * (fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\, \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fz)[\underline{\mathsf{m}}] * (fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}(r1){:}\, (r1) \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \Rightarrow$

$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} \rhd \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fz)[\underline{\mathsf{m}}] * (fy)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$

$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot\neg(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot\neg(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fz})[\underline{\mathsf{m}}]*(\mathrm{fy})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\gg$
$\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot\neg(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon\overline{(\mathrm{r1})}\in$
$\mathsf{f}_{\mathrm{Ph}}\Rightarrow\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot\neg(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon\{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\overline{(\mathrm{f1})}=\overline{(\mathrm{f3})}\Rightarrow\overline{(\mathrm{f2})}=\overline{(\mathrm{f4})})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon\overline{(\mathrm{s1})}\in\mathrm{N}\Rightarrow\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon\dot\neg(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot\neg(0<=\overline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot\neg(|(\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot\neg(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot\neg(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fz})[\underline{\mathsf{m}}]*(\mathrm{fx})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot\neg(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot\neg(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fz})[\underline{\mathsf{m}}]*(\mathrm{fx})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}=$
$\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot\neg(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon\overline{(\mathrm{r1})}\in$
$\mathsf{f}_{\mathrm{Ph}}\Rightarrow\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot\neg(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon\{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\overline{(\mathrm{f1})}=\overline{(\mathrm{f3})}\Rightarrow\overline{(\mathrm{f2})}=\overline{(\mathrm{f4})})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon\overline{(\mathrm{s1})}\in\mathrm{N}\Rightarrow\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon\dot\neg(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot\neg(0<=\overline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot\neg(|(\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot\neg(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot\neg(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fz})[\underline{\mathsf{m}}]*(\mathrm{fy})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot\neg(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot\neg(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\mathrm{fz})[\underline{\mathsf{m}}]*(\mathrm{fy})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{LeqMultiplication(R)}\overset{\mathrm{stmt}}{\to}\mathrm{SystemQ}\vdash$
$\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon\forall\underline{(\mathrm{fz})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot\neg(\dot\neg(0<=\overline{(\epsilon)}\Rightarrow$
$\dot\neg(\dot\neg(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot\neg(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot\neg(\mathsf{c}_{\mathrm{Ph}}=$

$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] <= ((fz)[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}: \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\overline{(crs1)}: \dot{-}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in$
$N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\overline{(crs1)}: \dot{-}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}: \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|((fz)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|((fz)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \vdash$
$\dot{-}(\dot{-}(\forall_{obj}\overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (fx)[\overline{\mathsf{m}}] <= ((fy)[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \{ph \in P(\{ph \in$
$P(\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in$
$N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}: \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$

$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\}]$

$[LeqMultiplication(R) \overset{proof}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil SystemQ \vdash \forall\underline{(fx)}: \forall\underline{(fy)}: \forall\underline{(fz)}: \{ph \in$
$P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fz)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((fz)[\overline{\mathsf{m}}] +$
$(-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \vdash == Symmetry \rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$

$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

$\overline{n}$ <= $\overline{m}$ ⇒ ∸(|({ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸($\forall_{obj}$(op1): ∸(∸($\forall_{obj}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{obj}$(crs1): ∸(c_{Ph} =
{{(crs1), (crs1)}, {(crs1), 0}})n)n}[$\overline{m}$] + (−ud_{Ph}[$\overline{m}$]))| <= (ϵ) ⇒ ∸(∸(|({ph ∈
{ph ∈ P(P(Union({N, Q}))) | ∸($\forall_{obj}$(op1): ∸(∸($\forall_{obj}$(op2): ∸(∸(∸((op1) ∈
N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} =
{{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{obj}$(crs1): ∸(c_{Ph} =
{{(crs1), (crs1)}, {(crs1), 0}})n)n}[$\overline{m}$] + (−ud_{Ph}[$\overline{m}$]))| =
(ϵ))n)n)n)n)n}; EqMultiplicationLeft(R) ▷ {ph ∈ P({ph ∈ P({ph ∈
P(P(Union({N, Q}))) | ∸($\forall_{obj}$(op1): ∸(∸($\forall_{obj}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n}) |
∸(∸($\forall_{obj}$(r1): (r1) ∈ f_{Ph} ⇒ ∸($\forall_{obj}$(op1): ∸(∸($\forall_{obj}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⇒
∸($\forall_{obj}$(f1): $\forall_{obj}$(f2): $\forall_{obj}$(f3): $\forall_{obj}$(f4): {{(f1), (f1)}, {(f1), (f2)}} ∈ f_{Ph} ⇒
{{(f3), (f3)}, {(f3), (f4)}} ∈ f_{Ph} ⇒ (f1) = (f3) ⇒ (f2) = (f4))n)n ⇒
∸($\forall_{obj}$(s1): (s1) ∈ N ⇒ ∸($\forall_{obj}$(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈
f_{Ph})n)n)n)n}) | $\forall_{obj}$(ϵ): ∸($\forall_{obj}$$\overline{n}$: ∸($\forall_{obj}$$\overline{m}$: ∸(0 <= ($\epsilon$) ⇒ ∸(∸(0 = ($\epsilon$))n)n)n ⇒
$\overline{n}$ <= $\overline{m}$ ⇒ ∸(|((fz)[$\overline{m}$] + (−ud_{Ph}[$\overline{m}$]))| <= (ϵ) ⇒
∸(∸(|((fz)[$\overline{m}$] + (−ud_{Ph}[$\overline{m}$]))| = (ϵ))n)n)n)n)n} = {ph ∈ P({ph ∈ P({ph ∈
P(P(Union({N, Q}))) | ∸($\forall_{obj}$(op1): ∸(∸($\forall_{obj}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n}) |
∸(∸($\forall_{obj}$(r1): (r1) ∈ f_{Ph} ⇒ ∸($\forall_{obj}$(op1): ∸(∸($\forall_{obj}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⇒
∸($\forall_{obj}$(f1): $\forall_{obj}$(f2): $\forall_{obj}$(f3): $\forall_{obj}$(f4): {{(f1), (f1)}, {(f1), (f2)}} ∈ f_{Ph} ⇒
{{(f3), (f3)}, {(f3), (f4)}} ∈ f_{Ph} ⇒ (f1) = (f3) ⇒ (f2) = (f4))n)n ⇒
∸($\forall_{obj}$(s1): (s1) ∈ N ⇒ ∸($\forall_{obj}$(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈
f_{Ph})n)n)n)n}) | $\forall_{obj}$(ϵ): ∸($\forall_{obj}$$\overline{n}$: ∸($\forall_{obj}$$\overline{m}$: ∸(0 <= ($\epsilon$) ⇒ ∸(∸(0 = ($\epsilon$))n)n)n ⇒
$\overline{n}$ <= $\overline{m}$ ⇒ ∸(|({ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸($\forall_{obj}$(op1): ∸(∸($\forall_{obj}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{obj}$(crs1): ∸(c_{Ph} =
{{(crs1), (crs1)}, {(crs1), 0}})n)n}[$\overline{m}$] + (−ud_{Ph}[$\overline{m}$]))| <= (ϵ) ⇒ ∸(∸(|({ph ∈
{ph ∈ P(P(Union({N, Q}))) | ∸($\forall_{obj}$(op1): ∸(∸($\forall_{obj}$(op2): ∸(∸(∸((op1) ∈
N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} =
{{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{obj}$(crs1): ∸(c_{Ph} =
{{(crs1), (crs1)}, {(crs1), 0}})n)n}[$\overline{m}$] + (−ud_{Ph}[$\overline{m}$]))| = (ϵ))n)n)n)n)n} ≫
{ph ∈ P({ph ∈ P({ph ∈ P(P(Union({N, Q}))) |
∸($\forall_{obj}$(op1): ∸(∸($\forall_{obj}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n}) | ∸(∸($\forall_{obj}$(r1): (r1) ∈
f_{Ph} ⇒ ∸($\forall_{obj}$(op1): ∸(∸($\forall_{obj}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⇒
∸($\forall_{obj}$(f1): $\forall_{obj}$(f2): $\forall_{obj}$(f3): $\forall_{obj}$(f4): {{(f1), (f1)}, {(f1), (f2)}} ∈ f_{Ph} ⇒
{{(f3), (f3)}, {(f3), (f4)}} ∈ f_{Ph} ⇒ (f1) = (f3) ⇒ (f2) = (f4))n)n ⇒
∸($\forall_{obj}$(s1): (s1) ∈ N ⇒ ∸($\forall_{obj}$(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈

$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; x * 0 = 0(R) \gg \{ph \in P(\{ph \in P(\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$

$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\}; x * 0 =$
$0(R) \gg \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$

$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n\}; ==$
$\text{Symmetry} \rhd \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fy})[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) | \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) | \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) | \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) | \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) | \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) | \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$

$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$f_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in f_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in f_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$f_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{n}\colon \dot{\neg}(\forall_{obj}\overline{m}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fy)[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; EqMultiplicationLeft(R) \rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in f_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in f_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in f_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$f_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{n}\colon \dot{\neg}(\forall_{obj}\overline{m}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$f_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fz)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fz)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$

$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fy})[\underline{\mathsf{m}}] * (\overline{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; == \text{Transitivity} \rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fx})[\underline{\mathsf{m}}] * (\overline{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fx})[\underline{\mathsf{m}}] * (\overline{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fx})[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fx})[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{Ph} =$

$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \rhd \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; ==$
Transitivity $\rhd$ $\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \rhd \{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$

$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$

$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; == \mathrm{Transitivity} \rhd \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow$

$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} \triangleright \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$

$\dot{\neg}\,(\forall_{\rm obj}\overline{(f1)}\colon \forall_{\rm obj}\overline{(f2)}\colon \forall_{\rm obj}\overline{(f3)}\colon \forall_{\rm obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\rm Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\rm Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{\rm obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\rm Ph})n)n)n)n\}) \mid \forall_{\rm obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\rm obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\rm obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\rm Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\rm obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\rm Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\rm Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\rm Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\rm obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\rm Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\rm Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\rm Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\rm Ph} \Rightarrow \dot{\neg}\,(\forall_{\rm obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(f1)}\colon \forall_{\rm obj}\overline{(f2)}\colon \forall_{\rm obj}\overline{(f3)}\colon \forall_{\rm obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\rm Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\rm Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{\rm obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\rm Ph})n)n)n)n\}) \mid \forall_{\rm obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\rm obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\rm obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\rm Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\rm obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\rm Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\rm Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\rm Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\rm obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\rm Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\rm Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\rm Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\rm Ph} \Rightarrow \dot{\neg}\,(\forall_{\rm obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(f1)}\colon \forall_{\rm obj}\overline{(f2)}\colon \forall_{\rm obj}\overline{(f3)}\colon \forall_{\rm obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\rm Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\rm Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{\rm obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\rm Ph})n)n)n)n\}) \mid \forall_{\rm obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\rm obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\rm obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}\,(\forall_{\rm obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\rm obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\rm Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\rm obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\rm Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\rm Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$

$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\};$ lemma eqLeq(R) $\rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$

$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\mathsf{m}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, (\overline{(\mathrm{fy})}[\mathsf{m}] * \overline{(\mathrm{fz})}[\mathsf{m}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\mathsf{m}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, (\overline{(\mathrm{fx})}[\mathsf{m}] * \overline{(\mathrm{fz})}[\mathsf{m}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\mathsf{m}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, (\overline{(\mathrm{fx})}[\mathsf{m}] * \overline{(\mathrm{fz})}[\mathsf{m}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\mathsf{m}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, (\overline{(\mathrm{fy})}[\mathsf{m}] * \overline{(\mathrm{fz})}[\mathsf{m}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\mathsf{m}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, (\overline{(\mathrm{fy})}[\mathsf{m}] * \overline{(\mathrm{fz})}[\mathsf{m}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \forall\overline{(\mathrm{fx})}\colon \forall\overline{(\mathrm{fy})}\colon \forall\overline{(\mathrm{fz})}\colon \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$

$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N,Q\})))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fy)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \vdash EqMultiplication(R) \rhd \{ph \in$
$P(\{ph \in P(\{ph \in P(P(Union(\{N,Q\})))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N,Q\})))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fy)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N,Q\})))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$

$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\};$ lemma eqLeq(R) $\rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$

$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)}))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \forall(\mathrm{fx})\colon \forall(\mathrm{fy})\colon \forall(\mathrm{fz})\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= ((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <= ((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{FirstConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= ((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <= ((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <=$
$((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessMultiplication}(\mathrm{R}) \rhd$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessLeq}(\mathrm{R}) \rhd \dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$

$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \mathrm{Ded} \rhd \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in$
$N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(c_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$f_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in f_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in f_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$f_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{n}\colon \dot\neg(\forall_{obj}\overline{m}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot\neg(|(\underline{(fz)}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fz)}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\} \vdash$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{n}\colon \dot\neg(\forall_{obj}\overline{m}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n \Rightarrow$
$\dot\neg(\overline{n} <= \overline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$f_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in f_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in f_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$f_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{n}\colon \dot\neg(\forall_{obj}\overline{m}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$

$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\,\dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}(r1){:}\,(r1) \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1){:}\,\dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(f1){:}\,\forall_{obj}(f2){:}\,\forall_{obj}(f3){:}\,\forall_{obj}(f4){:}\,\{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in \mathsf{f}_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1){:}\,(s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2){:}\,\dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}(\epsilon){:}\,\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}{:}\,\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}{:}\,\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\,\dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\,\dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-ud_{Ph}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\,\dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}{:}\,\dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-ud_{Ph}[\overline{\mathsf{m}}]))| = (\epsilon))n)n)n)n)n\} \gg$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\,\dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}(r1){:}\,(r1) \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1){:}\,\dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(f1){:}\,\forall_{obj}(f2){:}\,\forall_{obj}(f3){:}\,\forall_{obj}(f4){:}\,\{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in \mathsf{f}_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1){:}\,(s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2){:}\,\dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}(\epsilon){:}\,\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}{:}\,\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}{:}\,\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\,\dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}(crs1){:}\,\dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{(crs1), (crs1)\}, \{(crs1), 0\}\})n)n\}[\overline{\mathsf{m}}] + (-ud_{Ph}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}(op1){:}\,\dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in$
$N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}(crs1){:}\,\dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{(crs1), (crs1)\}, \{(crs1), 0\}\})n)n\}[\overline{\mathsf{m}}] + (-ud_{Ph}[\overline{\mathsf{m}}]))| = (\epsilon))n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\,\dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}(r1){:}\,(r1) \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}(op1){:}\,\dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}((r1) = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(f1){:}\,\forall_{obj}(f2){:}\,\forall_{obj}(f3){:}\,\forall_{obj}(f4){:}\,\{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in \mathsf{f}_{Ph} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1){:}\,(s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2){:}\,\dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}(\epsilon){:}\,\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}{:}\,\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}{:}\,\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$

$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; \mathrm{Ded} \rhd \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \forall\underline{(fz)}\colon \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \vdash$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; \mathrm{Ded} \rhd$
$\forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n)n)n \vdash$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$

$\dot{\neg}(\forall_{\text{obj}}\overline{(s1)}{:}\ \overline{(s1)} \in \text{N} \Rightarrow \dot{\neg}(\forall_{\text{obj}}\overline{(s2)}{:}\ \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\text{Ph}})\text{n})\text{n})\text{n})\text{n}\}) \mid \forall_{\text{obj}}\overline{(\epsilon)}{:}\ \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{n}}{:}\ \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{m}}{:}\ \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\text{ph} \in \{\text{ph} \in \text{P}(\text{P}(\text{Union}(\{\text{N}, \text{Q}\}))) \mid$
$\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op1})}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op2})}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\text{op1})} \in \text{N} \Rightarrow \dot{\neg}(\overline{(\text{op2})} \in \text{Q})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}\} \mid \dot{\neg}(\forall_{\text{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\text{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\text{fy})[\underline{\mathsf{m}}] * (\text{fz})[\underline{\mathsf{m}}])\}\})\text{n})\text{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\text{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\text{ph} \in \{\text{ph} \in \text{P}(\text{P}(\text{Union}(\{\text{N}, \text{Q}\}))) \mid$
$\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op1})}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op2})}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\text{op1})} \in \text{N} \Rightarrow \dot{\neg}(\overline{(\text{op2})} \in \text{Q})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}\} \mid \dot{\neg}(\forall_{\text{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\text{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\text{fy})[\underline{\mathsf{m}}] * (\text{fz})[\underline{\mathsf{m}}])\}\})\text{n})\text{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\text{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\text{n})\text{n})\text{n})\text{n})\text{n}\} \gg$
$\dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\epsilon)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{n}}{:}\ \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{m}}{:}\ \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\text{ph} \in \{\text{ph} \in \text{P}(\text{P}(\text{Union}(\{\text{N}, \text{Q}\}))) \mid$
$\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op1})}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op2})}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\text{op1})} \in \text{N} \Rightarrow \dot{\neg}(\overline{(\text{op2})} \in \text{Q})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}\} \mid \dot{\neg}(\forall_{\text{obj}}\overline{(\text{crs1})}{:}\ \dot{\neg}(\mathsf{c}_{\text{Ph}} =$
$\{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})\text{n})\text{n}\}[\overline{\mathsf{m}}] <= ((\text{fz})[\overline{\mathsf{m}}] + (-\text{u}\overline{(\epsilon)})))\text{n})\text{n})\text{n})\text{n})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\epsilon)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{n}}{:}\ \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{m}}{:}\ \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\text{fx})[\overline{\mathsf{m}}] <= ((\text{fy})[\overline{\mathsf{m}}] + (-\text{u}\overline{(\epsilon)})))\text{n})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\epsilon)}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{n}}{:}\ \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{m}}{:}\ \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\text{ph} \in \{\text{ph} \in \text{P}(\text{P}(\text{Union}(\{\text{N}, \text{Q}\}))) \mid$
$\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op1})}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op2})}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\text{op1})} \in \text{N} \Rightarrow \dot{\neg}(\overline{(\text{op2})} \in \text{Q})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}\} \mid \dot{\neg}(\forall_{\text{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\text{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\text{fx})[\underline{\mathsf{m}}] * (\text{fz})[\underline{\mathsf{m}}])\}\})\text{n})\text{n}\}[\overline{\mathsf{m}}] <= (\{\text{ph} \in \{\text{ph} \in$
$\text{P}(\text{P}(\text{Union}(\{\text{N}, \text{Q}\}))) \mid \dot{\neg}(\forall_{\text{obj}}\overline{(\text{op1})}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op2})}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\text{op1})} \in \text{N} \Rightarrow$
$\dot{\neg}(\overline{(\text{op2})} \in \text{Q})\text{n})\text{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}\} \mid$
$\dot{\neg}(\forall_{\text{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\text{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\text{fy})[\underline{\mathsf{m}}] * (\text{fz})[\underline{\mathsf{m}}])\}\})\text{n})\text{n}\}[\overline{\mathsf{m}}] +$
$(-\text{u}\overline{(\epsilon)})))\text{n})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n} \Rightarrow \{\text{ph} \in \text{P}(\{\text{ph} \in \text{P}(\{\text{ph} \in \text{P}(\text{P}(\text{Union}(\{\text{N}, \text{Q}\}))) \mid$
$\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op1})}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op2})}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\text{op1})} \in \text{N} \Rightarrow \dot{\neg}(\overline{(\text{op2})} \in \text{Q})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\text{r1})}{:}\ \overline{(\text{r1})} \in$
$\mathsf{f}_{\text{Ph}} \Rightarrow \dot{\neg}(\forall_{\text{obj}}\overline{(\text{op1})}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op2})}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\text{op1})} \in \text{N} \Rightarrow \dot{\neg}(\overline{(\text{op2})} \in \text{Q})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\overline{(\text{r1})} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\forall_{\text{obj}}\overline{(\text{f1})}{:}\ \forall_{\text{obj}}\overline{(\text{f2})}{:}\ \forall_{\text{obj}}\overline{(\text{f3})}{:}\ \forall_{\text{obj}}\overline{(\text{f4})}{:}\ \{\{\overline{(\text{f1})}, \overline{(\text{f1})}\}, \{\overline{(\text{f1})}, \overline{(\text{f2})}\}\} \in \mathsf{f}_{\text{Ph}} \Rightarrow$
$\{\{\overline{(\text{f3})}, \overline{(\text{f3})}\}, \{\overline{(\text{f3})}, \overline{(\text{f4})}\}\} \in \mathsf{f}_{\text{Ph}} \Rightarrow \overline{(\text{f1})} = \overline{(\text{f3})} \Rightarrow \overline{(\text{f2})} = \overline{(\text{f4})})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\forall_{\text{obj}}\overline{(s1)}{:}\ \overline{(s1)} \in \text{N} \Rightarrow \dot{\neg}(\forall_{\text{obj}}\overline{(s2)}{:}\ \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\text{Ph}})\text{n})\text{n})\text{n})\text{n}\}) \mid \forall_{\text{obj}}\overline{(\epsilon)}{:}\ \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{n}}{:}\ \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{m}}{:}\ \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\text{ph} \in \{\text{ph} \in \text{P}(\text{P}(\text{Union}(\{\text{N}, \text{Q}\}))) \mid$
$\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op1})}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op2})}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\text{op1})} \in \text{N} \Rightarrow \dot{\neg}(\overline{(\text{op2})} \in \text{Q})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}\} \mid \dot{\neg}(\forall_{\text{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\text{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\text{fx})[\underline{\mathsf{m}}] * (\text{fz})[\underline{\mathsf{m}}])\}\})\text{n})\text{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\text{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\text{ph} \in \{\text{ph} \in \text{P}(\text{P}(\text{Union}(\{\text{N}, \text{Q}\}))) \mid$
$\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op1})}{:}\ \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{(\text{op2})}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\text{op1})} \in \text{N} \Rightarrow \dot{\neg}(\overline{(\text{op2})} \in \text{Q})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}\} \mid \dot{\neg}(\forall_{\text{obj}}\underline{\mathsf{m}}{:}\ \dot{\neg}(\mathsf{e}_{\text{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\text{fx})[\underline{\mathsf{m}}] * (\text{fz})[\underline{\mathsf{m}}])\}\})\text{n})\text{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\text{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\text{n})\text{n})\text{n})\text{n})\text{n}\} =$

$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{r1})\colon (\mathrm{r1}) \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\mathrm{r1}) = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{f1})\colon \forall_{\mathrm{obj}}(\mathrm{f2})\colon \forall_{\mathrm{obj}}(\mathrm{f3})\colon \forall_{\mathrm{obj}}(\mathrm{f4})\colon \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{(\mathrm{f3}), (\mathrm{f3})\}, \{(\mathrm{f3}), (\mathrm{f4})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s1})\colon (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}(\{\{(\mathrm{s1}), (\mathrm{s1})\}, \{(\mathrm{s1}), (\mathrm{s2})\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fy})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\epsilon)\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= ((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{r1})\colon (\mathrm{r1}) \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\mathrm{r1}) = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{f1})\colon \forall_{\mathrm{obj}}(\mathrm{f2})\colon \forall_{\mathrm{obj}}(\mathrm{f3})\colon \forall_{\mathrm{obj}}(\mathrm{f4})\colon \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{(\mathrm{f3}), (\mathrm{f3})\}, \{(\mathrm{f3}), (\mathrm{f4})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s1})\colon (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}(\{\{(\mathrm{s1}), (\mathrm{s1})\}, \{(\mathrm{s1}), (\mathrm{s2})\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in$
$\mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{r1})\colon (\mathrm{r1}) \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <= ((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash$
Repetition $\rhd\ \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= ((\mathrm{fz})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$

$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\overline{(fz)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\overline{(fz)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},0\}\})n)n\}[\overline{\mathsf{m}}] <= (\overline{(fz)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow$
$\{ph \in P(\{ph \in P(\{ph \in P(P(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$

$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Repetition} \rhd \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg\,(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg\,(\dot\neg\,(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg\,(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg\,(\dot\neg\,(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{ExpandDisjuncts} \rhd$
$\dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg\,(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg\,(\dot\neg\,(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$

$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] +$
$(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \dot{\neg}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$

$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \Rightarrow \dot{\neg}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\overline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n)n)n;$ From3Disjuncts $\rhd$ $\dot\neg(\{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in$
$N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fz)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fz)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \Rightarrow \dot\neg(\{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$

$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n)n)n \rhd \{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{\neg}(\dot{\neg}(|(\underline{(fz)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fy)}[\underline{\mathsf{m}}] * \underline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$

$\overline{(\epsilon)})n)n)n)n)n\} \rhd \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|((fy)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((fy)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N,Q\})))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} \rhd \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] <= ((fz)[\overline{\mathsf{m}}] + (-\mathsf{u}\overline{(\epsilon)})))n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (fx)[\overline{\mathsf{m}}] <= ((fy)[\overline{\mathsf{m}}] + (-\mathsf{u}\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fy)[\underline{\mathsf{m}}] * (fz)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-\mathsf{u}\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N,Q\})))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\forall_{obj}\overline{(s2)}\colon \dot{-}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{-}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{-}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{-}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}\,(\dot{-}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}\,(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}\,(\forall_{obj}\overline{(op1)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(op2)}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}\,(\dot{-}\,(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}\,(\forall_{obj}\overline{(op1)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(op2)}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}\,(\forall_{obj}\overline{(op1)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(op2)}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}\,(\forall_{obj}\overline{(op1)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(op2)}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\forall_{obj}\overline{(s2)}\colon \dot{-}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{-}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{-}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{-}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}\,(\dot{-}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}\,(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}\,(\forall_{obj}\overline{(op1)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(op2)}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}\,(\dot{-}\,(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}\,(\forall_{obj}\overline{(op1)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(op2)}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg$
$\dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(\epsilon)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{-}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{-}\,(\dot{-}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}\,(\dot{-}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{-}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}\,(\forall_{obj}\overline{(op1)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(op2)}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{-}\,(\forall_{obj}\overline{(op1)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(op2)}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{-}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{-}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}\,(\forall_{obj}\overline{(op1)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(op2)}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}\,(\forall_{obj}\overline{(op1)}\colon \dot{-}\,(\dot{-}\,(\forall_{obj}\overline{(op2)}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\})))\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\})))\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(\mathrm{Union}(\{N, Q\})))\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\})))\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\})))\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fy)}[\underline{\mathsf{m}}] * \overline{(fz)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}\rceil, p_0, \mathsf{c})]$

$[\mathrm{Cauchy}(2)(\mathrm{Helper}) \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\overline{(v1)}\colon \forall\overline{(v2)}\colon \forall\overline{(n1)}\colon \forall\overline{(n2)}\colon \forall\overline{(\epsilon)}\colon \forall\overline{(fx)}\colon \forall\overline{(fy)}\colon \forall_{\mathrm{obj}}\overline{(v1)}\colon \forall_{\mathrm{obj}}\overline{(v2)}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{(n1)} <= \overline{(v1)} \Rightarrow \overline{(n1)} <= \overline{(v2)} \Rightarrow$
$\dot{\neg}\,(|(\overline{(fx)}[\overline{(v1)}] + (-u\overline{(fx)}[\overline{(v2)}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\overline{(fx)}[\overline{(v1)}] + (-u\overline{(fx)}[\overline{(v2)}]))| =$
$\overline{(\epsilon)})n)n)n \Rightarrow \forall_{\mathrm{obj}}\overline{(v1)}\colon \forall_{\mathrm{obj}}\overline{(v2)}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{(n2)} <=$
$\overline{(v1)} \Rightarrow \overline{(n2)} <= \overline{(v2)} \Rightarrow \dot{\neg}\,(|(\overline{(fy)}[\overline{(v1)}] + (-u\overline{(fy)}[\overline{(v2)}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\overline{(fy)}[\overline{(v1)}] + (-u\overline{(fy)}[\overline{(v2)}]))| = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \mathrm{if}(\overline{(n2)} <= \overline{(n1)}, \overline{(n1)}, \overline{(n2)}) <= \overline{(v1)} \Rightarrow \mathrm{if}(\overline{(n2)} <=$
$\overline{(n1)}, \overline{(n1)}, \overline{(n2)}) <= \overline{(v2)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\overline{(fx)}[\overline{(v1)}] + (-u\overline{(fx)}[\overline{(v2)}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\overline{(fx)}[\overline{(v1)}] + (-u\overline{(fx)}[\overline{(v2)}]))| = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\overline{(fy)}[\overline{(v1)}] +$
$(-u\overline{(fy)}[\overline{(v2)}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\overline{(fy)}[\overline{(v1)}] + (-u\overline{(fy)}[\overline{(v2)}]))| = \overline{(\epsilon)})n)n)n)n)n]$

$[\mathrm{Cauchy}(2)(\mathrm{Helper}) \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\overline{(v1)}\colon \forall\overline{(v2)}\colon \forall\overline{(n1)}\colon \forall\overline{(n2)}\colon \forall\overline{(\epsilon)}\colon \forall\overline{(fx)}\colon \forall\overline{(fy)}\colon \forall_{\mathrm{obj}}\overline{(v1)}\colon \forall_{\mathrm{obj}}\overline{(v2)}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{(n1)} <= \overline{(v1)} \Rightarrow \overline{(n1)} <= \overline{(v2)} \Rightarrow$

$\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n \vdash \forall_{\mathrm{obj}}(v1) \colon \forall_{\mathrm{obj}}(v2) \colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow (n2) <=$
$(v1) \Rightarrow (n2) <= (v2) \Rightarrow \dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n \vdash \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \vdash \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \vdash \mathrm{if}((n2) <=$
$(n1), (n1), (n2)) <= (v2) \vdash \mathrm{MaxLeq}(1) \gg (n1) <= \mathrm{if}((n2) <=$
$(n1), (n1), (n2)); \mathrm{leqTransitivity} \rhd (n1) <= \mathrm{if}((n2) <=$
$(n1), (n1), (n2)) \rhd \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \gg (n1) <=$
$(v1); \mathrm{leqTransitivity} \rhd (n1) <= \mathrm{if}((n2) <= (n1), (n1), (n2)) \rhd \mathrm{if}((n2) <=$
$(n1), (n1), (n2)) <= (v2) \gg (n1) <= (v2); \mathrm{MaxLeq}(2) \gg (n2) <= \mathrm{if}((n2) <=$
$(n1), (n1), (n2)); \mathrm{leqTransitivity} \rhd (n2) <= \mathrm{if}((n2) <= (n1), (n1), (n2)) \rhd$
$\mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \gg (n2) <= (v1); \mathrm{leqTransitivity} \rhd (n2) <=$
$\mathrm{if}((n2) <= (n1), (n1), (n2)) \rhd \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v2) \gg (n2) <=$
$(v2); \mathrm{A4} @ (v1) \rhd \forall_{\mathrm{obj}}(v1) \colon \forall_{\mathrm{obj}}(v2) \colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$(n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow \dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \gg \forall_{\mathrm{obj}}(v2) \colon \dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow$
$\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n; \mathrm{A4} @ (v2) \rhd \forall_{\mathrm{obj}}(v2) \colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow (n1) <=$
$(v1) \Rightarrow (n1) <= (v2) \Rightarrow \dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \gg \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow$
$\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n; \mathrm{MP3} \rhd \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \rhd \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \rhd (n1) <= (v1) \rhd (n1) <= (v2) \gg$
$\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n; \mathrm{A4} @ (v1) \rhd \forall_{\mathrm{obj}}(v1) \colon \forall_{\mathrm{obj}}(v2) \colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$(n2) <= (v1) \Rightarrow (n2) <= (v2) \Rightarrow \dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n \gg \forall_{\mathrm{obj}}(v2) \colon \dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow (n2) <= (v1) \Rightarrow (n2) <= (v2) \Rightarrow$
$\dot{\neg}(|((fy)[(v1)]+(-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)]+(-u(fy)[(v2)]))| =$
$(\epsilon))n)n)n; \mathrm{A4} @ (v2) \rhd \forall_{\mathrm{obj}}(v2) \colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow (n2) <=$
$(v1) \Rightarrow (n2) <= (v2) \Rightarrow \dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n \gg \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \Rightarrow (n2) <= (v1) \Rightarrow (n2) <= (v2) \Rightarrow$
$\dot{\neg}(|((fy)[(v1)]+(-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)]+(-u(fy)[(v2)]))| =$
$(\epsilon))n)n)n; \mathrm{MP3} \rhd \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow (n2) <= (v1) \Rightarrow$
$(n2) <= (v2) \Rightarrow \dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n \rhd \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \rhd (n2) <= (v1) \rhd (n2) <= (v2) \gg \dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <=$
$(\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n; \mathrm{JoinConjuncts} \rhd$
$\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n \rhd \dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] +$
$(-u(fy)[(v2)]))| = (\epsilon))n)n)n \gg \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$

¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| = (ϵ))n)n)n ⇒ ¬̇ (¬̇ (|((fy)[(v1)] +
(−u(fy)[(v2)]))| <= (ϵ) ⇒ ¬̇ (¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(ϵ))n)n)n)n)n; ∀(v1): ∀(v2): ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): Ded ⊳
∀(v1): ∀(v2): ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): $\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(v2): ¬̇ (0 <= (ϵ) ⇒
¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒
¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒ ¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| =
(ϵ))n)n)n ⊢ $\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(v2): ¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒ (n2) <=
(v1) ⇒ (n2) <= (v2) ⇒ ¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (ϵ) ⇒
¬̇ (¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| = (ϵ))n)n)n ⊢ ¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 =
(ϵ))n)n)n ⊢ if((n2) <= (n1), (n1), (n2)) <= (v1) ⊢ if((n2) <=
(n1), (n1), (n2)) <= (v2) ⊢ ¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒
¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| = (ϵ))n)n)n ⇒ ¬̇ (¬̇ (|((fy)[(v1)] +
(−u(fy)[(v2)]))| <= (ϵ) ⇒ ¬̇ (¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(ϵ))n)n)n)n)n ≫ $\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(v2): ¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒
(n1) <= (v1) ⇒ (n1) <= (v2) ⇒ ¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒
¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| = (ϵ))n)n)n ⇒ $\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(v2): ¬̇ (0 <=
(ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒ (n2) <= (v1) ⇒ (n2) <= (v2) ⇒ ¬̇ (|((fy)[(v1)] +
(−u(fy)[(v2)]))| <= (ϵ) ⇒ ¬̇ (¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| = (ϵ))n)n)n ⇒
¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒ if((n2) <= (n1), (n1), (n2)) <= (v1) ⇒
if((n2) <= (n1), (n1), (n2)) <= (v2) ⇒ ¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <=
(ϵ) ⇒ ¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| = (ϵ))n)n)n ⇒
¬̇ (¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (ϵ) ⇒
¬̇ (¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| = (ϵ))n)n)n)n)n⌉, p_0, c)]

[Cauchy(2) $\overset{\text{stmt}}{\rightarrow}$ SystemQ ⊢
∀(v1): ∀(v2): ∀n: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): $\forall_{\text{obj}}$(ϵ): ¬̇ ($\forall_{\text{obj}}$n: ¬̇ ($\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(v2
(ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒ n <= (v1) ⇒ n <= (v2) ⇒ ¬̇ (¬̇ (|((fx)[(v1)] +
(−u(fx)[(v2)]))| <= (ϵ) ⇒ ¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| = (ϵ))n)n)n ⇒
¬̇ (¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (ϵ) ⇒
¬̇ (¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| = (ϵ))n)n)n)n)n)n)n]

[Cauchy(2) $\overset{\text{proof}}{\rightarrow}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢
∀(v1): ∀(v2): ∀n: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): Cauchy ≫
$\forall_{\text{obj}}$(ϵ): ¬̇ ($\forall_{\text{obj}}$(n1): ¬̇ ($\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(v2): ¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒
(n1) <= (v1) ⇒ (n1) <= (v2) ⇒ ¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒
¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| =
(ϵ))n)n)n)n)n; A4 @ (ϵ) ⊳ $\forall_{\text{obj}}$(ϵ): ¬̇ ($\forall_{\text{obj}}$(n1): ¬̇ ($\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(v2): ¬̇ (0 <=
(ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒
¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒ ¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| =
(ϵ))n)n)n)n)n ≫ ¬̇ ($\forall_{\text{obj}}$(n1): ¬̇ ($\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(v2): ¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 =
(ϵ))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒
¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒ ¬̇ (¬̇ (|((fx)[(v1)] + (−u(fx)[(v2)]))| =
(ϵ))n)n)n)n)n; Cauchy ≫ $\forall_{\text{obj}}$(ϵ): ¬̇ ($\forall_{\text{obj}}$(n2): ¬̇ ($\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(v2): ¬̇ (0 <=
(ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒ (n2) <= (v1) ⇒ (n2) <= (v2) ⇒
¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (ϵ) ⇒ ¬̇ (¬̇ (|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(ϵ))n)n)n)n)n; A4 @ (ϵ) ⊳ $\forall_{\text{obj}}$(ϵ): ¬̇ ($\forall_{\text{obj}}$(n2): ¬̇ ($\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(v2): ¬̇ (0 <=
(ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒ (n2) <= (v1) ⇒ (n2) <= (v2) ⇒

$\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(\epsilon))n)n)n)n)n \gg \dot\neg(\forall_{obj}(n2): \dot\neg(\forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))n)n)n \Rightarrow (n2) <= (v1) \Rightarrow (n2) <= (v2) \Rightarrow$
$\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(\epsilon))n)n)n)n)n; \mathrm{Cauchy}(2)(\mathrm{Helper}) \gg \forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow$
$\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n \Rightarrow \forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow (n2) <=$
$(v1) \Rightarrow (n2) <= (v2) \Rightarrow \dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))n)n)n \Rightarrow \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \Rightarrow \mathrm{if}((n2) <=$
$(n1), (n1), (n2)) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] +$
$(-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(\epsilon))n)n)n)n)n; \mathrm{ExistMP2} \rhd \forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow$
$\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n \Rightarrow \forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow (n2) <=$
$(v1) \Rightarrow (n2) <= (v2) \Rightarrow \dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))n)n)n \Rightarrow \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \Rightarrow \mathrm{if}((n2) <=$
$(n1), (n1), (n2)) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] +$
$(-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(\epsilon))n)n)n)n)n \rhd \dot\neg(\forall_{obj}(n1): \dot\neg(\forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow$
$\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n)n)n \rhd \dot\neg(\forall_{obj}(n2): \dot\neg(\forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))n)n)n \Rightarrow (n2) <= (v1) \Rightarrow (n2) <= (v2) \Rightarrow$
$\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(\epsilon))n)n)n)n)n \gg \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow \mathrm{if}((n2) <=$
$(n1), (n1), (n2)) <= (v1) \Rightarrow \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v2) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] +$
$(-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n; \mathrm{Gen} \rhd \dot\neg(0 <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \Rightarrow \mathrm{if}((n2) <=$
$(n1), (n1), (n2)) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n \gg \forall_{obj}(v2): \dot\neg(0 <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \Rightarrow \mathrm{if}((n2) <=$
$(n1), (n1), (n2)) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n; \mathrm{Gen} \rhd \forall_{obj}(v2): \dot\neg(0 <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \Rightarrow \mathrm{if}((n2) <=$

$(n1), (n1), (n2)) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n \gg \forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$ $\mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \Rightarrow \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n;$ IntroExist @ $\mathrm{if}((n2) <= (n1), (n1), (n2)) \rhd \forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$ $\mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \Rightarrow \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n \gg$ $\dot{\neg}(\forall_{obj}\underline{\mathsf{n}}: \dot{\neg}(\forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \underline{\mathsf{n}} <= (v1) \Rightarrow \underline{\mathsf{n}} <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n)n)n;$ Gen$\rhd \dot{\neg}(\forall_{obj}\underline{\mathsf{n}}: \dot{\neg}(\forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \underline{\mathsf{n}} <= (v1) \Rightarrow \underline{\mathsf{n}} <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow$ $\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$ $\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n)n)n \gg$ $\forall_{obj}(\epsilon): \dot{\neg}(\forall_{obj}\underline{\mathsf{n}}: \dot{\neg}(\forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$ $\underline{\mathsf{n}} <= (v1) \Rightarrow \underline{\mathsf{n}} <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$ $\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow$ $\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$ $\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n)n)n\rceil, p_0, \mathsf{c})]$

[AddEquations(LeqLess) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{\mathsf{x}}: \forall\underline{\mathsf{y}}: \forall\underline{\mathsf{z}}: \forall\underline{\mathsf{u}}: \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash \dot{\neg}(\underline{\mathsf{z}} <= \underline{\mathsf{u}} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{z}} = \underline{\mathsf{u}})n)n)n \vdash \dot{\neg}((\underline{\mathsf{x}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}))n)n)n]$

[AddEquations(LeqLess) $\overset{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{\mathsf{x}}: \forall\underline{\mathsf{y}}: \forall\underline{\mathsf{z}}: \forall\underline{\mathsf{u}}: \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash \dot{\neg}(\underline{\mathsf{z}} <= \underline{\mathsf{u}} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{z}} = \underline{\mathsf{u}})n)n)n \vdash$ leqAddition $\rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{z}});$ LessAdditionLeft $\rhd \dot{\neg}(\underline{\mathsf{z}} <= \underline{\mathsf{u}} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{z}} = \underline{\mathsf{u}})n)n)n \gg \dot{\neg}((\underline{\mathsf{y}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{\mathsf{y}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}))n)n)n;$ leqLessTransitivity $\rhd (\underline{\mathsf{x}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{z}}) \rhd \dot{\neg}((\underline{\mathsf{y}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{\mathsf{y}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}))n)n)n \gg \dot{\neg}((\underline{\mathsf{x}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}))n)n)n\rceil, p_0, \mathsf{c})]$

[insertTwoMiddleTerms(Numerical) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{\mathsf{x}}: \forall\underline{\mathsf{y}}: \forall\underline{\mathsf{z}}: \forall\underline{\mathsf{u}}: |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= ((|(\underline{\mathsf{x}} + (-u\underline{\mathsf{z}}))| + |(\underline{\mathsf{z}} + (-u\underline{\mathsf{u}}))|) + |(\underline{\mathsf{u}} + \underline{\mathsf{y}})|)]$

[insertTwoMiddleTerms(Numerical) $\overset{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash$ $\forall\underline{\mathsf{x}}: \forall\underline{\mathsf{y}}: \forall\underline{\mathsf{z}}: \forall\underline{\mathsf{u}}:$ insertMiddleTerm(Numerical) $\gg |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= (|(\underline{\mathsf{x}} + (-u\underline{\mathsf{z}}))| + |(\underline{\mathsf{z}} + \underline{\mathsf{y}})|);$ insertMiddleTerm(Numerical) $\gg |(\underline{\mathsf{z}} + \underline{\mathsf{y}})| <= (|(\underline{\mathsf{z}} + (-u\underline{\mathsf{u}}))| + |(\underline{\mathsf{u}} + \underline{\mathsf{y}})|);$ LeqAdditionLeft $\rhd |(\underline{\mathsf{z}} + \underline{\mathsf{y}})| <= (|(\underline{\mathsf{z}} + (-u\underline{\mathsf{u}}))| + |(\underline{\mathsf{u}} + \underline{\mathsf{y}})|) \gg (|(\underline{\mathsf{x}} + (-u\underline{\mathsf{z}}))| + |(\underline{\mathsf{z}} + \underline{\mathsf{y}})|) <= (|(\underline{\mathsf{x}} + (-u\underline{\mathsf{z}}))| + (|(\underline{\mathsf{z}} + (-u\underline{\mathsf{u}}))| + |(\underline{\mathsf{u}} + \underline{\mathsf{y}})|));$ leqTransitivity $\rhd |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <= (|(\underline{\mathsf{x}} + (-u\underline{\mathsf{z}}))| + |(\underline{\mathsf{z}} + \underline{\mathsf{y}})|) \rhd (|(\underline{\mathsf{x}} + (-u\underline{\mathsf{z}}))| + |(\underline{\mathsf{z}} + \underline{\mathsf{y}})|) <=$

$(|(\underline{x}+(-\mathrm{u}\underline{z}))|+(|(\underline{z}+(-\mathrm{u}\underline{u}))|+|(\underline{u}+\underline{y})|)) \gg |(\underline{x}+\underline{y})| <= (|(\underline{x}+(-\mathrm{u}\underline{z}))|+(|(\underline{z}+(-\mathrm{u}\underline{u}))|+|(\underline{u}+\underline{y})|)); \mathrm{plusAssociativity} \gg (((|(\underline{x}+(-\mathrm{u}\underline{z}))|+|(\underline{z}+(-\mathrm{u}\underline{u}))|)+|(\underline{u}+\underline{y})|) = (|(\underline{x}+(-\mathrm{u}\underline{z}))|+(|(\underline{z}+(-\mathrm{u}\underline{u}))|+|(\underline{u}+\underline{y})|)); \mathrm{eqSymmetry} \rhd (((|(\underline{x}+(-\mathrm{u}\underline{z}))|+|(\underline{z}+(-\mathrm{u}\underline{u}))|)+|(\underline{u}+\underline{y})|) = (|(\underline{x}+(-\mathrm{u}\underline{z}))|+(|(\underline{z}+(-\mathrm{u}\underline{u}))|+|(\underline{u}+\underline{y})|)) \gg (|(\underline{x}+(-\mathrm{u}\underline{z}))|+(|(\underline{z}+(-\mathrm{u}\underline{u}))|+|(\underline{u}+\underline{y})|)) = (((|(\underline{x}+(-\mathrm{u}\underline{z}))|+|(\underline{z}+(-\mathrm{u}\underline{u}))|)+|(\underline{u}+\underline{y})|); \mathrm{subLeqRight} \rhd (|(\underline{x}+(-\mathrm{u}\underline{z}))|+(|(\underline{z}+(-\mathrm{u}\underline{u}))|+|(\underline{u}+\underline{y})|)) = (((|(\underline{x}+(-\mathrm{u}\underline{z}))|+|(\underline{z}+(-\mathrm{u}\underline{u}))|)+|(\underline{u}+\underline{y})|) \rhd |(\underline{x}+\underline{y})| <= (|(\underline{x}+(-\mathrm{u}\underline{z}))|+(|(\underline{z}+(-\mathrm{u}\underline{u}))|+|(\underline{u}+\underline{y})|)) \gg |(\underline{x}+\underline{y})| <= (((|(\underline{x}+(-\mathrm{u}\underline{z}))|+|(\underline{z}+(-\mathrm{u}\underline{u}))|)+|(\underline{u}+\underline{y})|)\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromPositiveNumerical} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}\,(\underline{x} = 0)\mathrm{n}]$

$[\mathrm{FromPositiveNumerical} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon 0 <= \underline{x} \vdash \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{NonnegativeNumerical} \rhd 0 <= \underline{x} \gg |\underline{x}| = \underline{x}; \mathrm{SubLessRight} \rhd |\underline{x}| = \underline{x} \rhd \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(0 <= \underline{x} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessNeq} \rhd \dot{\neg}\,(0 <= \underline{x} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(0 = \underline{x})\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot{\neg}\,(0 = \underline{x})\mathrm{n} \gg \dot{\neg}\,(\underline{x} = 0)\mathrm{n}; \forall \underline{x}\colon \underline{x} <= 0 \vdash \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{lemma\ nonpositiveNumerical} \rhd \underline{x} <= 0 \gg |\underline{x}| = (-\mathrm{u}\underline{x}); \mathrm{SubLessRight} \rhd |\underline{x}| = (-\mathrm{u}\underline{x}) \rhd \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(0 <= (-\mathrm{u}\underline{x}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (-\mathrm{u}\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveNegated} \rhd \dot{\neg}\,(0 <= (-\mathrm{u}\underline{x}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (-\mathrm{u}\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,((-\mathrm{u}(-\mathrm{u}\underline{x})) <= 0 \Rightarrow \dot{\neg}\,(\dot{\neg}\,((-\mathrm{u}(-\mathrm{u}\underline{x})) = 0)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{DoubleMinus} \gg (-\mathrm{u}(-\mathrm{u}\underline{x})) = \underline{x}; \mathrm{SubLessLeft} \rhd (-\mathrm{u}(-\mathrm{u}\underline{x})) = \underline{x} \rhd \dot{\neg}\,((-\mathrm{u}(-\mathrm{u}\underline{x})) <= 0 \Rightarrow \dot{\neg}\,(\dot{\neg}\,((-\mathrm{u}(-\mathrm{u}\underline{x})) = 0)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(\underline{x} <= 0 \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{x} = 0)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessNeq} \rhd \dot{\neg}\,(\underline{x} <= 0 \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{x} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(\underline{x} = 0)\mathrm{n}; \forall \underline{x}\colon \mathrm{Ded} \rhd \forall \underline{x}\colon 0 <= \underline{x} \vdash \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}\,(\underline{x} = 0)\mathrm{n} \gg 0 <= \underline{x} \Rightarrow \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{x} = 0)\mathrm{n}; \mathrm{Ded} \rhd \forall \underline{x}\colon \underline{x} <= 0 \vdash \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}\,(\underline{x} = 0)\mathrm{n} \gg \underline{x} <= 0 \Rightarrow \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{x} = 0)\mathrm{n}; \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{FromLeqGeq} \rhd 0 <= \underline{x} \Rightarrow \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{x} = 0)\mathrm{n} \rhd \underline{x} <= 0 \Rightarrow \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{x} = 0)\mathrm{n} \gg \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{x} = 0)\mathrm{n}; \mathrm{MP} \rhd \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{x} = 0)\mathrm{n} \rhd \dot{\neg}\,(0 <= |\underline{x}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |\underline{x}|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(\underline{x} = 0)\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{NegativeToRight(Neq)(1term)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}\,((\underline{x} + (-\mathrm{u}\underline{y})) = 0)\mathrm{n} \vdash \dot{\neg}\,(\underline{x} = \underline{y})\mathrm{n}]$

$[\mathrm{NegativeToRight(Neq)(1term)} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} = \underline{y} \vdash \mathrm{PositiveToLeft(Eq)(1term)} \rhd \underline{x} = \underline{y} \gg (\underline{x} + (-\mathrm{u}\underline{y})) = 0; \forall \underline{x}\colon \forall \underline{y}\colon \mathrm{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} = \underline{y} \vdash (\underline{x} + (-\mathrm{u}\underline{y})) = 0 \gg \underline{x} = \underline{y} \Rightarrow (\underline{x} + (-\mathrm{u}\underline{y})) = 0; \dot{\neg}\,((\underline{x} + (-\mathrm{u}\underline{y})) = 0)\mathrm{n} \vdash \mathrm{MT} \rhd \underline{x} = \underline{y} \Rightarrow (\underline{x} + (-\mathrm{u}\underline{y})) = 0 \rhd \dot{\neg}\,((\underline{x} + (-\mathrm{u}\underline{y})) = 0)\mathrm{n} \gg \dot{\neg}\,(\underline{x} = \underline{y})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{NonzeroProduct(2)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}\,((\underline{x} * \underline{y}) = 0)\mathrm{n} \vdash \dot{\neg}\,(\underline{y} = 0)\mathrm{n}]$

$[\mathrm{NonzeroProduct(2)} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{y} = 0 \vdash \mathrm{EqMultiplicationLeft} \rhd \underline{y} = 0 \gg (\underline{x} * \underline{y}) = (\underline{x} * 0); \mathrm{x} * 0 = 0 \gg (\underline{x} * 0) = 0; \mathrm{eqTransitivity} \rhd (\underline{x} * \underline{y}) = (\underline{x} * 0) \rhd (\underline{x} * 0) = 0 \gg (\underline{x} * \underline{y}) = 0; \forall \underline{x}\colon \forall \underline{y}\colon \mathrm{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \underline{y} = 0 \vdash (\underline{x} * \underline{y}) = 0 \gg \underline{y} = 0 \Rightarrow (\underline{x} * \underline{y}) = 0; \dot{\neg}\,((\underline{x} * \underline{y}) = 0)\mathrm{n} \vdash \mathrm{MT} \rhd \underline{y} = 0 \Rightarrow (\underline{x} * \underline{y}) = 0 \rhd \dot{\neg}\,((\underline{x} * \underline{y}) = 0)\mathrm{n} \gg \dot{\neg}\,(\underline{y} = 0)\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

[NonreciprocalToRight(Eq)(1term) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{x}\colon \forall \underline{y}\colon (\underline{x}*\underline{y}) = 1 \vdash \underline{x} = \mathrm{rec}\underline{y}$]

[NonreciprocalToRight(Eq)(1term) $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon (\underline{x}*\underline{y}) = 1 \vdash \mathrm{eqMultiplication} \rhd (\underline{x}*\underline{y}) = 1 \gg ((\underline{x}*\underline{y})*\mathrm{rec}\underline{y}) = (1*\mathrm{rec}\underline{y}); 0 < 1 \gg \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveNonzero} \rhd \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(1 = 0)\mathrm{n}; \mathrm{eqSymmetry} \rhd (\underline{x}*\underline{y}) = 1 \gg 1 = (\underline{x}*\underline{y}); \mathrm{SubNeqLeft} \rhd 1 = (\underline{x}*\underline{y}) \rhd \dot{\neg}(1 = 0)\mathrm{n} \gg \dot{\neg}((\underline{x}*\underline{y}) = 0)\mathrm{n}; \mathrm{NonzeroProduct}(2) \rhd \dot{\neg}((\underline{x}*\underline{y}) = 0)\mathrm{n} \gg \dot{\neg}(\underline{y} = 0)\mathrm{n}; \mathrm{x} = \mathrm{x}*\mathrm{y}*(1/\mathrm{y}) \rhd \dot{\neg}(\underline{y} = 0)\mathrm{n} \gg \underline{x} = ((\underline{x}*\underline{y})*\mathrm{rec}\underline{y}); \mathrm{times1Left} \gg (1*\mathrm{rec}\underline{y}) = \mathrm{rec}\underline{y}; \mathrm{eqTransitivity4} \rhd \underline{x} = ((\underline{x}*\underline{y})*\mathrm{rec}\underline{y}) \rhd ((\underline{x}*\underline{y})*\mathrm{rec}\underline{y}) = (1*\mathrm{rec}\underline{y}) \rhd (1*\mathrm{rec}\underline{y}) = \mathrm{rec}\underline{y} \gg \underline{x} = \mathrm{rec}\underline{y}\rceil, \mathrm{p}_0, \mathsf{c})$]

[NonreciprocalToRight(Eq) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(\underline{y} = 0)\mathrm{n} \vdash (\underline{x}*\underline{y}) = \underline{z} \vdash \underline{x} = (\underline{z}*\mathrm{rec}\underline{y})$]

[NonreciprocalToRight(Eq) $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(\underline{y} = 0)\mathrm{n} \vdash (\underline{x}*\underline{y}) = \underline{z} \vdash \mathrm{eqMultiplication} \rhd (\underline{x}*\underline{y}) = \underline{z} \gg ((\underline{x}*\underline{y})*\mathrm{rec}\underline{y}) = (\underline{z}*\mathrm{rec}\underline{y}); \mathrm{x} = \mathrm{x}*\mathrm{y}*(1/\mathrm{y}) \rhd \dot{\neg}(\underline{y} = 0)\mathrm{n} \gg \underline{x} = ((\underline{x}*\underline{y})*\mathrm{rec}\underline{y}); \mathrm{eqTransitivity} \rhd \underline{x} = ((\underline{x}*\underline{y})*\mathrm{rec}\underline{y}) \rhd ((\underline{x}*\underline{y})*\mathrm{rec}\underline{y}) = (\underline{z}*\mathrm{rec}\underline{y}) \gg \underline{x} = (\underline{z}*\mathrm{rec}\underline{y})\rceil, \mathrm{p}_0, \mathsf{c})$]

[NonreciprocalToLeft(Eq)(1term) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{x}\colon \forall \underline{y}\colon 1 = (\underline{x}*\underline{y}) \vdash \mathrm{rec}\underline{y} = \underline{x}$]

[NonreciprocalToLeft(Eq)(1term) $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon 1 = (\underline{x}*\underline{y}) \vdash \mathrm{eqSymmetry} \rhd 1 = (\underline{x}*\underline{y}) \gg (\underline{x}*\underline{y}) = 1; \mathrm{NonreciprocalToRight(Eq)(1term)} \rhd (\underline{x}*\underline{y}) = 1 \gg \underline{x} = \mathrm{rec}\underline{y}; \mathrm{eqSymmetry} \rhd \underline{x} = \mathrm{rec}\underline{y} \gg \mathrm{rec}\underline{y} = \underline{x}\rceil, \mathrm{p}_0, \mathsf{c})$]

[SameReciprocal $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(\underline{x} = 0)\mathrm{n} \vdash \underline{x} = \underline{y} \vdash \mathrm{rec}\underline{x} = \mathrm{rec}\underline{y}$]

[SameReciprocal $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(\underline{x} = 0)\mathrm{n} \vdash \underline{x} = \underline{y} \vdash \mathrm{times1Left} \gg (1*\underline{x}) = \underline{x}; \mathrm{eqTransitivity} \rhd (1*\underline{x}) = \underline{x} \rhd \underline{x} = \underline{y} \gg (1*\underline{x}) = \underline{y}; \mathrm{NonreciprocalToRight(Eq)} \rhd \dot{\neg}(\underline{x} = 0)\mathrm{n} \rhd (1*\underline{x}) = \underline{y} \gg 1 = (\underline{y}*\mathrm{rec}\underline{x}); \mathrm{timesCommutativity} \gg (\underline{y}*\mathrm{rec}\underline{x}) = (\mathrm{rec}\underline{x}*\underline{y}); \mathrm{eqTransitivity} \rhd 1 = (\underline{y}*\mathrm{rec}\underline{x}) \rhd (\underline{y}*\mathrm{rec}\underline{x}) = (\mathrm{rec}\underline{x}*\underline{y}) \gg 1 = (\mathrm{rec}\underline{x}*\underline{y}); \mathrm{NonreciprocalToLeft(Eq)(1term)} \rhd 1 = (\mathrm{rec}\underline{x}*\underline{y}) \gg \mathrm{rec}\underline{y} = \mathrm{rec}\underline{x}; \mathrm{eqSymmetry} \rhd \mathrm{rec}\underline{y} = \mathrm{rec}\underline{x} \gg \mathrm{rec}\underline{x} = \mathrm{rec}\underline{y}\rceil, \mathrm{p}_0, \mathsf{c})$]

[OrderedPairEquality $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \overline{(\mathrm{sx})}\colon \forall \overline{(\mathrm{sx1})}\colon \forall \overline{(\mathrm{sy})}\colon \forall \overline{(\mathrm{sy1})}\colon \forall \overline{(\mathrm{sz})}\colon \forall \overline{(\mathrm{sz1})}\colon \forall \overline{(\mathrm{su})}\colon \forall \overline{(\mathrm{su1})}\colon \{\{\overline{(\mathrm{sx})}, \overline{(\mathrm{sx})}\}, \{\overline{(\mathrm{sx})}, \overline{(\mathrm{sx1})}\}\} = \{\{\overline{(\mathrm{sy})}, \overline{(\mathrm{sy})}\}, \{\overline{(\mathrm{sy})}, \overline{(\mathrm{sy1})}\}\} \vdash \{\{\overline{(\mathrm{sz})}, \overline{(\mathrm{sz})}\}, \{\overline{(\mathrm{sz})}, \overline{(\mathrm{sz1})}\}\} = \{\{\overline{(\mathrm{su})}, \overline{(\mathrm{su})}\}, \{\overline{(\mathrm{su})}, \overline{(\mathrm{su1})}\}\} \vdash \overline{(\mathrm{sx})} = \overline{(\mathrm{sz})} \vdash \overline{(\mathrm{sy})} = \overline{(\mathrm{su})}$]

[OrderedPairEquality $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \overline{(\mathrm{sx})}\colon \forall \overline{(\mathrm{sx1})}\colon \forall \overline{(\mathrm{sy})}\colon \forall \overline{(\mathrm{sy1})}\colon \forall \overline{(\mathrm{sz})}\colon \forall \overline{(\mathrm{sz1})}\colon \forall \overline{(\mathrm{su})}\colon \forall \overline{(\mathrm{su1})}\colon \{\{\overline{(\mathrm{sx})}, \overline{(\mathrm{sx})}\}, \{\overline{(\mathrm{sx})}, \overline{(\mathrm{sx1})}\}\} = \{\{\overline{(\mathrm{sy})}, \overline{(\mathrm{sy})}\}, \{\overline{(\mathrm{sy})}, \overline{(\mathrm{sy1})}\}\} \vdash \{\{\overline{(\mathrm{sz})}, \overline{(\mathrm{sz})}\}, \{\overline{(\mathrm{sz})}, \overline{(\mathrm{sz1})}\}\} = \{\{\overline{(\mathrm{su})}, \overline{(\mathrm{su})}\}, \{\overline{(\mathrm{su})}, \overline{(\mathrm{su1})}\}\} \vdash \overline{(\mathrm{sx})} = \overline{(\mathrm{sz})} \vdash \mathrm{FromOrderedPair}(1) \rhd \{\{\overline{(\mathrm{sx})}, \overline{(\mathrm{sx})}\}, \{\overline{(\mathrm{sx})}, \overline{(\mathrm{sx1})}\}\} = \{\{\overline{(\mathrm{sy})}, \overline{(\mathrm{sy})}\}, \{\overline{(\mathrm{sy})}, \overline{(\mathrm{sy1})}\}\} \gg \overline{(\mathrm{sx})} = \overline{(\mathrm{sy})}; \mathrm{eqSymmetry} \rhd \overline{(\mathrm{sx})} = \overline{(\mathrm{sy})} \gg \overline{(\mathrm{sy})} = \overline{(\mathrm{sx})}; \mathrm{FromOrderedPair}(1) \rhd \{\{\overline{(\mathrm{sz})}, \overline{(\mathrm{sz})}\}, \{\overline{(\mathrm{sz})}, \overline{(\mathrm{sz1})}\}\} = \{\{\overline{(\mathrm{su})}, \overline{(\mathrm{su})}\}, \{\overline{(\mathrm{su})}, \overline{(\mathrm{su1})}\}\} \gg \overline{(\mathrm{sz})} = \overline{(\mathrm{su})}; \mathrm{eqTransitivity4} \rhd \overline{(\mathrm{sy})} = \overline{(\mathrm{sx})} \rhd \overline{(\mathrm{sx})} = \overline{(\mathrm{sz})} \rhd \overline{(\mathrm{sz})} = \overline{(\mathrm{su})} \gg \overline{(\mathrm{sy})} = \overline{(\mathrm{su})}\rceil, \mathrm{p}_0, \mathsf{c})$]

[ReciprocalIsFunction $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{\mathsf{m}}\colon \forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{fx})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in$

$\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)}]$
$[ReciprocalIsFunction \stackrel{proof}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil SystemQ \vdash$
$\forall \underline{\mathsf{m}}: \forall \underline{\mathsf{m}}: \forall \underline{(fx)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \vdash \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \vdash \overline{(f1)} = \overline{(f3)} \vdash$
$Repetition \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \gg \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}; Separation2formula(2) \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in$
$\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \gg \dot{\neg}(\forall_{obj} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n; \mathrm{Repetition} \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj} \underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \gg \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj} \underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}; \mathrm{Separation2formula}(2) \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in$
$\{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj} \underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \gg \dot{\neg}(\forall_{obj} \underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n; \forall \underline{\mathsf{m}}\colon \forall \underline{\mathsf{m}}\colon \forall \underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \vdash$
$\mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \gg \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \gg \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \gg$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\}; \mathrm{FromOrderedPair}(1) \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\} \gg \overline{(f1)} = \underline{\mathsf{m}}; \mathrm{eqSymmetry} \rhd \overline{(f1)} = \underline{\mathsf{m}} \gg \underline{\mathsf{m}} =$
$\overline{(f1)}; \mathrm{FromOrderedPair}(1) \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\} \gg \overline{(f3)} = \underline{\mathsf{m}}; \mathrm{eqTransitivity4} \rhd \underline{\mathsf{m}} = \overline{(f1)} \rhd \overline{(f1)} =$
$\overline{(f3)} \rhd \overline{(f3)} = \underline{\mathsf{m}} \gg \underline{\mathsf{m}} = \underline{\mathsf{m}}; \mathrm{SameSeries} \rhd \underline{\mathsf{m}} = \underline{\mathsf{m}} \gg \underline{(fx)}[\underline{\mathsf{m}}] =$
$\underline{(fx)}[\underline{\mathsf{m}}]; \mathrm{SameReciprocal} \rhd \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \rhd \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fx)}[\underline{\mathsf{m}}] \gg rec\underline{(fx)}[\underline{\mathsf{m}}] =$
$rec\underline{(fx)}[\underline{\mathsf{m}}]; \mathrm{FromOrderedPair}(2) \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\} \gg \overline{(f2)} = rec\underline{(fx)}[\underline{\mathsf{m}}]; \mathrm{FromOrderedPair}(2) \rhd$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\} \gg \overline{(f4)} =$
$rec\underline{(fx)}[\underline{\mathsf{m}}]; \mathrm{eqSymmetry} \rhd \overline{(f4)} = rec\underline{(fx)}[\underline{\mathsf{m}}] \gg rec\underline{(fx)}[\underline{\mathsf{m}}] =$
$\overline{(f4)}; \mathrm{eqTransitivity4} \rhd \overline{(f2)} = rec\underline{(fx)}[\underline{\mathsf{m}}] \rhd rec\underline{(fx)}[\underline{\mathsf{m}}] = rec\underline{(fx)}[\underline{\mathsf{m}}] \rhd rec\underline{(fx)}[\underline{\mathsf{m}}] =$

$\overline{(f4)} \gg \overline{(f2)} = \overline{(f4)}; \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot\neg(\dot\neg(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \vdash \dot\neg(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot\neg(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash$
$\mathrm{FirstConjunct} \rhd \dot\neg(\dot\neg(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \gg \dot\neg(\underline{(fx)}[\underline{m}] =$
$0)n; \mathrm{SecondConjunct} \rhd \dot\neg(\dot\neg(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \gg \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\}; \mathrm{FirstConjunct} \rhd \dot\neg(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot\neg(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg \underline{(fx)}[\underline{m}] =$
$0; \mathrm{SecondConjunct} \rhd \dot\neg(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\}; \mathrm{OrderedPairEquality} \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\} \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\} \rhd \overline{(f1)} = \overline{(f3)} \gg \underline{m} = \underline{m}; \mathrm{SameSeries} \rhd \underline{m} = \underline{m} \gg \underline{(fx)}[\underline{m}] =$
$\underline{(fx)}[\underline{m}]; \mathrm{eqTransitivity} \rhd \underline{(fx)}[\underline{m}] = \underline{(fx)}[\underline{m}] \rhd \underline{(fx)}[\underline{m}] = 0 \gg \underline{(fx)}[\underline{m}] =$
$0; \mathrm{FromContradiction} \rhd \underline{(fx)}[\underline{m}] = 0 \rhd \dot\neg(\underline{(fx)}[\underline{m}] = 0)n \gg \overline{(f2)} =$
$\overline{(f4)}; \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot\neg(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \dot\neg(\dot\neg(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot\neg(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \vdash \mathrm{FirstConjunct} \rhd \dot\neg(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg \underline{(fx)}[\underline{m}] =$
$0; \mathrm{SecondConjunct} \rhd \dot\neg(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\}; \mathrm{FirstConjunct} \rhd \dot\neg(\dot\neg(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot\neg(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \gg \dot\neg(\underline{(fx)}[\underline{m}] =$
$0)n; \mathrm{SecondConjunct} \rhd \dot\neg(\dot\neg(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot\neg(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \gg \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\}; \mathrm{OrderedPairEquality} \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\} \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\} \rhd \overline{(f1)} = \overline{(f3)} \gg \underline{m} = \underline{m}; \mathrm{SameSeries} \rhd \underline{m} = \underline{m} \gg$
$\underline{(fx)}[\underline{m}] = \underline{(fx)}[\underline{m}]; \mathrm{eqSymmetry} \rhd \underline{(fx)}[\underline{m}] = \underline{(fx)}[\underline{m}] \gg \underline{(fx)}[\underline{m}] =$
$\underline{(fx)}[\underline{m}]; \mathrm{eqTransitivity} \rhd \underline{(fx)}[\underline{m}] = \underline{(fx)}[\underline{m}] \rhd \underline{(fx)}[\underline{m}] = 0 \gg \underline{(fx)}[\underline{m}] =$
$0; \mathrm{FromContradiction} \rhd \underline{(fx)}[\underline{m}] = 0 \rhd \dot\neg(\underline{(fx)}[\underline{m}] = 0)n \gg \overline{(f2)} =$
$\overline{(f4)}; \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \dot\neg(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \dot\neg(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \mathrm{SecondConjunct} \rhd \dot\neg(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg$
$\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\}; \mathrm{SecondConjunct} \rhd \dot\neg(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot\neg(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\}; \mathrm{FromOrderedPair}(2) \rhd$
$\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\} \gg \overline{(f2)} =$

$0; \mathrm{FromOrderedPair}(2) \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\} \gg \overline{(f4)} =$
$0; \mathrm{eqSymmetry} \rhd \overline{(f4)} = 0 \gg 0 = \overline{(f4)}; \mathrm{eqTransitivity} \rhd \overline{(f2)} = 0 \rhd 0 = \overline{(f4)} \gg$
$\overline{(f2)} = \overline{(f4)}; \forall \underline{\mathsf{m}} \colon \forall \underline{\mathsf{m}} \colon \forall \underline{(fx)} \colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \vdash \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \vdash$
$\mathrm{Ded} \rhd \forall \underline{\mathsf{m}} \colon \forall \underline{\mathsf{m}} \colon \forall \underline{(fx)} \colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \vdash \overline{(f2)} =$
$\overline{(f4)} \gg \overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{MP} \rhd \overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \rhd \overline{(f1)} = \overline{(f3)} \gg \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{Ded} \rhd \forall \underline{\mathsf{m}} \colon \forall \underline{\mathsf{m}} \colon \forall \underline{(fx)} \colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \vdash \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \vdash \overline{(f2)} = \overline{(f4)} \gg \overline{(f1)} =$
$\overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)}; \mathrm{MP} \rhd \overline{(f1)} =$
$\overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)} \rhd \overline{(f1)} =$
$\overline{(f3)} \gg \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{Ded} \rhd \forall \underline{\mathsf{m}} \colon \forall \underline{\mathsf{m}} \colon \forall \underline{(fx)} \colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \vdash \overline{(f2)} = \overline{(f4)} \gg$
$\overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)}; \mathrm{MP} \rhd \overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \Rightarrow \overline{(f2)} =$

$\overline{(f4)} \rhd \overline{(f1)} = \overline{(f3)} \gg \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)}; \mathrm{Ded} \rhd \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \overline{(f2)} = \overline{(f4)} \gg$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{From2} * \mathrm{2Disjuncts} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \rhd \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \rhd \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)} \rhd \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \rhd \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \gg \overline{(f2)} = \overline{(f4)}; \mathrm{Ded} \rhd \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \overline{(f2)} =$
$\overline{(f4)} \gg \overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{MP} \rhd \overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \overline{(f2)} =$

$\overline{(f4)} \rhd \overline{(f1)} = \overline{(f3)} \gg \dot\neg(\dot\neg(\dot\neg((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \Rightarrow \dot\neg(\dot\neg(\dot\neg((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)}; \mathrm{ExistMP2} \rhd \dot\neg(\dot\neg(\dot\neg((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \Rightarrow \dot\neg(\dot\neg(\dot\neg((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)} \rhd \dot\neg(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n \rhd \dot\neg(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n \gg \overline{(f2)} = \overline{(f4)}; \forall \underline{\mathsf{m}} \colon \forall \underline{\mathsf{m}} \colon \forall \underline{(fx)} \colon \mathrm{Ded} \rhd \forall \underline{\mathsf{m}} \colon \forall \underline{\mathsf{m}} \colon \forall \underline{(fx)} \colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \vdash \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \vdash \overline{(f1)} = \overline{(f3)} \vdash \overline{(f2)} = \overline{(f4)} \gg \forall_{\mathrm{obj}} \overline{(f1)} \colon \forall_{\mathrm{obj}} \overline{(f2)} \colon \forall_{\mathrm{obj}} \overline{(f3)} \colon \forall_{\mathrm{obj}} \overline{(f4)} \colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\mathrm{obj}} \overline{(op1)} \colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}} \overline{(op2)} \colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)}], p_0, \mathsf{c})]$

$[\mathrm{ReciprocalIsTotal} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{(fx)} \colon \forall_{\mathrm{obj}} \overline{(s1)} \colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{\mathrm{obj}} \overline{(s2)} \colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$

$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}]$
$[\mathrm{ReciprocalIsTotal} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \vdash \overline{(\mathrm{s1})} \in \mathrm{N} \vdash$
$\mathrm{RationalType} \gg 0 \in \mathrm{Q}; \mathrm{ToCartProd} \rhd \overline{(\mathrm{s1})} \in \mathrm{N} \rhd 0 \in \mathrm{Q} \gg$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{eqReflexivity} \gg$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\}; \mathrm{JoinConjuncts} \rhd \underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] =$
$0 \rhd \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} \gg \dot\neg(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow$
$\dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} =$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\})\mathrm{n})\mathrm{n}; \mathrm{WeakenOr1} \rhd \dot\neg(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow$
$\dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\})\mathrm{n})\mathrm{n} \gg \dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] =$
$0)\mathrm{n} \Rightarrow \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} =$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\})\mathrm{n})\mathrm{n}; \mathrm{IntroExist} @ \overline{(\mathrm{s1})} \rhd \dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow$
$\dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow$
$\dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Formula2Sep} \rhd \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \rhd \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{IntroExist} @ 0 \rhd \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$

$\mathrm{N} \Rightarrow \dot{\neg}((\overline{\mathrm{op2}}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}; \forall\underline{(\mathrm{fx})}\colon \dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \vdash \overline{(\mathrm{s1})} \in \mathrm{N} \vdash$

$\mathrm{SeriesType} \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ValueType} \rhd \overline{(\mathrm{s1})} \in \mathrm{N} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] \in \mathrm{Q}; \mathrm{QisClosed(Reciprocal)} \rhd \dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \rhd \underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] \in \mathrm{Q} \gg \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] \in \mathrm{Q}; \mathrm{ToCartProd} \rhd \overline{(\mathrm{s1})} \in \mathrm{N} \rhd \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] \in \mathrm{Q} \gg \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{a}_{\mathrm{Ph}}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{eqReflexivity} \gg \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\}; \mathrm{JoinConjuncts} \rhd \dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \rhd \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} \gg \dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n}; \mathrm{WeakenOr2} \rhd \dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\})\mathrm{n})\mathrm{n}; \mathrm{IntroExist} @ \overline{(\mathrm{s1})} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n;\ \mathrm{Formula2Sep} \rhd \{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} \in$
$\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n \gg$
$\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\};\ \mathrm{IntroExist} \mathbin{@} \mathrm{rec}\underline{(fx)}[\overline{(s1)}] \rhd$
$\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \gg \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\})n)n;\ \forall\underline{(fx)}\colon \mathrm{Ded} \rhd \forall\underline{(fx)}\colon \underline{(fx)}[\overline{(s1)}] = 0 \vdash \overline{(s1)} \in N \vdash$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\})n)n \gg \underline{(fx)}[\overline{(s1)}] = 0 \Rightarrow \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\})n)n;\ \mathrm{Ded} \rhd \forall\underline{(fx)}\colon \dot{\neg}(\underline{(fx)}[\overline{(s1)}] = 0)n \vdash \overline{(s1)} \in N \vdash$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}; \mathrm{FromNegations} \rhd \underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow$
$\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}], \mathrm{p}_0, \mathsf{c})]$
$[\mathrm{ReciprocalIsRationalSeries} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} =$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$

$\dot{\neg}(\forall_{obj}\mathsf{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(((fx)[\mathsf{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, rec(fx)[\mathsf{m}]\}\})n)n)n \Rightarrow \dot{\neg}(((fx)[\mathsf{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, 0\}\})n)n)n)n\} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4))n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}(s1): (s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2): \dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}(op1): \dot{\neg}(\dot{\neg}(\forall_{obj}(op2): \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\mathsf{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(((fx)[\mathsf{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, rec(fx)[\mathsf{m}]\}\})n)n)n \Rightarrow \dot{\neg}(((fx)[\mathsf{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, 0\}\})n)n)n)n\})n)n)n)n]$
$[ReciprocalIsRationalSeries \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil SystemQ \vdash$
$\forall(fx): CPseparationIsRelation \gg \forall_{obj}(r1): (r1) \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}(op1): \dot{\neg}(\dot{\neg}(\forall_{obj}(op2): \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\mathsf{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(((fx)[\mathsf{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, rec(fx)[\mathsf{m}]\}\})n)n)n \Rightarrow \dot{\neg}(((fx)[\mathsf{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, 0\}\})n)n)n)n\} \Rightarrow \dot{\neg}(\forall_{obj}(op1): \dot{\neg}(\dot{\neg}(\forall_{obj}(op2): \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in$
$N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}((r1) =$
$\{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n; ReciprocalIsFunction \gg$
$\forall_{obj}(f1): \forall_{obj}(f2): \forall_{obj}(f3): \forall_{obj}(f4): \{\{(f1), (f1)\}, \{(f1), (f2)\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}(op1): \dot{\neg}(\dot{\neg}(\forall_{obj}(op2): \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\mathsf{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(((fx)[\mathsf{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, rec(fx)[\mathsf{m}]\}\})n)n)n \Rightarrow \dot{\neg}(((fx)[\mathsf{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, 0\}\})n)n)n)n\} \Rightarrow \{\{(f3), (f3)\}, \{(f3), (f4)\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}(op1): \dot{\neg}(\dot{\neg}(\forall_{obj}(op2): \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\mathsf{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(((fx)[\mathsf{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, rec(fx)[\mathsf{m}]\}\})n)n)n \Rightarrow \dot{\neg}(((fx)[\mathsf{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, 0\}\})n)n)n)n\} \Rightarrow (f1) = (f3) \Rightarrow (f2) = (f4); ReciprocalIsTotal \gg$
$\forall_{obj}(s1): (s1) \in N \Rightarrow \dot{\neg}(\forall_{obj}(s2): \dot{\neg}(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}(op1): \dot{\neg}(\dot{\neg}(\forall_{obj}(op2): \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\mathsf{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(((fx)[\mathsf{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, rec(fx)[\mathsf{m}]\}\})n)n)n \Rightarrow \dot{\neg}(((fx)[\mathsf{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, 0\}\})n)n)n)n\})n)n; ToSeries \rhd \forall_{obj}(r1): (r1) \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}(op1): \dot{\neg}(\dot{\neg}(\forall_{obj}(op2): \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in N \Rightarrow$
$\dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\mathsf{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(((fx)[\mathsf{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, rec(fx)[\mathsf{m}]\}\})n)n)n \Rightarrow \dot{\neg}(((fx)[\mathsf{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\mathsf{m}, \mathsf{m}\}, \{\mathsf{m}, 0\}\})n)n)n)n\} \Rightarrow \dot{\neg}(\forall_{obj}(op1): \dot{\neg}(\dot{\neg}(\forall_{obj}(op2): \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in$
$N \Rightarrow \dot{\neg}((op2) \in Q)n)n \Rightarrow \dot{\neg}((r1) =$
$\{\{(op1), (op1)\}, \{(op1), (op2)\}\})n)n)n)n)n)n \rhd$

$\forall_{obj}\overline{(f1)}\colon\forall_{obj}\overline{(f2)}\colon\forall_{obj}\overline{(f3)}\colon\forall_{obj}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(op2)}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n\Rightarrow\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}\Rightarrow\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(op2)}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n\Rightarrow\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)}\rhd\forall_{obj}\overline{(s1)}\colon\overline{(s1)}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(op2)}\in\mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n\Rightarrow\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\})n)n\gg\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon\overline{(r1)}\in\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(op2)}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n\Rightarrow\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}\Rightarrow\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in$
$\mathrm{N}\Rightarrow\dot{\neg}(\overline{(op2)}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\overline{(r1)}=$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon\forall_{obj}\overline{(f2)}\colon\forall_{obj}\overline{(f3)}\colon\forall_{obj}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(op2)}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n\Rightarrow\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}\Rightarrow\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(op2)}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n\Rightarrow\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon\overline{(s1)}\in\mathrm{N}\Rightarrow\dot{\neg}(\forall_{obj}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(op2)}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n\Rightarrow\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0\Rightarrow\dot{\neg}(\mathsf{f}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\})n)n)n)n\rceil,\mathrm{p}_0,\mathsf{c})]$
$[\mathrm{ReciprocalFnonzero}\overset{stmt}{\rightarrow}\mathrm{SystemQ}\vdash\forall\underline{\mathsf{m}}\colon\forall\underline{(m1)}\colon\forall\underline{(fx)}\colon\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n\vdash\{\mathrm{ph}\in$

$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in$
$\mathrm{N} \Rightarrow \dot\neg\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]]$

$[\mathrm{ReciprocalFnonzero} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall(\mathrm{m1})\colon \forall(\mathrm{fx})\colon \dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \vdash \mathrm{NatType} \gg \underline{\mathsf{m}} \in \mathrm{N}; \mathrm{ReciprocalIsRationalSeries} \gg \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{r1})\colon (\mathrm{r1}) \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in$
$\mathrm{N} \Rightarrow \dot\neg\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,((\mathrm{r1}) =$
$\{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{f1})\colon \forall_{\mathrm{obj}}(\mathrm{f2})\colon \forall_{\mathrm{obj}}(\mathrm{f3})\colon \forall_{\mathrm{obj}}(\mathrm{f4})\colon \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot\neg\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \{\{(\mathrm{f3}), (\mathrm{f3})\}, \{(\mathrm{f3}), (\mathrm{f4})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot\neg\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{s1})\colon (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot\neg\,(\{\{(\mathrm{s1}), (\mathrm{s1})\}, \{(\mathrm{s1}), (\mathrm{s2})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot\neg\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MemberOfSeries} \rhd \underline{\mathsf{m}} \in$
$\mathrm{N} \rhd \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{r1})\colon (\mathrm{r1}) \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in$
$\mathrm{N} \Rightarrow \dot\neg\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,((\mathrm{r1}) =$
$\{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{f1})\colon \forall_{\mathrm{obj}}(\mathrm{f2})\colon \forall_{\mathrm{obj}}(\mathrm{f3})\colon \forall_{\mathrm{obj}}(\mathrm{f4})\colon \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow$

$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}(s1)\colon (s1) \in N \Rightarrow \dot{\neg}\,(\forall_{obj}(s2)\colon \dot{\neg}\,(\{\{(s1), (s1)\}, \{(s1), (s2)\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\})n)n)n)n \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}]\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}(op1)\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}(op2)\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((op1) \in N \Rightarrow \dot{\neg}\,((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}; Repetition \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}]\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}(op1)\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}(op2)\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((op1) \in N \Rightarrow \dot{\neg}\,((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}(op1)\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}(op2)\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((op1) \in N \Rightarrow \dot{\neg}\,((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}]\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}(op1)\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}(op2)\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((op1) \in N \Rightarrow \dot{\neg}\,((op2) \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}\,((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{Ph} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Separation2formula}(2) \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{\underline{\mathsf{m}}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} (\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} (\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg\,((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{\underline{\mathsf{m}}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \dot\neg\,(\forall_{\mathrm{obj}} \underline{(\mathrm{m1})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,(\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}] = 0)\mathrm{n} \Rightarrow$
$\dot\neg\,(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} (\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} (\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{\underline{\mathsf{m}}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\underline{(\mathrm{m1})}, \underline{(\mathrm{m1})}\}, \{\underline{(\mathrm{m1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}] = 0 \Rightarrow$
$\dot\neg\,(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} (\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} (\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{\underline{\mathsf{m}}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\underline{(\mathrm{m1})}, \underline{(\mathrm{m1})}\}, \{\underline{(\mathrm{m1})}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \forall \underline{\mathsf{m}}\colon \forall (\mathrm{m1})\colon \forall \underline{(\mathrm{fx})}\colon \dot\neg\,(\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}] = 0)\mathrm{n} \vdash$
$\dot\neg\,(\dot\neg\,(\dot\neg\,(\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{\underline{\mathsf{m}}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\underline{(\mathrm{m1})}, \underline{(\mathrm{m1})}\}, \{\underline{(\mathrm{m1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}] = 0 \Rightarrow$
$\dot\neg\,(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} (\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} (\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{\underline{\mathsf{m}}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{\overline{(\mathrm{m1})}, \underline{(\mathrm{m1})}\}, \{\underline{(\mathrm{m1})}, 0\}\})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{ToNegatedAnd}(1) \rhd \dot\neg\,(\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}] = 0)\mathrm{n} \gg \dot\neg\,(\dot\neg\,(\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}] = 0 \Rightarrow$
$\dot\neg\,(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} (\mathrm{op1})\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}} (\mathrm{op2})\colon \dot\neg\,(\dot\neg\,(\dot\neg\,((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{\underline{\mathsf{m}}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg\,(\mathsf{f}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(m1),(m1)\},\{(m1),0\}\})n)n)n;$ NegateDisjunct2 $\triangleright \dot\neg(\dot\neg(\dot\neg((fx)[(m1)] =$
$0)n \Rightarrow \dot\neg(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow \dot\neg((op2) \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(m1),(m1)\},\{(m1),rec(fx)[(m1)]\}\})n)n)n \Rightarrow \dot\neg((fx)[(m1)] = 0 \Rightarrow$
$\dot\neg(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow \dot\neg((op2) \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(m1),(m1)\},\{(m1),0\}\})n)n \triangleright \dot\neg(\dot\neg((fx)[(m1)] = 0 \Rightarrow \dot\neg(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{ph \in$
$\{ph \in P(P(Union(\{N,Q\}))) \mid \dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in$
$N \Rightarrow \dot\neg((op2) \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} =$
$\{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}]\}\} = \{\{(m1),(m1)\},\{(m1),0\}\})n)n)n \gg$
$\dot\neg(\dot\neg((fx)[(m1)] = 0)n \Rightarrow \dot\neg(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow \dot\neg((op2) \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(m1),(m1)\},\{(m1),rec(fx)[(m1)]\}\})n)n;$ SecondConjunct $\triangleright \dot\neg(\dot\neg((fx)[(m1)] =$
$0)n \Rightarrow \dot\neg(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow \dot\neg((op2) \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(m1),(m1)\},\{(m1),rec(fx)[(m1)]\}\})n)n \gg \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow$
$\dot\neg((op2) \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}{:}\ \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(m1),(m1)\},\{(m1),rec(fx)[(m1)]\}\};$ FromOrderedPair(2) $\triangleright$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot\neg(\forall_{obj}(op1){:}\ \dot\neg(\dot\neg(\forall_{obj}(op2){:}\ \dot\neg(\dot\neg(\dot\neg((op1) \in N \Rightarrow \dot\neg((op2) \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \mid$

¬̇ ($\forall_{obj}$m: ¬̇ (¬̇ (¬̇ (¬̇ ((fx)[m] = 0)n ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, rec(fx)[m]}})n)n)n ⇒ ¬̇ ((fx)[m] = 0 ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, 0}})n)n)n)n}[m]}} = {{(m1), (m1)}, {(m1), rec(fx)[(m1)]}} ≫
{ph ∈ {ph ∈ P(P(Union({N, Q}))) |
¬̇ ($\forall_{obj}$(op1): ¬̇ (¬̇ ($\forall_{obj}$(op2): ¬̇ (¬̇ (¬̇ ((op1) ∈ N ⇒ ¬̇ ((op2) ∈ Q)n)n ⇒
¬̇ (a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
¬̇ ($\forall_{obj}$m: ¬̇ (¬̇ (¬̇ (¬̇ ((fx)[m] = 0)n ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, rec(fx)[m]}})n)n)n ⇒ ¬̇ ((fx)[m] = 0 ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, 0}})n)n)n)n}[m] =
rec(fx)[(m1)]; FromOrderedPair(1) ▷ {{m, m}, {m, {ph ∈ {ph ∈
P(P(Union({N, Q}))) | ¬̇ ($\forall_{obj}$(op1): ¬̇ (¬̇ ($\forall_{obj}$(op2): ¬̇ (¬̇ (¬̇ ((op1) ∈ N ⇒
¬̇ ((op2) ∈ Q)n)n ⇒ ¬̇ (a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
¬̇ ($\forall_{obj}$m: ¬̇ (¬̇ (¬̇ (¬̇ ((fx)[m] = 0)n ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, rec(fx)[m]}})n)n)n ⇒ ¬̇ ((fx)[m] = 0 ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, 0}})n)n)n)n}[m]}} = {{(m1), (m1)}, {(m1), rec(fx)[(m1)]}} ≫
m = (m1); SameSeries ▷ m = (m1) ≫ (fx)[m] = (fx)[(m1)]; eqSymmetry ▷
(fx)[m] = (fx)[(m1)] ≫ (fx)[(m1)] = (fx)[m]; SameReciprocal ▷ ¬̇ ((fx)[(m1)] =
0)n ▷ (fx)[(m1)] = (fx)[m] ≫ rec(fx)[(m1)] = rec(fx)[m]; eqTransitivity ▷ {ph ∈
{ph ∈ P(P(Union({N, Q}))) | ¬̇ ($\forall_{obj}$(op1): ¬̇ (¬̇ ($\forall_{obj}$(op2): ¬̇ (¬̇ (¬̇ ((op1) ∈
N ⇒ ¬̇ ((op2) ∈ Q)n)n ⇒ ¬̇ (a_{Ph} =
{{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ¬̇ ($\forall_{obj}$m: ¬̇ (¬̇ (¬̇ (¬̇ ((fx)[m] =
0)n ⇒ ¬̇ (f_{Ph} = {{m, m}, {m, rec(fx)[m]}})n)n)n ⇒ ¬̇ ((fx)[m] = 0 ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, 0}})n)n)n)n}[m] = rec(fx)[(m1)] ▷ rec(fx)[(m1)] = rec(fx)[m] ≫
{ph ∈ {ph ∈ P(P(Union({N, Q}))) |
¬̇ ($\forall_{obj}$(op1): ¬̇ (¬̇ ($\forall_{obj}$(op2): ¬̇ (¬̇ (¬̇ ((op1) ∈ N ⇒ ¬̇ ((op2) ∈ Q)n)n ⇒
¬̇ (a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
¬̇ ($\forall_{obj}$m: ¬̇ (¬̇ (¬̇ (¬̇ ((fx)[m] = 0)n ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, rec(fx)[m]}})n)n)n ⇒ ¬̇ ((fx)[m] = 0 ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, 0}})n)n)n)n}[m] =
rec(fx)[m]; Ded ▷ ∀m: ∀(m1): ∀(fx): ¬̇ ((fx)[(m1)] = 0)n ⊢ ¬̇ (¬̇ (¬̇ ((fx)[(m1)] =
0)n ⇒ ¬̇ ({{m, m}, {m, {ph ∈ {ph ∈ P(P(Union({N, Q}))) |
¬̇ ($\forall_{obj}$(op1): ¬̇ (¬̇ ($\forall_{obj}$(op2): ¬̇ (¬̇ (¬̇ ((op1) ∈ N ⇒ ¬̇ ((op2) ∈ Q)n)n ⇒
¬̇ (a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
¬̇ ($\forall_{obj}$m: ¬̇ (¬̇ (¬̇ (¬̇ ((fx)[m] = 0)n ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, rec(fx)[m]}})n)n)n ⇒ ¬̇ ((fx)[m] = 0 ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, 0}})n)n)n)n}[m]}} =
{{(m1), (m1)}, {(m1), rec(fx)[(m1)]}})n)n)n ⇒ ¬̇ ((fx)[(m1)] = 0 ⇒
¬̇ ({{m, m}, {m, {ph ∈ {ph ∈ P(P(Union({N, Q}))) |
¬̇ ($\forall_{obj}$(op1): ¬̇ (¬̇ ($\forall_{obj}$(op2): ¬̇ (¬̇ (¬̇ ((op1) ∈ N ⇒ ¬̇ ((op2) ∈ Q)n)n ⇒
¬̇ (a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
¬̇ ($\forall_{obj}$m: ¬̇ (¬̇ (¬̇ (¬̇ ((fx)[m] = 0)n ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, rec(fx)[m]}})n)n)n ⇒ ¬̇ ((fx)[m] = 0 ⇒ ¬̇ (f_{Ph} =
{{m, m}, {m, 0}})n)n)n)n}[m]}} = {{(m1), (m1)}, {(m1), 0}})n)n ⊢ {ph ∈
{ph ∈ P(P(Union({N, Q}))) | ¬̇ ($\forall_{obj}$(op1): ¬̇ (¬̇ ($\forall_{obj}$(op2): ¬̇ (¬̇ (¬̇ ((op1) ∈

$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] \gg \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, \mathrm{rec}\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, 0\}\})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]; \mathrm{MP} \rhd \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, \mathrm{rec}\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, 0\}\})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] \rhd \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \gg$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} \colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} \colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$

$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(\mathrm{m1}), (\mathrm{m1})\}, \{(\mathrm{m1}), \mathrm{rec}(\mathrm{fx})[(\mathrm{m1})]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[(\mathrm{m1})] = 0 \Rightarrow$
$\dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{(\mathrm{m1}), (\mathrm{m1})\}, \{(\mathrm{m1}), 0\}\})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in$
$\mathrm{N} \Rightarrow \dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]; \mathrm{ExistMP} \rhd \dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[(\mathrm{m1})] =$
$0)\mathrm{n} \Rightarrow \dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(\mathrm{m1}), (\mathrm{m1})\}, \{(\mathrm{m1}), \mathrm{rec}(\mathrm{fx})[(\mathrm{m1})]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[(\mathrm{m1})] = 0 \Rightarrow$
$\dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{(\mathrm{m1}), (\mathrm{m1})\}, \{(\mathrm{m1}), 0\}\})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in$
$\mathrm{N} \Rightarrow \dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] =$
$\mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}] \rhd \dot\neg(\forall_{\mathrm{obj}}(\mathrm{m1})\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[(\mathrm{m1})] = 0)\mathrm{n} \Rightarrow \dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in$
$\mathrm{N} \Rightarrow \dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(\mathrm{m1}), (\mathrm{m1})\}, \{(\mathrm{m1}), \mathrm{rec}(\mathrm{fx})[(\mathrm{m1})]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[(\mathrm{m1})] = 0 \Rightarrow$
$\dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot\neg(\dot\neg(\dot\neg((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot\neg((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\underline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{\underline{(\mathrm{m1})},\underline{(\mathrm{m1})}\},\{\underline{(\mathrm{m1})},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\underline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}(\underline{\mathrm{fx}})[\underline{\mathsf{m}}]\rceil, \mathrm{p}_0, \mathsf{c})]$

$[(\mathrm{Eventually} = \mathrm{f})\mathrm{2sameF}(\mathrm{Helper}) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}] \Rightarrow \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[(\mathrm{Eventually} = \mathrm{f})\mathrm{2sameF}(\mathrm{Helper}) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}] \vdash \mathrm{A4} @ \underline{\mathsf{m}} \rhd$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}] \gg \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}]; \dot{\neg}\,(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash \mathrm{MP} \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] =$
$(\underline{\mathrm{fy}})[\underline{\mathsf{m}}] \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \gg (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}]; \mathrm{PositiveToLeft}(\mathrm{Eq})(\mathrm{1term}) \rhd (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] =$
$(\underline{\mathrm{fy}})[\underline{\mathsf{m}}] \gg ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}])) =$
$0; \mathrm{SameNumerical} \rhd ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}])) = 0 \gg |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| =$
$|0|; |0| = 0 \gg |0| = 0; \mathrm{eqTransitivity} \rhd |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| = |0| \rhd |0| =$
$0 \gg |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| = 0; \mathrm{eqSymmetry} \rhd |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| =$
$0 \gg 0 = |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))|; \mathrm{SubLessLeft} \rhd 0 =$
$|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| \rhd \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon \mathrm{Ded} \rhd \forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}] \vdash \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash$
$\dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}] \Rightarrow \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[(\mathrm{Eventually} = \mathrm{f})\mathrm{2sameF} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(|((\underline{\mathrm{fx}})[\overline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\underline{\mathrm{fx}})[\overline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[(\mathrm{Eventually} = \mathrm{f})\mathrm{2sameF} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n} \vdash$
$(\mathrm{Eventually} = \mathrm{f})\mathrm{2sameF}(\mathrm{Helper}) \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}] \Rightarrow$
$\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ExistMP} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}] \Rightarrow \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$(\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = (\underline{\mathrm{fy}})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$

$\dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}$; Gen $\rhd$ $\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}$; IntroExist @ $\underline{\mathsf{n}}$ $\rhd$ $\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; Gen $\rhd$ $\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; Ded $\rhd$ $\forall_{\mathrm{obj}}\underline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}$; Repetition $\rhd$ $\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

[PositiveToRight(Less) $\stackrel{\mathrm{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \dot\neg((\underline{\mathsf{x}} + \underline{\mathsf{y}}) <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} + \underline{\mathsf{y}}) = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(\underline{\mathsf{x}} <= (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{y}})) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{y}})))\mathrm{n})\mathrm{n})\mathrm{n}]$

[PositiveToRight(Less) $\stackrel{\mathrm{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \dot\neg((\underline{\mathsf{x}} + \underline{\mathsf{y}}) <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} + \underline{\mathsf{y}}) = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$ LessAddition $\rhd$ $\dot\neg((\underline{\mathsf{x}} + \underline{\mathsf{y}}) <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} + \underline{\mathsf{y}}) = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + (-\mathrm{u}\underline{\mathsf{y}})) <= (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{y}})) \Rightarrow \dot\neg(\dot\neg(((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + (-\mathrm{u}\underline{\mathsf{y}})) = (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{y}})))\mathrm{n})\mathrm{n})\mathrm{n}$; $\mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg \underline{\mathsf{x}} = ((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + (-\mathrm{u}\underline{\mathsf{y}}))$; eqSymmetry $\rhd$ $\underline{\mathsf{x}} = ((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + (-\mathrm{u}\underline{\mathsf{y}})) \gg ((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + (-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{x}}$; SubLessLeft $\rhd$ $((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + (-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{x}} \rhd \dot\neg(((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + (-\mathrm{u}\underline{\mathsf{y}})) <= (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{y}})) \Rightarrow \dot\neg(\dot\neg(((\underline{\mathsf{x}} + \underline{\mathsf{y}}) + (-\mathrm{u}\underline{\mathsf{y}})) = (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{y}})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\underline{\mathsf{x}} <= (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{y}})) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{y}})))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

[SwitchTerms($\mathrm{x} - \mathrm{y} < \mathrm{z}$) $\stackrel{\mathrm{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \dot\neg((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n}]$

[SwitchTerms($\mathrm{x} - \mathrm{y} < \mathrm{z}$) $\stackrel{\mathrm{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \dot\neg((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$ NegativeToRight(Less) $\rhd$ $\dot\neg((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}})) = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\underline{\mathsf{x}} <= (\underline{\mathsf{z}} + \underline{\mathsf{y}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = (\underline{\mathsf{z}} + \underline{\mathsf{y}}))\mathrm{n})\mathrm{n})\mathrm{n}$; plusCommutativity $\gg (\underline{\mathsf{z}} + \underline{\mathsf{y}}) = (\underline{\mathsf{y}} + \underline{\mathsf{z}})$; SubLessRight $\rhd$ $(\underline{\mathsf{z}} + \underline{\mathsf{y}}) = (\underline{\mathsf{y}} + \underline{\mathsf{z}}) \rhd \dot\neg(\underline{\mathsf{x}} <= (\underline{\mathsf{z}} + \underline{\mathsf{y}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = (\underline{\mathsf{z}} + \underline{\mathsf{y}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\underline{\mathsf{x}} <= (\underline{\mathsf{y}} + \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = (\underline{\mathsf{y}} + \underline{\mathsf{z}}))\mathrm{n})\mathrm{n})\mathrm{n}$; PositiveToLeft(Less) $\rhd$ $\dot\neg(\underline{\mathsf{x}} <= (\underline{\mathsf{y}} + \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} =$

$(\underline{y} + \underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{x} + (-\mathrm{u}\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-\mathrm{u}\underline{z})) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SwitchTerms}(\mathrm{x} < \mathrm{y} - \mathrm{z}) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{x} <= (\underline{y} + (-\mathrm{u}\underline{z})) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} + (-\mathrm{u}\underline{z})))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{z} <= (\underline{y} + (-\mathrm{u}\underline{x})) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = (\underline{y} + (-\mathrm{u}\underline{x})))\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{SwitchTerms}(\mathrm{x} < \mathrm{y} - \mathrm{z}) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{x} <= (\underline{y} + (-\mathrm{u}\underline{z})) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} + (-\mathrm{u}\underline{z})))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{NegativeToLeft}(\mathrm{Less}) \rhd \dot{\neg}(\underline{x} <= (\underline{y} + (-\mathrm{u}\underline{z})) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} + (-\mathrm{u}\underline{z})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{x} + \underline{z}) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + \underline{z}) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{plusCommutativity} \gg (\underline{x} + \underline{z}) = (\underline{z} + \underline{x}); \mathrm{SubLessLeft} \rhd (\underline{x} + \underline{z}) = (\underline{z} + \underline{x}) \rhd \dot{\neg}((\underline{x} + \underline{z}) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + \underline{z}) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{z} + \underline{x}) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{z}+\underline{x}) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveToRight}(\mathrm{Less}) \rhd \dot{\neg}((\underline{z}+\underline{x}) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{z}+\underline{x}) = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{z} <= (\underline{y} + (-\mathrm{u}\underline{x})) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = (\underline{y} + (-\mathrm{u}\underline{x})))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{insertTwoMiddleTerms}(\mathrm{Sum}) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \forall\underline{u}\colon (\underline{x} + \underline{y}) = (((\underline{x} + (-\mathrm{u}\underline{z})) + (\underline{z} + (-\mathrm{u}\underline{u}))) + (\underline{u} + \underline{y}))]$

$[\mathrm{insertTwoMiddleTerms}(\mathrm{Sum}) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \forall\underline{u}\colon \mathrm{insertMiddleTerm}(\mathrm{Sum}) \gg (\underline{x} + \underline{y}) = ((\underline{x} + (-\mathrm{u}\underline{z})) + (\underline{z} + \underline{y})); \mathrm{insertMiddleTerm}(\mathrm{Sum}) \gg (\underline{z} + \underline{y}) = ((\underline{z} + (-\mathrm{u}\underline{u})) + (\underline{u} + \underline{y})); \mathrm{EqAdditionLeft} \rhd (\underline{z} + \underline{y}) = ((\underline{z} + (-\mathrm{u}\underline{u})) + (\underline{u} + \underline{y})) \gg ((\underline{x}+(-\mathrm{u}\underline{z}))+(\underline{z}+\underline{y})) = ((\underline{x}+(-\mathrm{u}\underline{z}))+((\underline{z}+(-\mathrm{u}\underline{u}))+(\underline{u}+\underline{y}))); \mathrm{plusAssociativity} \gg (((\underline{x} + (-\mathrm{u}\underline{z})) + (\underline{z} + (-\mathrm{u}\underline{u}))) + (\underline{u} + \underline{y})) = ((\underline{x} + (-\mathrm{u}\underline{z})) + ((\underline{z} + (-\mathrm{u}\underline{u})) + (\underline{u} + \underline{y}))); \mathrm{eqSymmetry} \rhd (((\underline{x} + (-\mathrm{u}\underline{z})) + (\underline{z} + (-\mathrm{u}\underline{u}))) + (\underline{u} + \underline{y})) = ((\underline{x}+(-\mathrm{u}\underline{z}))+((\underline{z}+(-\mathrm{u}\underline{u}))+(\underline{u}+\underline{y}))) \gg ((\underline{x}+(-\mathrm{u}\underline{z}))+((\underline{z}+(-\mathrm{u}\underline{u}))+(\underline{u}+\underline{y}))) = (((\underline{x} + (-\mathrm{u}\underline{z})) + (\underline{z} + (-\mathrm{u}\underline{u}))) + (\underline{u} + \underline{y})); \mathrm{eqTransitivity4} \rhd (\underline{x} + \underline{y}) = ((\underline{x} + (-\mathrm{u}\underline{z})) + (\underline{z} + \underline{y})) \rhd ((\underline{x} + (-\mathrm{u}\underline{z})) + (\underline{z} + \underline{y})) = ((\underline{x}+(-\mathrm{u}\underline{z}))+((\underline{z}+(-\mathrm{u}\underline{u}))+(\underline{u}+\underline{y}))) \rhd ((\underline{x}+(-\mathrm{u}\underline{z}))+((\underline{z}+(-\mathrm{u}\underline{u}))+(\underline{u}+\underline{y}))) = (((\underline{x} + (-\mathrm{u}\underline{z})) + (\underline{z} + (-\mathrm{u}\underline{u}))) + (\underline{u} + \underline{y})) \gg (\underline{x} + \underline{y}) = (((\underline{x} + (-\mathrm{u}\underline{z})) + (\underline{z} + (-\mathrm{u}\underline{u}))) + (\underline{u} + \underline{y}))\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromNumericalGreater} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\dot{\neg}(\underline{y} <= (-\mathrm{u}\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-\mathrm{u}\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{FromNumericalGreater} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash 0 <= \underline{y} \vdash \mathrm{NonnegativeNumerical} \rhd 0 <= \underline{y} \gg |\underline{y}| = \underline{y}; \mathrm{SubLessRight} \rhd |\underline{y}| = \underline{y} \rhd \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{WeakenOr1} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\underline{y} <= (-\mathrm{u}\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-\mathrm{u}\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{y} <= 0 \vdash \mathrm{lemma\ nonpositiveNumerical} \rhd \underline{y} <= 0 \gg |\underline{y}| = (-\mathrm{u}\underline{y}); \mathrm{SubLessRight} \rhd |\underline{y}| = (-\mathrm{u}\underline{y}) \rhd \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= (-\mathrm{u}\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (-\mathrm{u}\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessNegated} \rhd \dot{\neg}(\underline{x} <= (-\mathrm{u}\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (-\mathrm{u}\underline{y}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}(-\mathrm{u}\underline{y})) <= (-\mathrm{u}\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}(-\mathrm{u}\underline{y})) = (-\mathrm{u}\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{DoubleMinus} \gg (-\mathrm{u}(-\mathrm{u}\underline{y})) = \underline{y}; \mathrm{SubLessLeft} \rhd (-\mathrm{u}(-\mathrm{u}\underline{y})) = \underline{y} \rhd \dot{\neg}((-\mathrm{u}(-\mathrm{u}\underline{y})) <= (-\mathrm{u}\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}(-\mathrm{u}\underline{y})) = (-\mathrm{u}\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{y} <= (-\mathrm{u}\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-\mathrm{u}\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{WeakenOr2} \rhd \dot{\neg}(\underline{y} <= (-\mathrm{u}\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-\mathrm{u}\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\underline{y} <= (-\mathrm{u}\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-\mathrm{u}\underline{x}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} =$

$\underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \mathrm{Ded} \triangleright \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \dot\neg(\underline{\mathsf{x}} <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash 0 <= \underline{\mathsf{y}} \vdash$
$\dot\neg(\dot\neg(\underline{\mathsf{y}} <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} =$
$\underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\underline{\mathsf{x}} <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow 0 <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow$
$\dot\neg(\dot\neg(\underline{\mathsf{y}} = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} =$
$\underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Ded} \triangleright \forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \dot\neg(\underline{\mathsf{x}} <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{y}} <= 0 \vdash \dot\neg(\dot\neg(\underline{\mathsf{y}} <=$
$(-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\underline{\mathsf{x}} <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{y}} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} =$
$(-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n}; \dot\neg(\underline{\mathsf{x}} <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} =$
$|\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{MP} \triangleright \dot\neg(\underline{\mathsf{x}} <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow 0 <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} <=$
$(-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \triangleright \dot\neg(\underline{\mathsf{x}} <=$
$|\underline{\mathsf{y}}| \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} =$
$(-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MP} \triangleright \dot\neg(\underline{\mathsf{x}} <= |\underline{\mathsf{y}}| \Rightarrow$
$\dot\neg(\dot\neg(\underline{\mathsf{x}} = |\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{y}} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} =$
$(-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \triangleright \dot\neg(\underline{\mathsf{x}} <= |\underline{\mathsf{y}}| \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} =$
$|\underline{\mathsf{y}}|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{y}} <= 0 \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FromLeqGeq} \triangleright 0 <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow$
$\dot\neg(\dot\neg(\underline{\mathsf{y}} = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \triangleright \underline{\mathsf{y}} <= 0 \Rightarrow$
$\dot\neg(\dot\neg(\underline{\mathsf{y}} <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{x}} =$
$\underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\dot\neg(\underline{\mathsf{y}} <= (-\mathrm{u}\underline{\mathsf{x}}) \Rightarrow \dot\neg(\dot\neg(\underline{\mathsf{y}} = (-\mathrm{u}\underline{\mathsf{x}}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow$
$\dot\neg(\dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromNot} < \mathrm{f}(\mathrm{Weak})(\mathrm{Helper}) \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) <= \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] \Rightarrow$
$\dot\neg(\dot\neg((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) = \underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{FromNot} < \mathrm{f}(\mathrm{Weak})(\mathrm{Helper}) \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{FromNegatedAnd} \triangleright \dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \triangleright \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n}; \mathrm{FromNegatedImply} \triangleright \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n} \gg \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \triangleright \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{n}} <= \underline{\mathsf{m}}; \mathrm{SecondConjunct} \triangleright \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n}; \mathrm{ToLess} \triangleright \dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n} \gg$
$\dot\neg((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) <= \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] \Rightarrow \dot\neg(\dot\neg((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) =$
$\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{JoinConjuncts} \triangleright \underline{\mathsf{n}} <= \underline{\mathsf{m}} \triangleright \dot\neg((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) <= \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] \Rightarrow$
$\dot\neg(\dot\neg((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) = \underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg(\dot\neg((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) <= \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] \Rightarrow \dot\neg(\dot\neg((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) =$
$\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \mathrm{Ded} \triangleright$
$\forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) <= \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] \Rightarrow$

$\dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) = \underline{(fx)}[\underline{\mathsf{m}}])n)n)n)n)n \gg \dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= ((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n \Rightarrow \dot\neg(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) <=$
$\underline{(fx)}[\underline{\mathsf{m}}] \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) = \underline{(fx)}[\underline{\mathsf{m}}])n)n)n)n)n)n\rceil, p_0, \mathsf{c})\rceil$

$[\mathrm{FromNot} < f(\mathrm{Weak}) \xrightarrow{\mathrm{stmt}} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(fx)}\colon\forall\underline{(fy)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$((\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \vdash \forall_{obj}\underline{(\epsilon)}\colon \forall_{obj}\underline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) <= \underline{(fx)}[\underline{\mathsf{m}}] \Rightarrow$
$\dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) = \underline{(fx)}[\underline{\mathsf{m}}])n)n)n)n)n)n)n]$

$[\mathrm{FromNot} < f(\mathrm{Weak}) \xrightarrow{\mathrm{proof}} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(fx)}\colon\forall\underline{(fy)}\colon \dot\neg(\forall_{obj}\underline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= ((\underline{(fy)}[\underline{\mathsf{m}}] +$
$(-u\underline{(\epsilon)})))n)n)n)n)n)n \vdash \mathrm{Ded} \rhd \dot\neg(\forall_{obj}\underline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <=$
$((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n \gg \dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= ((\underline{(fy)}[\overline{\mathsf{m}}] +$
$(-u\overline{(\epsilon)})))n)n)n)n)n)n; \mathrm{Repetition} \rhd \dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$((\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \gg \dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$((\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n; \forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(fx)}\colon\forall\underline{(fy)}\colon \mathrm{Ded} \rhd$
$\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(fx)}\colon\forall\underline{(fy)}\colon \dot\neg(\forall_{obj}\underline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <=$
$((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n \vdash \dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$((\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \gg \dot\neg(\forall_{obj}\underline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <=$
$((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n \Rightarrow \dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$((\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n; \dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$((\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \vdash$
$\mathrm{MT} \rhd \dot\neg(\forall_{obj}\underline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= ((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= ((\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \rhd$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= ((\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \gg$
$\dot\neg(\dot\neg(\forall_{obj}\underline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow$

$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{EEA} - \mathrm{negated} \rhd$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\epsilon)\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}(\epsilon)\colon \forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{A4} @ (\epsilon) \rhd$
$\forall_{\mathrm{obj}}(\epsilon)\colon \forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$(\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{A4} @ \underline{\mathsf{n}} \rhd$
$\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$(\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <=$
$((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FromNot} < \mathrm{f(Weak)(Helper)} \gg \dot\neg(\dot\neg(\dot\neg(0 <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <=$
$((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) <= (\mathrm{fx})[\underline{\mathsf{m}}] \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) =$
$(\mathrm{fx})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ExistMP} \rhd \dot\neg(\dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) <= (\mathrm{fx})[\underline{\mathsf{m}}] \Rightarrow$
$\dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) = (\mathrm{fx})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\underline{\mathsf{m}}] <=$
$((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) <= (\mathrm{fx})[\underline{\mathsf{m}}] \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) =$
$(\mathrm{fx})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{IntroExist} @ \underline{\mathsf{m}} \rhd \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) <= (\mathrm{fx})[\underline{\mathsf{m}}] \Rightarrow$
$\dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) = (\mathrm{fx})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) <= (\mathrm{fx})[\underline{\mathsf{m}}] \Rightarrow$
$\dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) = (\mathrm{fx})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Gen} \rhd \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) <=$
$(\mathrm{fx})[\underline{\mathsf{m}}] \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) = (\mathrm{fx})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) <= (\mathrm{fx})[\underline{\mathsf{m}}] \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) =$
$(\mathrm{fx})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Gen} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) <= (\mathrm{fx})[\underline{\mathsf{m}}] \Rightarrow$
$\dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) = (\mathrm{fx})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}(\epsilon)\colon \forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) <= (\mathrm{fx})[\underline{\mathsf{m}}] \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) =$
$(\mathrm{fx})[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromNot} < \mathrm{f(Strong)(Helper2)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \forall\underline{\mathsf{u}}\colon \forall\underline{\mathsf{v}}\colon \dot\neg(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))| <=$
$(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow \dot\neg(\dot\neg(|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\dot\neg((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}})) <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}})) =$
$(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) <= \underline{\mathsf{v}} \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) = \underline{\mathsf{v}})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{FromNot} < \mathrm{f(Strong)(Helper2)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$

∀$\underline{x}$: ∀$\underline{y}$: ∀$\underline{z}$: ∀$\underline{u}$: ∀$\underline{v}$: $\dot{\neg}$(|($\underline{x}$+(−u$\underline{y}$))| <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(|($\underline{x}$+(−u$\underline{y}$))| = (rec((1+1)+1)∗$\underline{v}$))n)n)n ⊢ $\dot{\neg}$(|($\underline{z}$+(−u$\underline{u}$))| <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(|($\underline{z}$+(−u$\underline{u}$))| = (rec((1+1)+1)∗$\underline{v}$))n)n)n ⊢ $\dot{\neg}$(($\underline{y}$+(−u$\underline{u}$)) <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(($\underline{y}$+(−u$\underline{u}$)) = (rec((1+1)+1)∗$\underline{v}$))n)n)n ⊢ x <= |x| ≫ ($\underline{x}$+(−u$\underline{y}$)) <= |($\underline{x}$+(−u$\underline{y}$))|; leqLessTransitivity ▷ ($\underline{x}$+(−u$\underline{y}$)) <= |($\underline{x}$+(−u$\underline{y}$))| ▷ $\dot{\neg}$(|($\underline{x}$+(−u$\underline{y}$))| <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(|($\underline{x}$+(−u$\underline{y}$))| = (rec((1+1)+1)∗$\underline{v}$))n)n)n ≫ $\dot{\neg}$(($\underline{x}$+(−u$\underline{y}$)) <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(($\underline{x}$+(−u$\underline{y}$)) = (rec((1+1)+1)∗$\underline{v}$))n)n)n; NumericalDifference ≫ |($\underline{z}$+(−u$\underline{u}$))| = |($\underline{u}$+(−u$\underline{z}$))|; SubLessLeft ▷ |($\underline{z}$+(−u$\underline{u}$))| = |($\underline{u}$+(−u$\underline{z}$))| ▷ $\dot{\neg}$(|($\underline{z}$+(−u$\underline{u}$))| <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(|($\underline{z}$+(−u$\underline{u}$))| = (rec((1+1)+1)∗$\underline{v}$))n)n)n ≫ $\dot{\neg}$(|($\underline{u}$+(−u$\underline{z}$))| <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(|($\underline{u}$+(−u$\underline{z}$))| = (rec((1+1)+1)∗$\underline{v}$))n)n)n; x <= |x| ≫ ($\underline{u}$+(−u$\underline{z}$)) <= |($\underline{u}$+(−u$\underline{z}$))|; leqLessTransitivity ▷ ($\underline{u}$+(−u$\underline{z}$)) <= |($\underline{u}$+(−u$\underline{z}$))| ▷ $\dot{\neg}$(|($\underline{u}$+(−u$\underline{z}$))| <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(|($\underline{u}$+(−u$\underline{z}$))| = (rec((1+1)+1)∗$\underline{v}$))n)n)n ≫ $\dot{\neg}$(($\underline{u}$+(−u$\underline{z}$)) <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(($\underline{u}$+(−u$\underline{z}$)) = (rec((1+1)+1)∗$\underline{v}$))n)n)n; AddEquations(Less) ▷ $\dot{\neg}$(($\underline{x}$+(−u$\underline{y}$)) <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(($\underline{x}$+(−u$\underline{y}$)) = (rec((1+1)+1)∗$\underline{v}$))n)n)n ▷ $\dot{\neg}$(($\underline{y}$+(−u$\underline{u}$)) <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(($\underline{y}$+(−u$\underline{u}$)) = (rec((1+1)+1)∗$\underline{v}$))n)n)n ≫ $\dot{\neg}$((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$))) <= ((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$)) ⇒ $\dot{\neg}$($\dot{\neg}$((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$))) = ((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$)))n)n)n; AddEquations(Less) ▷ $\dot{\neg}$((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$))) <= ((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$)) ⇒ $\dot{\neg}$($\dot{\neg}$((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$))) = ((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$)))n)n)n ▷ $\dot{\neg}$(($\underline{u}$+(−u$\underline{z}$)) <= (rec((1+1)+1)∗$\underline{v}$) ⇒ $\dot{\neg}$($\dot{\neg}$(($\underline{u}$+(−u$\underline{z}$)) = (rec((1+1)+1)∗$\underline{v}$))n)n)n ≫ $\dot{\neg}$(((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$)))+($\underline{u}$+(−u$\underline{z}$))) <= (((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$))+(rec((1+1)+1)∗$\underline{v}$)) ⇒ $\dot{\neg}$($\dot{\neg}$(((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$)))+($\underline{u}$+(−u$\underline{z}$))) = (((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$))+(rec((1+1)+1)∗$\underline{v}$)))n)n)n; insertTwoMiddleTerms(Sum) ≫ ($\underline{x}$+(−u$\underline{z}$)) = ((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$)))+($\underline{u}$+(−u$\underline{z}$))); eqSymmetry ▷ ($\underline{x}$+(−u$\underline{z}$)) = ((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$)))+($\underline{u}$+(−u$\underline{z}$))) ≫ ((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$)))+($\underline{u}$+(−u$\underline{z}$))) = ($\underline{x}$+(−u$\underline{z}$)); SubLessLeft ▷ ((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$)))+($\underline{u}$+(−u$\underline{z}$))) = ($\underline{x}$+(−u$\underline{z}$)) ▷ $\dot{\neg}$(((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$)))+($\underline{u}$+(−u$\underline{z}$))) <= (((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$))+(rec((1+1)+1)∗$\underline{v}$)) ⇒ $\dot{\neg}$($\dot{\neg}$(((($\underline{x}$+(−u$\underline{y}$))+($\underline{y}$+(−u$\underline{u}$)))+($\underline{u}$+(−u$\underline{z}$))) = (((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$))+(rec((1+1)+1)∗$\underline{v}$)))n)n)n ≫ $\dot{\neg}$(($\underline{x}$+(−u$\underline{z}$)) <= (((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$))+(rec((1+1)+1)∗$\underline{v}$)) ⇒ $\dot{\neg}$($\dot{\neg}$(($\underline{x}$+(−u$\underline{z}$)) = (((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$))+(rec((1+1)+1)∗$\underline{v}$)))n)n)n; ThreeThirds ≫ (((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$))+(rec((1+1)+1)∗$\underline{v}$)) = $\underline{v}$; SubLessRight ▷ (((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$))+(rec((1+1)+1)∗$\underline{v}$)) = $\underline{v}$ ▷ $\dot{\neg}$(($\underline{x}$+(−u$\underline{z}$)) <= (((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$))+(rec((1+1)+1)∗$\underline{v}$)) ⇒ $\dot{\neg}$($\dot{\neg}$(($\underline{x}$+(−u$\underline{z}$)) = (((rec((1+1)+1)∗$\underline{v}$)+(rec((1+1)+1)∗$\underline{v}$))+(rec((1+1)+1)∗$\underline{v}$)))n)n)n ≫ $\dot{\neg}$(($\underline{x}$+(−u$\underline{z}$)) <= $\underline{v}$ ⇒ $\dot{\neg}$($\dot{\neg}$(($\underline{x}$+(−u$\underline{z}$)) = $\underline{v}$)n)n)n⌉, p_0, c)]

[FromNot < f(Strong)(Helper) $\stackrel{\text{stmt}}{\rightarrow}$ SystemQ ⊢
∀$\underline{(v1)}$: ∀$\underline{(v2)}$: ∀$\underline{m}$: ∀$\underline{(n1)}$: ∀$\underline{(n2)}$: ∀$\underline{(\epsilon)}$: ∀$\underline{(fx)}$: ∀$\underline{(fy)}$: $\dot{\neg}$(0 <= (rec((1+1)+1)∗$\underline{(\epsilon)}$) ⇒

∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ∸((n1) <= (n2) ⇒
∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <= (fx)[(n2)] ⇒ ∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) = (fx)[(n2)])n)n)n)n)n ⇒ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(v2): ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⇒
∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n2) <= m ⇒
∸(((fy)[m] + (−u(fx)[m])) <= (ϵ) ⇒ ∸(∸(((fy)[m] + (−u(fx)[m])) = (ϵ))n)n)n]

[FromNot < f(Strong)(Helper) $\stackrel{\text{proof}}{\to}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢ ∀(v1): ∀(v2): ∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ∸((n1) <= (n2) ⇒
∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <= (fx)[(n2)] ⇒ ∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) = (fx)[(n2)])n)n)n)n)n ⊢ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(v2): ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⊢
∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⊢ (n2) <= m ⊢ 0 < 3 ≫ ∸(0 <= ((1 + 1) + 1) ⇒ ∸(∸(0 = ((1 + 1) + 1))n)n)n; PositiveInverted ⊳ ∸(0 <= ((1 + 1) + 1) ⇒ ∸(∸(0 = ((1 + 1) + 1))n)n)n ≫ ∸(0 <= rec((1 + 1) + 1) ⇒ ∸(∸(0 = rec((1 + 1) + 1))n)n)n; PositiveFactors ⊳ ∸(0 <= rec((1 + 1) + 1) ⇒ ∸(∸(0 = rec((1 + 1) + 1))n)n)n ⊳ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ≫ ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n; MP ⊳ ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ∸((n1) <= (n2) ⇒ ∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <= (fx)[(n2)] ⇒
∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) = (fx)[(n2)])n)n)n)n)n ⊳ ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ≫ ∸((n1) <= (n2) ⇒ ∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <= (fx)[(n2)] ⇒
∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) =
(fx)[(n2)])n)n)n)n)n; FirstConjunct ⊳ ∸((n1) <= (n2) ⇒
∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <= (fx)[(n2)] ⇒
∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) = (fx)[(n2)])n)n)n)n)n ≫ (n1) <= (n2); SecondConjunct ⊳ ∸((n1) <= (n2) ⇒ ∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <= (fx)[(n2)] ⇒ ∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) = (fx)[(n2)])n)n)n)n)n ≫ ∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <= (fx)[(n2)] ⇒ ∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) = (fx)[(n2)])n)n)n; SwitchTerms(x − y < z) ⊳ ∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <= (fx)[(n2)] ⇒ ∸(∸(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) = (fx)[(n2)])n)n)n ≫ ∸(((fy)[(n2)] + (−u(fx)[(n2)])) <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(((fy)[(n2)] + (−u(fx)[(n2)])) = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n; leqTransitivity ⊳ (n1) <= (n2) ⊳ (n2) <= m ≫ (n1) <= m; A4 @ m ⊳ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(v2): ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒

$(n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n)n)n \gg$
$\forall_{obj}(v2){:}\ \dot{\neg}(0 <= (rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow$
$(n1) <= \mathsf{m} \Rightarrow (n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(v2)]))| <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(v2)]))| =$
$(rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(v2)]))| <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(v2)]))| =$
$(rec((1+1)+1)*(\epsilon)))n)n)n)n)n;$ A4 @ $(n2) \rhd \forall_{obj}(v2){:}\ \dot{\neg}(0 <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= \mathsf{m} \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(v2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(v2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(v2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(v2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n)n)n \gg \dot{\neg}(0 <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= \mathsf{m} \Rightarrow$
$(n1) <= (n2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] +$
$(-u(fy)[(n2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n)n)n;$ MP3 $\rhd \dot{\neg}(0 <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= \mathsf{m} \Rightarrow$
$(n1) <= (n2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n)n)n \rhd \dot{\neg}(0 <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \rhd (n1) <=$
$\mathsf{m} \rhd (n1) <= (n2) \gg \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| =$
$(rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| = (rec((1+1)+1)*$
$(\epsilon)))n)n)n)n)n;$ FirstConjunct $\rhd \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| =$
$(rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| =$
$(rec((1+1)+1)*(\epsilon)))n)n)n)n)n \gg \dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| = (rec((1+1)+1)*$
$(\epsilon)))n)n)n;$ SecondConjunct $\rhd \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| = (rec((1+1)+1)*$
$(\epsilon)))n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n)n)n \gg$
$\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n;$ FromNot $<$
$f(Strong)(Helper2) \rhd \dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\mathsf{m}] + (-u(fy)[(n2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n \rhd \dot{\neg}(|((fx)[\mathsf{m}] +$
$(-u(fx)[(n2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\mathsf{m}] + (-u(fx)[(n2)]))| =$
$(rec((1+1)+1)*(\epsilon)))n)n)n \rhd \dot{\neg}(((fy)[(n2)] + (-u(fx)[(n2)])) <= (rec((1+1)+$

$1)*\underline{(\epsilon)})\Rightarrow\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}]))=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}\gg$
$\dot\neg(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]))<=\underline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]))=$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n};\forall\underline{(\mathrm{v1})}:\forall\underline{(\mathrm{v2})}:\forall\underline{\mathsf{m}}:\forall\underline{(\mathrm{n1})}:\forall\underline{(\mathrm{n2})}:\forall\underline{(\epsilon)}:\forall\underline{(\mathrm{fx})}:\forall\underline{(\mathrm{fy})}:\mathrm{Ded}\rhd$
$\forall\underline{(\mathrm{v1})}:\forall\underline{(\mathrm{v2})}:\forall\underline{\mathsf{m}}:\forall\underline{(\mathrm{n1})}:\forall\underline{(\mathrm{n2})}:\forall\underline{(\epsilon)}:\forall\underline{(\mathrm{fx})}:\forall\underline{(\mathrm{fy})}:\dot\neg(0<=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})\Rightarrow$
$\dot\neg(\dot\neg(0=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{(\mathrm{n1})}<=\underline{(\mathrm{n2})}\Rightarrow$
$\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})))<=\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}]\Rightarrow\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]+$
$(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})))=\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\vdash\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}:\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}:\dot\neg(0<=$
$(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})\Rightarrow\dot\neg(\dot\neg(0=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\underline{(\mathrm{n1})}<=\underline{(\mathrm{v1})}\Rightarrow$
$\underline{(\mathrm{n1})}<=\underline{(\mathrm{v2})}\Rightarrow\dot\neg(\dot\neg(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))|<=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})\Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))|=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))|<=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})\Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))|=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\vdash\dot\neg(0<=$
$\underline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\vdash\underline{(\mathrm{n2})}<=\underline{\mathsf{m}}\vdash\dot\neg(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]))<=\underline{(\epsilon)}\Rightarrow$
$\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]))=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\gg\dot\neg(0<=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})\Rightarrow$
$\dot\neg(\dot\neg(0=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{(\mathrm{n1})}<=\underline{(\mathrm{n2})}\Rightarrow$
$\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})))<=\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}]\Rightarrow\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]+$
$(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})))=\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}:\forall_{\mathrm{obj}}\underline{(\mathrm{v2})}:\dot\neg(0<=$
$(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})\Rightarrow\dot\neg(\dot\neg(0=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\underline{(\mathrm{n1})}<=\underline{(\mathrm{v1})}\Rightarrow$
$\underline{(\mathrm{n1})}<=\underline{(\mathrm{v2})}\Rightarrow\dot\neg(\dot\neg(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))|<=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})\Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))|=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))|<=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})\Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))|=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(0<=$
$\underline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\underline{(\mathrm{n2})}<=\underline{\mathsf{m}}\Rightarrow\dot\neg(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]))<=$
$\underline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]))=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{FromNot}<\mathrm{f(Strong)}\stackrel{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash$
$\forall\underline{(\mathrm{v1})}:\forall\underline{(\mathrm{v2})}:\forall\underline{\mathsf{m}}:\forall\underline{(\mathrm{n2})}:\forall\underline{(\epsilon)}:\forall\underline{(\mathrm{fx})}:\forall\underline{(\mathrm{fy})}:\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}:\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}:\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}:\dot\neg(\dot\neg(0$
$\overline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]<=(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]+$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\vdash\dot\neg(0<=\underline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\underline{(\mathrm{n2})}<=\underline{\mathsf{m}}\Rightarrow$
$\dot\neg(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]))<=\underline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]))=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{FromNot}<\mathrm{f(Strong)}\stackrel{\mathrm{proof}}{\rightarrow}\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash$
$\forall\underline{(\mathrm{v1})}:\forall\underline{(\mathrm{v2})}:\forall\underline{\mathsf{m}}:\forall\underline{(\mathrm{n2})}:\forall\underline{(\epsilon)}:\forall\underline{(\mathrm{fx})}:\forall\underline{(\mathrm{fy})}:\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}:\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}:\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}:\dot\neg(\dot\neg(0$
$\overline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]<=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]+(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\vdash\mathrm{FromNot}<$
$\mathrm{f(Weak)}\rhd\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}:\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}:\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}:\dot\neg(\dot\neg(0<=\overline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]<=(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]+(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\gg$
$\forall_{\mathrm{obj}}\underline{(\epsilon)}:\forall_{\mathrm{obj}}\underline{\mathsf{n}}:\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{n2})}:\dot\neg(\dot\neg(0<=\underline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{\mathsf{n}}<=$
$\underline{(\mathrm{n2})}\Rightarrow\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]+(-\mathrm{u}\underline{(\epsilon)}))<=\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}]\Rightarrow$
$\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]+(-\mathrm{u}\underline{(\epsilon)}))=\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n};\mathrm{A4}\ @(\mathrm{rec}((1+1)+1)*$
$\underline{(\epsilon)})\rhd\forall_{\mathrm{obj}}\underline{(\epsilon)}:\forall_{\mathrm{obj}}\underline{\mathsf{n}}:\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{n2})}:\dot\neg(\dot\neg(0<=\underline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot\neg(\underline{\mathsf{n}}<=\underline{(\mathrm{n2})}\Rightarrow\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]+(-\mathrm{u}\underline{(\epsilon)}))<=\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}]\Rightarrow\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]+$
$(-\mathrm{u}\underline{(\epsilon)}))=\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\gg\forall_{\mathrm{obj}}\underline{\mathsf{n}}:\dot\neg(\forall_{\mathrm{obj}}\underline{(\mathrm{n2})}:\dot\neg(\dot\neg(0<=$
$(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})\Rightarrow\dot\neg(\dot\neg(0=(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\underline{\mathsf{n}}<=$
$\underline{(\mathrm{n2})}\Rightarrow\dot\neg(\dot\neg(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)})))<=\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}]\Rightarrow$

¬̇(¬̇(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) =
(fx)[(n2)])n)n)n)n)n)n)n; A4 @ (n1) ▷ ∀obj n: ¬̇(∀obj(n2): ¬̇(¬̇(0 <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇(n <=
(n2) ⇒ ¬̇(¬̇(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <= (fx)[(n2)] ⇒
¬̇(¬̇(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) = (fx)[(n2)])n)n)n)n)n)n ≫
¬̇(∀obj(n2): ¬̇(¬̇(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇((n1) <= (n2) ⇒
¬̇(¬̇(((fy)[(n2)]+(−u(rec((1+1)+1)∗(ϵ)))) <= (fx)[(n2)] ⇒ ¬̇(¬̇(((fy)[(n2)]+
(−u(rec((1 + 1) + 1) ∗ (ϵ)))) = (fx)[(n2)])n)n)n)n)n)n)n; Cauchy(2) ≫
∀obj(ϵ): ¬̇(∀obj(n1): ¬̇(∀obj(v1): ∀obj(v2): ¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ⇒
(n1) <= (v1) ⇒ (n1) <= (v2) ⇒ ¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒
¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (ϵ))n)n)n ⇒ ¬̇(¬̇(|((fy)[(v1)] +
(−u(fy)[(v2)]))| <= (ϵ) ⇒ ¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(ϵ))n)n)n)n)n)n)n; A4 @(rec((1 + 1) + 1) ∗ (ϵ)) ▷
∀obj(ϵ): ¬̇(∀obj(n1): ¬̇(∀obj(v1): ∀obj(v2): ¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ⇒
(n1) <= (v1) ⇒ (n1) <= (v2) ⇒ ¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒
¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (ϵ))n)n)n ⇒ ¬̇(¬̇(|((fy)[(v1)] +
(−u(fy)[(v2)]))| <= (ϵ) ⇒ ¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(ϵ))n)n)n)n)n)n)n ≫ ¬̇(∀obj(n1): ¬̇(∀obj(v1): ∀obj(v2): ¬̇(0 <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <=
(v1) ⇒ (n1) <= (v2) ⇒ ¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n)n)n; FromNot < f(Strong)(Helper) ≫
¬̇(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
¬̇((n1) <= (n2) ⇒ ¬̇(¬̇(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <=
(fx)[(n2)] ⇒ ¬̇(¬̇(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) =
(fx)[(n2)])n)n)n)n)n ⇒ ∀obj(v1): ∀obj(v2): ¬̇(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
¬̇(¬̇(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒
¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
¬̇(¬̇(|((fy)[(v1)]+(−u(fy)[(v2)]))| = (rec((1+1)+1)∗(ϵ)))n)n)n)n)n ⇒ ¬̇(0 <=
(ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ⇒ (n2) <= m ⇒ ¬̇(((fy)[m] + (−u(fx)[m])) <=
(ϵ) ⇒ ¬̇(¬̇(((fy)[m] + (−u(fx)[m])) = (ϵ))n)n)n; ExistMP2 ▷ ¬̇(0 <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇((n1) <=
(n2) ⇒ ¬̇(¬̇(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) <= (fx)[(n2)] ⇒
¬̇(¬̇(((fy)[(n2)] + (−u(rec((1 + 1) + 1) ∗ (ϵ)))) = (fx)[(n2)])n)n)n)n)n ⇒
∀obj(v1): ∀obj(v2): ¬̇(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒
¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
¬̇(¬̇(|((fy)[(v1)]+(−u(fy)[(v2)]))| = (rec((1+1)+1)∗(ϵ)))n)n)n)n)n ⇒ ¬̇(0 <=
(ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ⇒ (n2) <= m ⇒ ¬̇(((fy)[m] + (−u(fx)[m])) <=

$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{n2})}\colon \dot{\neg}(\dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1) * \underline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{n1})} <=$
$\underline{(\mathrm{n2})} \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{(\epsilon)}))) <= \underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] \Rightarrow$
$\dot{\neg}(\dot{\neg}(((\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{(\epsilon)}))) =$
$\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}])\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{n1})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1) * \underline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n1})} <= \underline{(\mathrm{v1})} \Rightarrow$
$\underline{(\mathrm{n1})} <= \underline{(\mathrm{v2})} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))| <= (\mathrm{rec}((1+1)+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))| = (\mathrm{rec}((1+1)+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))| <= (\mathrm{rec}((1+1)+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))| = (\mathrm{rec}((1+1)+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] +$
$(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{fromNotSameF(Strongest)(Helper2)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \forall\underline{\mathsf{u}}\colon \forall\underline{\mathsf{v}}\colon \dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))| <=$
$(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\underline{\mathsf{v}} <= |(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| \vdash \dot{\neg}((\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))| \Rightarrow$
$\dot{\neg}(\dot{\neg}((\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) = |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))|)\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{fromNotSameF(Strongest)(Helper2)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \forall\underline{\mathsf{u}}\colon \forall\underline{\mathsf{v}}\colon \dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))| <=$
$(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\underline{\mathsf{v}} <= |(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| \vdash \mathrm{NumericalDifference} \gg |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| =$
$|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|; \mathrm{SubLessLeft} \rhd |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = |(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| \rhd \dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| <=$
$(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| = (\mathrm{rec}((1+1)+$
$1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessNegated} \rhd \dot{\neg}(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{\mathsf{y}}+(-\mathrm{u}\underline{\mathsf{x}}))| = (\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}})) <=$
$(-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}})) =$
$(-\mathrm{u}|(\underline{\mathsf{y}}+(-\mathrm{u}\underline{\mathsf{x}}))|))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessNegated} \rhd \dot{\neg}(|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))| <= (\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))| = (\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}})) <=$
$(-\mathrm{u}|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}})) =$
$(-\mathrm{u}|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{AddEquations(LeqLess)} \rhd \underline{\mathsf{v}} <=$
$|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| \rhd \dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}})) <= (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|) \Rightarrow$
$\dot{\neg}(\dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}})) = (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|))\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) <= (|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|)) \Rightarrow$
$\dot{\neg}(\dot{\neg}((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) = (|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} +$
$(-\mathrm{u}\underline{\mathsf{x}}))|)))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{AddEquations(Less)} \rhd \dot{\neg}((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) <=$
$(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|)) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) =$
$(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|)))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}})) <=$
$(-\mathrm{u}|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}})) = (-\mathrm{u}|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|))\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) <=$
$(((|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|)) + (-\mathrm{u}|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) =$
$(((|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|)) + (-\mathrm{u}|(\underline{\mathsf{z}} +$

$(-u\underline{u}))|))))n)n)n; \mathrm{insertTwoMiddleTerms(Numerical)} \gg |(\underline{y} + (-u\underline{u}))| <=$
$(((|(\underline{y} + (-u\underline{x}))| + |(\underline{x} + (-u\underline{z}))|) + |(\underline{z} + (-u\underline{u}))|); \mathrm{plusAssociativity} \gg$
$(((|(\underline{y} + (-u\underline{x}))| + |(\underline{x} + (-u\underline{z}))|) + |(\underline{z} + (-u\underline{u}))|) =$
$(|(\underline{y} + (-u\underline{x}))| + (|(\underline{x} + (-u\underline{z}))| + |(\underline{z} + (-u\underline{u}))|)); \mathrm{plusCommutativity} \gg$
$(|(\underline{y}+(-u\underline{x}))|+(|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+(-u\underline{u}))|)) = (((|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+(-u\underline{u}))|)+$
$|(\underline{y} + (-u\underline{x}))|); \mathrm{eqTransitivity} \rhd (((|(\underline{y} + (-u\underline{x}))| + |(\underline{x} + (-u\underline{z}))|) + |(\underline{z} + (-u\underline{u}))|) =$
$(|(\underline{y} + (-u\underline{x}))| + (|(\underline{x} + (-u\underline{z}))| + |(\underline{z} + (-u\underline{u}))|)) \rhd (|(\underline{y} + (-u\underline{x}))| + (|(\underline{x} +$
$(-u\underline{z}))| + |(\underline{z} + (-u\underline{u}))|)) = (((|(\underline{x} + (-u\underline{z}))| + |(\underline{z} + (-u\underline{u}))|) + |(\underline{y} + (-u\underline{x}))|) \gg$
$(((|(\underline{y}+(-u\underline{x}))|+|(\underline{x}+(-u\underline{z}))|)+|(\underline{z}+(-u\underline{u}))|) = (((|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+(-u\underline{u}))|)+$
$|(\underline{y} + (-u\underline{x}))|); \mathrm{subLeqRight} \rhd (((|(\underline{y} + (-u\underline{x}))| + |(\underline{x} + (-u\underline{z}))|) + |(\underline{z} + (-u\underline{u}))|) =$
$(((|(\underline{x} + (-u\underline{z}))| + |(\underline{z} + (-u\underline{u}))|) + |(\underline{y} + (-u\underline{x}))|) \rhd |(\underline{y} + (-u\underline{u}))| <=$
$(((|(\underline{y} + (-u\underline{x}))| + |(\underline{x} + (-u\underline{z}))|) + |(\underline{z} + (-u\underline{u}))|) \gg |(\underline{y} + (-u\underline{u}))| <=$
$(((|(\underline{x} + (-u\underline{z}))| + |(\underline{z} + (-u\underline{u}))|) + |(\underline{y} + (-u\underline{x}))|); \mathrm{PositiveToLeft(Leq)} \rhd |(\underline{y} +$
$(-u\underline{u}))| <= (((|(\underline{x} + (-u\underline{z}))| + |(\underline{z} + (-u\underline{u}))|) + |(\underline{y} + (-u\underline{x}))|) \gg (|(\underline{y} + (-u\underline{u}))| +$
$(-u|(\underline{y} + (-u\underline{x}))|)) <= (|(\underline{x} + (-u\underline{z}))| + |(\underline{z} + (-u\underline{u}))|); \mathrm{PositiveToLeft(Leq)} \rhd$
$(|(\underline{y} + (-u\underline{u}))| + (-u|(\underline{y} + (-u\underline{x}))|)) <= (|(\underline{x} + (-u\underline{z}))| + |(\underline{z} + (-u\underline{u}))|) \gg$
$(((|(\underline{y} + (-u\underline{u}))| + (-u|(\underline{y} + (-u\underline{x}))|)) + (-u|(\underline{z} + (-u\underline{u}))|)) <= |(\underline{x} +$
$(-u\underline{z}))|; \mathrm{LessLeqTransitivity} \rhd \dot{\neg}(((\underline{v} + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) + (-u(\mathrm{rec}((1 +$
$1) + 1) * \underline{v}))) <= (((|(\underline{y} + (-u\underline{u}))| + (-u|(\underline{y} + (-u\underline{x}))|)) + (-u|(\underline{z} + (-u\underline{u}))|)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(((\underline{v} + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) =$
$(((|(\underline{y} + (-u\underline{u}))| + (-u|(\underline{y} + (-u\underline{x}))|)) + (-u|(\underline{z} + (-u\underline{u}))|)))n)n)n \rhd (((|(\underline{y} +$
$(-u\underline{u}))| + (-u|(\underline{y} + (-u\underline{x}))|)) + (-u|(\underline{z} + (-u\underline{u}))|)) <= |(\underline{x} + (-u\underline{z}))| \gg$
$\dot{\neg}(((\underline{v}+(-u(\mathrm{rec}((1+1)+1)*\underline{v})))+(-u(\mathrm{rec}((1+1)+1)*\underline{v}))) <= |(\underline{x}+(-u\underline{z}))| \Rightarrow$
$\dot{\neg}(\dot{\neg}(((\underline{v} + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) =$
$|(\underline{x} + (-u\underline{z}))|)n)n)n; \mathrm{ThreeThirds} \gg$
$(((\mathrm{rec}((1 + 1) + 1) * \underline{v}) + (\mathrm{rec}((1 + 1) + 1) * \underline{v})) + (\mathrm{rec}((1 + 1) + 1) * \underline{v})) =$
$\underline{v}; \mathrm{PositiveToRight(Eq)} \rhd (((\mathrm{rec}((1+1)+1)*\underline{v})+(\mathrm{rec}((1+1)+1)*\underline{v}))+(\mathrm{rec}((1+$
$1)+1)*\underline{v})) = \underline{v} \gg ((\mathrm{rec}((1+1)+1)*\underline{v})+(\mathrm{rec}((1+1)+1)*\underline{v})) = (\underline{v}+(-u(\mathrm{rec}((1+$
$1)+1)*\underline{v}))); \mathrm{PositiveToRight(Eq)} \rhd ((\mathrm{rec}((1+1)+1)*\underline{v})+(\mathrm{rec}((1+1)+1)*\underline{v})) =$
$(\underline{v} + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) \gg (\mathrm{rec}((1 + 1) + 1) * \underline{v}) = ((\underline{v} + (-u(\mathrm{rec}((1 +$
$1) + 1) * \underline{v}))) + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))); \mathrm{eqSymmetry} \rhd (\mathrm{rec}((1 + 1) + 1) * \underline{v}) =$
$((\underline{v} + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) \gg$
$((\underline{v} + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) = (\mathrm{rec}((1 + 1) + 1) *$
$\underline{v}); \mathrm{SubLessLeft} \rhd ((\underline{v} + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) =$
$(\mathrm{rec}((1 + 1) + 1) * \underline{v}) \rhd \dot{\neg}(((\underline{v} + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) + (-u(\mathrm{rec}((1 + 1) +$
$1) * \underline{v}))) <= |(\underline{x} + (-u\underline{z}))| \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{v} + (-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) +$
$(-u(\mathrm{rec}((1 + 1) + 1) * \underline{v}))) = |(\underline{x} + (-u\underline{z}))|)n)n)n \gg \dot{\neg}((\mathrm{rec}((1 + 1) + 1) * \underline{v}) <=$
$|(\underline{x} + (-u\underline{z}))| \Rightarrow \dot{\neg}(\dot{\neg}((\mathrm{rec}((1 + 1) + 1) * \underline{v}) = |(\underline{x} + (-u\underline{z}))|)n)n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{fromNotSameF(Strongest)(Helper)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{(v1)}{:}\forall\underline{(v2)}{:}\forall\underline{m}{:}\forall\underline{(n1)}{:}\forall\underline{(n2)}{:}\forall\underline{(\epsilon)}{:}\forall\underline{(fx)}{:}\forall\underline{(fy)}{:} \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \underline{(n1)} <= \underline{(n2)} \Rightarrow \dot{\neg}(|(\underline{(fx)}[\underline{(n2)}] + (-u\underline{(fy)}[\underline{(n2)}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\underline{(n2)}] + (-u\underline{(fy)}[\underline{(n2)}]))| = \underline{(\epsilon)})n)n)n)n \Rightarrow \forall_{\mathrm{obj}}\underline{(v1)}{:}\forall_{\mathrm{obj}}\underline{(v2)}{:} \dot{\neg}(0 <=$
$(\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}))n)n)n \Rightarrow \underline{(n1)} <= \underline{(v1)} \Rightarrow$
$\underline{(n1)} <= \underline{(v2)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\underline{(v1)}]+(-u\underline{(fx)}[\underline{(v2)}]))| <= (\mathrm{rec}((1+1)+1)*\underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\underline{(v1)}] + (-u\underline{(fx)}[\underline{(v2)}]))| = (\mathrm{rec}((1 + 1) + 1) * \underline{(\epsilon)}))n)n)n \Rightarrow$

∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⇒
∸(∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
∸((n2) <= m ⇒ ∸((rec((1 + 1) + 1) ∗ (ϵ)) <= |((fx)[m] + (−u(fy)[m]))| ⇒
∸(∸((rec((1 + 1) + 1) ∗ (ϵ)) = |((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n]

[fromNotSameF(Strongest)(Helper) $\stackrel{\text{proof}}{\rightarrow}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(v1): ∀(v2): ∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n1) <= (n2) ⇒ ∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⊢ ∀obj(v1): ∀obj(v2): ∸(0 <= (rec((1+1)+1)∗(ϵ)) ⇒ ∸(∸(0 = (rec((1+1)+1)∗(ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec((1+1)+1)∗(ϵ)) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⊢ (n2) <= m ⊢ FromNegated(2 ∗ Imply) ⊳ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n1) <= (n2) ⇒ ∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ≫ ∸(∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= (n2))n)n ⇒ ∸(∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n)n)n; FirstConjunct ⊳ ∸(∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= (n2))n)n ⇒ ∸(∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n)n)n ≫ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= (n2))n)n; FirstConjunct ⊳ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= (n2))n)n ≫ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n; SecondConjunct ⊳ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= (n2))n)n ≫ (n1) <= (n2); SecondConjunct ⊳ ∸(∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= (n2))n)n ⇒ ∸(∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n)n)n ≫ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n; fromNotLess ⊳ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ≫ (ϵ) <= |((fx)[(n2)] + (−u(fy)[(n2)]))|; A4 @ m ⊳ ∀obj(v1): ∀obj(v2): ∸(0 <= (rec((1+1)+1)∗(ϵ)) ⇒ ∸(∸(0 = (rec((1+1)+1)∗(ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec((1+1)+1)∗(ϵ)) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ≫ ∀obj(v2): ∸(0 <= (rec((1+1)+1)∗(ϵ)) ⇒ ∸(∸(0 = (rec((1+1)+1)∗(ϵ)))n)n)n ⇒ (n1) <= m ⇒ (n1) <= (v2) ⇒ ∸(∸(|((fx)[m] + (−u(fx)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fx)[m] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ∸(∸(|((fy)[m] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fy)[m] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n; A4 @ (n2) ⊳ ∀obj(v2): ∸(0 <= (rec((1+1)+1)∗(ϵ)) ⇒ ∸(∸(0 = (rec((1+1)+1)∗(ϵ)))n)n)n ⇒ (n1) <= m ⇒

(n1) <= (v2) ⇒ ∸(∸(|((fx)[m] + (−u(fx)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fx)[m] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[m] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[m] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ≫ ∸(0 <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= m ⇒
(n1) <= (n2) ⇒ ∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fy)[m] +
(−u(fy)[(n2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n; 0 < 1/3 ≫ ∸(0 <=
rec((1 + 1) + 1) ⇒ ∸(∸(0 = rec((1 + 1) + 1))n)n)n; PositiveFactors ⊳ ∸(0 <=
rec((1 + 1) + 1) ⇒ ∸(∸(0 = rec((1 + 1) + 1))n)n)n ⊳ ∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ≫ ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n; leqTransitivity ⊳ (n1) <= (n2) ⊳ (n2) <= m ≫
(n1) <= m; MP3 ⊳ ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= m ⇒ (n1) <= (n2) ⇒
∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⊳ ∸(0 <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⊳ (n1) <=
m ⊳ (n1) <= (n2) ≫ ∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| = (rec((1 + 1) + 1) ∗
(ϵ)))n)n)n)n)n; FirstConjunct ⊳ ∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ≫ ∸(|((fx)[m] + (−u(fx)[(n2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| = (rec((1 + 1) + 1) ∗
(ϵ)))n)n)n; SecondConjunct ⊳ ∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ≫ ∸(|((fy)[m] + (−u(fy)[(n2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n; fromNotSameF(Strongest)(Helper2) ⊳ ∸(|((fx)[m] +
(−u(fx)[(n2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fx)[m] + (−u(fx)[(n2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⊳ ∸(|((fy)[m] + (−u(fy)[(n2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fy)[m] + (−u(fy)[(n2)]))| = (rec((1 + 1) + 1) ∗
(ϵ)))n)n)n ⊳ (ϵ) <= |((fx)[(n2)] + (−u(fy)[(n2)]))| ≫ ∸((rec((1 + 1) + 1) ∗ (ϵ)) <=
|((fx)[m] + (−u(fy)[m]))| ⇒ ∸(∸((rec((1 + 1) + 1) ∗ (ϵ)) = |((fx)[m] +
(−u(fy)[m]))|)n)n)n; ∀(v1): ∀(v2): ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ∸(∸(0 <=
(ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n1) <= (n2) ⇒
∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| =
(ϵ))n)n)n)n ⊢ $\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 =

(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒
¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⊢
FromNegatedImply ▷ ¬̇(¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ⇒ (n1) <= (n2) ⇒
¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| =
(ϵ))n)n)n)n ≫ ¬̇(¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ⇒ ¬̇(¬̇((n1) <= (n2) ⇒
¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| =
(ϵ))n)n)n)n)n)n; FirstConjunct ▷ ¬̇(¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ⇒
¬̇(¬̇((n1) <= (n2) ⇒ ¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒
¬̇(¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n)n)n ≫ ¬̇(0 <= (ϵ) ⇒
¬̇(¬̇(0 = (ϵ))n)n)n; 0 < 1/3 ≫ ¬̇(0 <= rec((1 + 1) + 1) ⇒ ¬̇(¬̇(0 =
rec((1 + 1) + 1))n)n)n; PositiveFactors ▷ ¬̇(0 <= rec((1 + 1) + 1) ⇒ ¬̇(¬̇(0 =
rec((1 + 1) + 1))n)n)n ▷ ¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ≫ ¬̇(0 <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec((1 + 1) + 1) ∗
(ϵ)))n)n)n; ∀(v1): ∀(v2): ∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): Ded ▷
∀(v1): ∀(v2): ∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ¬̇(¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 =
(ϵ))n)n)n ⇒ (n1) <= (n2) ⇒ ¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒
¬̇(¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⊢ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(v2): ¬̇(0 <=
(rec((1+1)+1)∗(ϵ)) ⇒ ¬̇(¬̇(0 = (rec((1+1)+1)∗(ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒
(n1) <= (v2) ⇒ ¬̇(¬̇(|((fx)[(v1)]+(−u(fx)[(v2)]))| <= (rec((1+1)+1)∗(ϵ)) ⇒
¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
¬̇(¬̇(|((fy)[(v1)]+(−u(fy)[(v2)]))| = (rec((1+1)+1)∗(ϵ)))n)n)n)n)n ⊢ (n2) <=
m ⊢ ¬̇((rec((1 + 1) + 1) ∗ (ϵ)) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ¬̇(¬̇((rec((1 +
1) + 1) ∗ (ϵ)) = |((fx)[m] + (−u(fy)[m]))|)n)n)n ≫ ¬̇(¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 =
(ϵ))n)n)n ⇒ (n1) <= (n2) ⇒ ¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒
¬̇(¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⇒ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(v2): ¬̇(0 <=
(rec((1+1)+1)∗(ϵ)) ⇒ ¬̇(¬̇(0 = (rec((1+1)+1)∗(ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒
(n1) <= (v2) ⇒ ¬̇(¬̇(|((fx)[(v1)]+(−u(fx)[(v2)]))| <= (rec((1+1)+1)∗(ϵ)) ⇒
¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⇒
(n2) <= m ⇒ ¬̇((rec((1 + 1) + 1) ∗ (ϵ)) <= |((fx)[m] + (−u(fy)[m]))| ⇒
¬̇(¬̇((rec((1 + 1) + 1) ∗ (ϵ)) = |((fx)[m] + (−u(fy)[m]))|)n)n)n; Ded ▷
∀(v1): ∀(v2): ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ¬̇(¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 =
(ϵ))n)n)n ⇒ (n1) <= (n2) ⇒ ¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒
¬̇(¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⊢ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(v2): ¬̇(0 <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <=
(v1) ⇒ (n1) <= (v2) ⇒ ¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fx)[(v1)] + (−u(fx)[(v2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⊢ ¬̇(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ≫ ¬̇(¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ⇒

(n1) <= (n2) ⇒ ∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒
∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⇒ ∀$_{\text{obj}}$(v1): ∀$_{\text{obj}}$(v2): ∸(0 <=
(rec((1+1)+1)∗(ϵ)) ⇒ ∸(∸(0 = (rec((1+1)+1)∗(ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒
(n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)]+(−u(fx)[(v2)]))| <= (rec((1+1)+1)∗(ϵ)) ⇒
∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⇒
∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗
(ϵ)))n)n)n; JoinConjuncts(2conditions) ⊳ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ⇒ (n1) <= (n2) ⇒ ∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒
∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⇒ ∀$_{\text{obj}}$(v1): ∀$_{\text{obj}}$(v2): ∸(0 <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <=
(v1) ⇒ (n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⇒ ∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⊳ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ⇒ (n1) <= (n2) ⇒ ∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒
∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⇒ ∀$_{\text{obj}}$(v1): ∀$_{\text{obj}}$(v2): ∸(0 <=
(rec((1+1)+1)∗(ϵ)) ⇒ ∸(∸(0 = (rec((1+1)+1)∗(ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒
(n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)]+(−u(fx)[(v2)]))| <= (rec((1+1)+1)∗(ϵ)) ⇒
∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)]+(−u(fy)[(v2)]))| = (rec((1+1)+1)∗(ϵ)))n)n)n)n)n ⇒ (n2) <=
m ⇒ ∸((rec((1 + 1) + 1) ∗ (ϵ)) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ∸(∸((rec((1 +
1) + 1) ∗ (ϵ)) = |((fx)[m] + (−u(fy)[m]))|)n)n)n ≫ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ⇒ (n1) <= (n2) ⇒ ∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒
∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⇒ ∀$_{\text{obj}}$(v1): ∀$_{\text{obj}}$(v2): ∸(0 <=
(rec((1+1)+1)∗(ϵ)) ⇒ ∸(∸(0 = (rec((1+1)+1)∗(ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒
(n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)]+(−u(fx)[(v2)]))| <= (rec((1+1)+1)∗(ϵ)) ⇒
∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n)n)n ⇒
∸(∸(0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒
∸((n2) <= m ⇒ ∸((rec((1 + 1) + 1) ∗ (ϵ)) <= |((fx)[m] + (−u(fy)[m]))| ⇒
∸(∸((rec((1 + 1) + 1) ∗ (ϵ)) = |((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n⌉, p_0, c)]

[fromNotSameF(Strongest) $\overset{\text{stmt}}{\rightarrow}$ SystemQ ⊢
∀(v1): ∀(v2): ∀m: ∀n: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ∸(∀$_{\text{obj}}$(ϵ): ∸(∀$_{\text{obj}}$n: ∸(∀$_{\text{obj}}$m: ∸(
(ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ n <= m ⇒ ∸(|((fx)[m] + (−u(fy)[m]))| <= (ϵ) ⇒
∸(∸(|((fx)[m] + (−u(fy)[m]))| = (ϵ))n)n)n)n)n)n ⊢
∸(∀$_{\text{obj}}$(ϵ): ∸(∸(∀$_{\text{obj}}$(n1): ∸(∀$_{\text{obj}}$m: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒
∸((n1) <= m ⇒ ∸((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ∸(∸((ϵ) =
|((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n)n)n)n)n⌉

[fromNotSameF(Strongest) $\stackrel{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\ulcorner$SystemQ $\vdash$
$\forall\underline{(\text{v1})}\colon\forall\underline{(\text{v2})}\colon\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(\text{n1})}\colon\forall\underline{(\text{n2})}\colon\forall\underline{(\epsilon)}\colon\forall\underline{(\text{fx})}\colon\forall\underline{(\text{fy})}\colon \dot{\neg}(\forall_{\text{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{m}}\colon \dot{\neg}($
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\text{fx})}[\overline{\mathsf{m}}] + (-\text{u}\underline{(\text{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\text{fx})}[\overline{\mathsf{m}}] + (-\text{u}\underline{(\text{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n} \vdash$
Repetition $\rhd$ $\dot{\neg}(\forall_{\text{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\text{fx})}[\overline{\mathsf{m}}] + (-\text{u}\underline{(\text{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\text{fx})}[\overline{\mathsf{m}}] + (-\text{u}\underline{(\text{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n} \gg$
$\dot{\neg}(\forall_{\text{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|(\underline{(\text{fx})}[\overline{\mathsf{m}}] + (-\text{u}\underline{(\text{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\text{fx})}[\overline{\mathsf{m}}] + (-\text{u}\underline{(\text{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}$; Ded $\rhd$ $\dot{\neg}(\forall_{\text{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\text{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\text{fx})}[\overline{\mathsf{m}}] + (-\text{u}\underline{(\text{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\text{fx})}[\overline{\mathsf{m}}] +$
$(-\text{u}\underline{(\text{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n} \gg \dot{\neg}(\forall_{\text{obj}}\underline{(\epsilon)}\colon \dot{\neg}(\forall_{\text{obj}}\underline{(\text{n1})}\colon \dot{\neg}(\forall_{\text{obj}}\underline{(\text{n2})}\colon \dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow \underline{(\text{n1})} <= \underline{(\text{n2})} \Rightarrow$
$\dot{\neg}(|((\text{fx})[(\text{n2})] + (-\text{u}(\text{fy})[(\text{n2})]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{n2})] + (-\text{u}(\text{fy})[(\text{n2})]))| =$
$(\epsilon))\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}$; AEA $-$ negated $\rhd$ $\dot{\neg}(\forall_{\text{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\text{obj}}\underline{(\text{n1})}\colon \dot{\neg}(\forall_{\text{obj}}\underline{(\text{n2})}\colon \dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow \underline{(\text{n1})} <= \underline{(\text{n2})} \Rightarrow$
$\dot{\neg}(|((\text{fx})[(\text{n2})] + (-\text{u}(\text{fy})[(\text{n2})]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{n2})] + (-\text{u}(\text{fy})[(\text{n2})]))| =$
$(\epsilon))\text{n})\text{n})\text{n})\text{n})\text{n})\text{n} \gg \dot{\neg}(\forall_{\text{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\text{obj}}\underline{(\text{n1})}\colon \dot{\neg}(\forall_{\text{obj}}\underline{(\text{n2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))\text{n})\text{n})\text{n} \Rightarrow \underline{(\text{n1})} <= \underline{(\text{n2})} \Rightarrow \dot{\neg}(|((\text{fx})[(\text{n2})] + (-\text{u}(\text{fy})[(\text{n2})]))| <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{n2})] + (-\text{u}(\text{fy})[(\text{n2})]))| = (\epsilon))\text{n})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}$; Cauchy(2) $\gg$
$\forall_{\text{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\text{obj}}\underline{(\text{n1})}\colon \dot{\neg}(\forall_{\text{obj}}(\text{v1})\colon \forall_{\text{obj}}(\text{v2})\colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\text{n})\text{n})\text{n} \Rightarrow$
$\underline{(\text{n1})} <= (\text{v1}) \Rightarrow \underline{(\text{n1})} <= (\text{v2}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{v1})] + (-\text{u}(\text{fx})[(\text{v2})]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{v1})] + (-\text{u}(\text{fx})[(\text{v2})]))| = (\epsilon))\text{n})\text{n})\text{n} \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fy})[(\text{v1})] +$
$(-\text{u}(\text{fy})[(\text{v2})]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fy})[(\text{v1})] + (-\text{u}(\text{fy})[(\text{v2})]))| =$
$(\epsilon))\text{n})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}$; A4 @(rec((1 + 1) + 1) $*$ (ϵ)) $\rhd$
$\forall_{\text{obj}}(\epsilon)\colon \dot{\neg}(\forall_{\text{obj}}\underline{(\text{n1})}\colon \dot{\neg}(\forall_{\text{obj}}(\text{v1})\colon \forall_{\text{obj}}(\text{v2})\colon \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\text{n})\text{n})\text{n} \Rightarrow$
$\underline{(\text{n1})} <= (\text{v1}) \Rightarrow \underline{(\text{n1})} <= (\text{v2}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{v1})] + (-\text{u}(\text{fx})[(\text{v2})]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{v1})] + (-\text{u}(\text{fx})[(\text{v2})]))| = (\epsilon))\text{n})\text{n})\text{n} \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fy})[(\text{v1})] +$
$(-\text{u}(\text{fy})[(\text{v2})]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fy})[(\text{v1})] + (-\text{u}(\text{fy})[(\text{v2})]))| =$
$(\epsilon))\text{n})\text{n})\text{n})\text{n})\text{n})\text{n} \gg \dot{\neg}(\forall_{\text{obj}}(\text{n1})\colon \dot{\neg}(\forall_{\text{obj}}(\text{v1})\colon \forall_{\text{obj}}(\text{v2})\colon \dot{\neg}(0 <=$
$(\text{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\text{rec}((1 + 1) + 1) * (\epsilon)))\text{n})\text{n})\text{n} \Rightarrow \underline{(\text{n1})} <=$
$\underline{(\text{v1})} \Rightarrow \underline{(\text{n1})} <= \underline{(\text{v2})} \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{v1})] + (-\text{u}(\text{fx})[(\text{v2})]))| <=$
$(\text{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{v1})] + (-\text{u}(\text{fx})[(\text{v2})]))| =$
$(\text{rec}((1 + 1) + 1) * (\epsilon)))\text{n})\text{n})\text{n} \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fy})[(\text{v1})] + (-\text{u}(\text{fy})[(\text{v2})]))| <=$
$(\text{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fy})[(\text{v1})] + (-\text{u}(\text{fy})[(\text{v2})]))| =$
$(\text{rec}((1 + 1) + 1) * (\epsilon)))\text{n})\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}$; fromNotSameF(Strongest)(Helper) $\gg$
$\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\text{n})\text{n})\text{n} \Rightarrow \underline{(\text{n1})} <= \underline{(\text{n2})} \Rightarrow$
$\dot{\neg}(|((\text{fx})[(\text{n2})] + (-\text{u}(\text{fy})[(\text{n2})]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{n2})] + (-\text{u}(\text{fy})[(\text{n2})]))| =$
$\underline{(\epsilon)})\text{n})\text{n})\text{n})\text{n} \Rightarrow \forall_{\text{obj}}(\text{v1})\colon \forall_{\text{obj}}(\text{v2})\colon \dot{\neg}(0 <= (\text{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\text{rec}((1 + 1) + 1) * (\epsilon)))\text{n})\text{n})\text{n} \Rightarrow \underline{(\text{n1})} <= \underline{(\text{v1})} \Rightarrow \underline{(\text{n1})} <= \underline{(\text{v2})} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{v1})] + (-\text{u}(\text{fx})[(\text{v2})]))| <= (\text{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\text{fx})[(\text{v1})] + (-\text{u}(\text{fx})[(\text{v2})]))| = (\text{rec}((1 + 1) + 1) * (\epsilon)))\text{n})\text{n})\text{n} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\text{fy})[(\text{v1})] + (-\text{u}(\text{fy})[(\text{v2})]))| <= (\text{rec}((1 + 1) + 1) * \underline{(\epsilon)}) \Rightarrow$

$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n)n)n \Rightarrow$
$\dot\neg(\dot\neg(0 <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((rec((1 + 1) + 1) * (\epsilon)) <= |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow$
$\dot\neg(\dot\neg((rec((1 + 1) + 1) * (\epsilon)) =$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n; \mathrm{EAE-MP} \rhd \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (n2) \Rightarrow \dot\neg(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \Rightarrow \forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n)n)n \Rightarrow$
$\dot\neg(\dot\neg(0 <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((rec((1 + 1) + 1) * (\epsilon)) <= |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow$
$\dot\neg(\dot\neg((rec((1 + 1) + 1) * (\epsilon)) = |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n \rhd$
$\dot\neg(\forall_{obj}(\epsilon): \dot\neg(\forall_{obj}(n1): \dot\neg(\forall_{obj}(n2): \dot\neg(\dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow$
$(n1) <= (n2) \Rightarrow \dot\neg(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(n2)] +$
$(-u(fy)[(n2)]))| = (\epsilon))n)n)n)n)n)n)n)n)n \gg \forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <=$
$(rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow (n1) <=$
$(v1) \Rightarrow (n1) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <=$
$(rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <=$
$(rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(rec((1+1)+1)*(\epsilon)))n)n)n)n)n \Rightarrow \dot\neg(\dot\neg(0 <= (rec((1+1)+1)*(\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 =$
$(rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((rec((1 + 1) + 1) * (\epsilon)) <=$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow \dot\neg(\dot\neg((rec((1 + 1) + 1) * (\epsilon)) =$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n; \mathrm{ExistMP} \rhd \forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <=$
$(rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow (n1) <=$
$(v1) \Rightarrow (n1) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <=$
$(rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <=$
$(rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(rec((1+1)+1)*(\epsilon)))n)n)n)n)n \Rightarrow \dot\neg(\dot\neg(0 <= (rec((1+1)+1)*(\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 =$
$(rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((rec((1 + 1) + 1) * (\epsilon)) <=$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow \dot\neg(\dot\neg((rec((1 + 1) + 1) * (\epsilon)) =$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n \rhd \dot\neg(\forall_{obj}(n1): \dot\neg(\forall_{obj}(v1): \forall_{obj}(v2): \dot\neg(0 <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n)n)n)n)n \gg$
$\dot\neg(\dot\neg(0 <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((rec((1 + 1) + 1) * (\epsilon)) <= |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow$
$\dot\neg(\dot\neg((rec((1 + 1) + 1) * (\epsilon)) = |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n)n; \mathrm{Gen} \rhd$
$\dot\neg(\dot\neg(0 <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((rec((1 + 1) + 1) * (\epsilon)) <= |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow$

¬̇ (¬̇ ((rec((1 + 1) + 1) ∗ (ϵ)) = |((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n ≫
$\forall_{\mathrm{obj}}$m: ¬̇ (¬̇ (0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇ (¬̇ (0 =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇ ((n2) <= m ⇒ ¬̇ ((rec((1 + 1) + 1) ∗ (ϵ)) <=
|((fx)[m] + (−u(fy)[m]))| ⇒ ¬̇ (¬̇ ((rec((1 + 1) + 1) ∗ (ϵ)) =
|((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n; IntroExist @ (n2) ⊳ $\forall_{\mathrm{obj}}$m: ¬̇ (¬̇ (0 <=
(rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇ (¬̇ (0 = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇ ((n2) <=
m ⇒ ¬̇ ((rec((1 + 1) + 1) ∗ (ϵ)) <= |((fx)[m] + (−u(fy)[m]))| ⇒
¬̇ (¬̇ ((rec((1 + 1) + 1) ∗ (ϵ)) = |((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n ≫
¬̇ ($\forall_{\mathrm{obj}}$n: ¬̇ ($\forall_{\mathrm{obj}}$m: ¬̇ (¬̇ (0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇ (¬̇ (0 =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇ ((n1) <= m ⇒ ¬̇ ((rec((1 + 1) + 1) ∗ (ϵ)) <=
|((fx)[m] + (−u(fy)[m]))| ⇒ ¬̇ (¬̇ ((rec((1 + 1) + 1) ∗ (ϵ)) =
|((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n)n)n; IntroExist @(rec((1 + 1) + 1) ∗ (ϵ)) ⊳
¬̇ ($\forall_{\mathrm{obj}}$n: ¬̇ ($\forall_{\mathrm{obj}}$m: ¬̇ (¬̇ (0 <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇ (¬̇ (0 =
(rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇ ((n1) <= m ⇒ ¬̇ ((rec((1 + 1) + 1) ∗ (ϵ)) <=
|((fx)[m] + (−u(fy)[m]))| ⇒ ¬̇ (¬̇ ((rec((1 + 1) + 1) ∗ (ϵ)) =
|((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n)n)n ≫
¬̇ ($\forall_{\mathrm{obj}}$(ϵ): ¬̇ (¬̇ ($\forall_{\mathrm{obj}}$(n1): ¬̇ ($\forall_{\mathrm{obj}}$m: ¬̇ (¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒
¬̇ ((n1) <= m ⇒ ¬̇ ((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ¬̇ (¬̇ ((ϵ) =
|((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n)n)n)n)n⌉, p_0, c)]

[ToLess(F)(Helper) $\overset{\text{stmt}}{\to}$ SystemQ ⊢
∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): $\forall_{\mathrm{obj}}$m: ¬̇ (¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 =
(ϵ))n)n)n ⇒ ¬̇ ((n1) <= m ⇒ ¬̇ ((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ¬̇ (¬̇ ((ϵ) =
|((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n ⇒ ¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒
(n2) <= m ⇒ ¬̇ (((fy)[m] + (−u(fx)[m])) <= (ϵ) ⇒ ¬̇ (¬̇ (((fy)[m] +
(−u(fx)[m])) = (ϵ))n)n)n ⇒ ¬̇ (¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒
¬̇ (if((n2) <= (n1), (n1), (n2)) <= m ⇒ (fy)[m] <= ((fx)[m] + (−u(ϵ))))n)n]

[ToLess(F)(Helper) $\overset{\text{proof}}{\to}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢
∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): $\forall_{\mathrm{obj}}$m: ¬̇ (¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 =
(ϵ))n)n)n ⇒ ¬̇ ((n1) <= m ⇒ ¬̇ ((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ¬̇ (¬̇ ((ϵ) =
|((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n ⊢ ¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒
(n2) <= m ⇒ ¬̇ (((fy)[m] + (−u(fx)[m])) <= (ϵ) ⇒
¬̇ (¬̇ (((fy)[m] + (−u(fx)[m])) = (ϵ))n)n)n ⊢ if((n2) <= (n1), (n1), (n2)) <= m ⊢
MaxLeq(1) ≫ (n1) <= if((n2) <= (n1), (n1), (n2)); leqTransitivity ⊳ (n1) <=
if((n2) <= (n1), (n1), (n2)) ⊳ if((n2) <= (n1), (n1), (n2)) <= m ≫ (n1) <=
m; MaxLeq(2) ≫ (n2) <= if((n2) <= (n1), (n1), (n2)); leqTransitivity ⊳
(n2) <= if((n2) <= (n1), (n1), (n2)) ⊳ if((n2) <= (n1), (n1), (n2)) <= m ≫
(n2) <= m; A4 @ m ⊳ $\forall_{\mathrm{obj}}$m: ¬̇ (¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒
¬̇ ((n1) <= m ⇒ ¬̇ ((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ¬̇ (¬̇ ((ϵ) =
|((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n ≫ ¬̇ (¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒
¬̇ ((n1) <= m ⇒ ¬̇ ((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ¬̇ (¬̇ ((ϵ) =
|((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n; FirstConjunct ⊳ ¬̇ (¬̇ (0 <= (ϵ) ⇒
¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒ ¬̇ ((n1) <= m ⇒ ¬̇ ((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒
¬̇ (¬̇ ((ϵ) = |((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n ≫ ¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 =
(ϵ))n)n)n; SecondConjunct ⊳ ¬̇ (¬̇ (0 <= (ϵ) ⇒ ¬̇ (¬̇ (0 = (ϵ))n)n)n ⇒
¬̇ ((n1) <= m ⇒ ¬̇ ((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ¬̇ (¬̇ ((ϵ) = |((fx)[m] +

(−u(fy)[m]))|)n)n)n)n)n ≫ (n1) <= m ⇒ ∸((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒
∸(∸((ϵ) = |((fx)[m] + (−u(fy)[m]))|)n)n)n; MP ⊳ (n1) <= m ⇒ ∸((ϵ) <=
|((fx)[m] + (−u(fy)[m]))| ⇒ ∸(∸((ϵ) = |((fx)[m] + (−u(fy)[m]))|)n)n)n ⊳ (n1) <=
m ≫ ∸((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ∸(∸((ϵ) =
|((fx)[m] + (−u(fy)[m]))|)n)n)n; FromNumericalGreater ⊳ ∸((ϵ) <=
|((fx)[m] + (−u(fy)[m]))| ⇒ ∸(∸((ϵ) = |((fx)[m] + (−u(fy)[m]))|)n)n)n ≫
∸(∸(((fx)[m] + (−u(fy)[m])) <= (−u(ϵ)) ⇒ ∸(∸(((fx)[m] + (−u(fy)[m])) =
(−u(ϵ)))n)n)n)n ⇒ ∸((ϵ) <= ((fx)[m] + (−u(fy)[m])) ⇒ ∸(∸((ϵ) = ((fx)[m] +
(−u(fy)[m])))n)n)n; MP2 ⊳ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n2) <= m ⇒
∸(((fy)[m] + (−u(fx)[m])) <= (ϵ) ⇒ ∸(∸(((fy)[m] + (−u(fx)[m])) =
(ϵ))n)n)n ⊳ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⊳ (n2) <= m ≫
∸(((fy)[m] + (−u(fx)[m])) <= (ϵ) ⇒ ∸(∸(((fy)[m] + (−u(fx)[m])) =
(ϵ))n)n)n; LessNegated ⊳ ∸(((fy)[m] + (−u(fx)[m])) <= (ϵ) ⇒ ∸(∸(((fy)[m] +
(−u(fx)[m])) = (ϵ))n)n)n ≫ ∸((−u(ϵ)) <= (−u((fy)[m] + (−u(fx)[m]))) ⇒
∸(∸((−u(ϵ)) = (−u((fy)[m] + (−u(fx)[m]))))n)n)n; MinusNegated ≫
(−u((fy)[m] + (−u(fx)[m]))) = ((fx)[m] + (−u(fy)[m])); SubLessRight ⊳
(−u((fy)[m] + (−u(fx)[m]))) = ((fx)[m] + (−u(fy)[m])) ⊳ ∸((−u(ϵ)) <=
(−u((fy)[m] + (−u(fx)[m]))) ⇒ ∸(∸((−u(ϵ)) =
(−u((fy)[m] + (−u(fx)[m]))))n)n)n ≫ ∸((−u(ϵ)) <= ((fx)[m] + (−u(fy)[m])) ⇒
∸(∸((−u(ϵ)) = ((fx)[m] + (−u(fy)[m])))n)n)n; LessLeq ⊳ ∸((−u(ϵ)) <=
((fx)[m] + (−u(fy)[m])) ⇒ ∸(∸((−u(ϵ)) = ((fx)[m] + (−u(fy)[m])))n)n)n ≫
(−u(ϵ)) <= ((fx)[m] + (−u(fy)[m])); toNotLess ⊳ (−u(ϵ)) <=
((fx)[m] + (−u(fy)[m])) ≫ ∸(∸(((fx)[m] + (−u(fy)[m])) <= (−u(ϵ)) ⇒
∸(∸(((fx)[m] + (−u(fy)[m])) = (−u(ϵ)))n)n)n)n; NegateDisjunct1 ⊳
∸(∸(((fx)[m] + (−u(fy)[m])) <= (−u(ϵ)) ⇒ ∸(∸(((fx)[m] + (−u(fy)[m])) =
(−u(ϵ)))n)n)n)n ⇒ ∸((ϵ) <= ((fx)[m] + (−u(fy)[m])) ⇒ ∸(∸((ϵ) =
((fx)[m] + (−u(fy)[m])))n)n)n ⊳ ∸(∸(((fx)[m] + (−u(fy)[m])) <= (−u(ϵ)) ⇒
∸(∸(((fx)[m] + (−u(fy)[m])) = (−u(ϵ)))n)n)n)n ≫ ∸((ϵ) <= ((fx)[m] +
(−u(fy)[m])) ⇒ ∸(∸((ϵ) = ((fx)[m] + (−u(fy)[m])))n)n)n; SwitchTerms(x <
y − z) ⊳ ∸((ϵ) <= ((fx)[m] + (−u(fy)[m])) ⇒ ∸(∸((ϵ) =
((fx)[m] + (−u(fy)[m])))n)n)n ≫ ∸((fy)[m] <= ((fx)[m] + (−u(ϵ))) ⇒
∸(∸((fy)[m] = ((fx)[m] + (−u(ϵ))))n)n)n; LessLeq ⊳ ∸((fy)[m] <=
((fx)[m] + (−u(ϵ))) ⇒ ∸(∸((fy)[m] = ((fx)[m] + (−u(ϵ))))n)n)n ≫ (fy)[m] <=
((fx)[m] + (−u(ϵ))); ∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): $\forall_{\mathrm{obj}}$m: ∸(∸(0 <= (ϵ) ⇒
∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= m ⇒ ∸((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒
∸(∸((ϵ) = |((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n ⊢ ∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ⇒ (n2) <= m ⇒ ∸(((fy)[m] + (−u(fx)[m])) <= (ϵ) ⇒
∸(∸(((fy)[m] + (−u(fx)[m])) = (ϵ))n)n)n ⊢ A4 @ m ⊳ $\forall_{\mathrm{obj}}$m: ∸(∸(0 <= (ϵ) ⇒
∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= m ⇒ ∸((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒
∸(∸((ϵ) = |((fx)[m] + (−u(fy)[m]))|)n)n)n)n)n ≫ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ⇒ ∸((n1) <= m ⇒ (ϵ) <=
|((fx)[m] + (−u(fy)[m]))|)n)n; FirstConjunct ⊳ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ⇒ ∸((n1) <= m ⇒ (ϵ) <= |((fx)[m] + (−u(fy)[m]))|)n)n ≫ ∸(0 <=
(ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n; ∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): Ded ⊳
∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): $\forall_{\mathrm{obj}}$m: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ⇒ ∸((n1) <= m ⇒ ∸((ϵ) <= |((fx)[m] + (−u(fy)[m]))| ⇒ ∸(∸((ϵ) =

$|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}(\underline{\mathrm{fy}})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{if}(\underline{(\mathrm{n2})} <= \underline{(\mathrm{n1})}, \underline{(\mathrm{n1})}, \underline{(\mathrm{n2})}) <= \underline{\mathsf{m}} \vdash$
$\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] <= ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{n1})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(\epsilon)} <= |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{(\epsilon)} =$
$|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}] +$
$(-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \mathrm{if}(\underline{(\mathrm{n2})} <= \underline{(\mathrm{n1})}, \underline{(\mathrm{n1})}, \underline{(\mathrm{n2})}) <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] <=$
$((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})); \mathrm{Ded} \rhd \forall\underline{\mathsf{m}}\colon \forall\underline{(\mathrm{n1})}\colon \forall\underline{(\mathrm{n2})}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{n1})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(\epsilon)} <=$
$|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{(\epsilon)} = |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{n1})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(\epsilon)} <= |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(\underline{(\epsilon)} = |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{JoinConjuncts}(2\mathrm{conditions}) \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{n1})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(\epsilon)} <= |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{(\epsilon)} =$
$|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{n1})} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(\underline{(\epsilon)} <= |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{(\epsilon)} = |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] +$
$(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\mathrm{if}(\underline{(\mathrm{n2})} <= \underline{(\mathrm{n1})}, \underline{(\mathrm{n1})}, \underline{(\mathrm{n2})}) <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] <= ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) \gg$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{n1})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(\epsilon)} <=$
$|((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\underline{(\epsilon)} = |((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(((\underline{\mathrm{fy}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathrm{if}(\underline{(\mathrm{n2})} <=$
$\underline{(\mathrm{n1})}, \underline{(\mathrm{n1})}, \underline{(\mathrm{n2})}) <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] <= ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToLess(F)} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\mathrm{n1})}\colon \forall\underline{(\mathrm{n2})}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$((\underline{\mathrm{fy}})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|((\underline{\mathrm{fx}})[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{\mathrm{fx}})[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= ((\underline{\mathrm{fx}})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{ToLess(F)} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$

$\forall \underline{\mathsf{m}}: \forall \underline{\mathsf{n}}: \forall \underline{(\mathrm{n1})}: \forall \underline{(\mathrm{n2})}: \forall \underline{(\epsilon)}: \forall \underline{(\mathrm{fx})}: \forall \underline{(\mathrm{fy})}: \dot{-}(\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(\dot{-}(0$
$\overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{Repetition} \rhd \dot{-}(\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{-}(\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FromNegatedOr} \rhd$
$\dot{-}(\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{-}(\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd$
$\dot{-}(\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd$
$\dot{-}(\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FromNot} <$
$\mathrm{f(Strong)} \rhd \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{(\epsilon)}: \dot{-}(\dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}: \dot{-}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}: \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 =$

(ϵ))n)n)n ⇒ ∸(n̄ <= m̄ ⇒ (fx)[m̄] <= ((fy)[m̄] + (−u(ϵ))))n)n)n)n)n)n)n ≫ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n2) <= m̲ ⇒ ∸(((fy)[m̲] + (−u(fx)[m̲])) <= (ϵ) ⇒ ∸(∸(((fy)[m̲] + (−u(fx)[m̲])) = (ϵ))n)n)n; fromNotSameF(Strongest) ▷ ∸($\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$n̄: ∸($\forall_{\mathrm{obj}}$m̄: ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ n̄ <= m̄ ⇒ ∸(|((fx)[m̄] + (−u(fy)[m̄]))| <= (ϵ) ⇒ ∸(∸(|((fx)[m̄] + (−u(fy)[m̄]))| = (ϵ))n)n)n)n)n)n ≫ ∸($\forall_{\mathrm{obj}}$(ϵ): ∸(∸($\forall_{\mathrm{obj}}$(n1): ∸($\forall_{\mathrm{obj}}$m̲: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= m̲ ⇒ ∸((ϵ) <= |((fx)[m̲] + (−u(fy)[m̲]))| ⇒ ∸(∸((ϵ) = |((fx)[m̲] + (−u(fy)[m̲]))|)n)n)n)n)n)n)n)n)n; ToLess(F)(Helper) ≫ $\forall_{\mathrm{obj}}$m̲: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= m̲ ⇒ ∸((ϵ) <= |((fx)[m̲] + (−u(fy)[m̲]))| ⇒ ∸(∸((ϵ) = |((fx)[m̲] + (−u(fy)[m̲]))|)n)n)n)n)n ⇒ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n2) <= m̲ ⇒ ∸(((fy)[m̲] + (−u(fx)[m̲])) <= (ϵ) ⇒ ∸(∸(((fy)[m̲] + (−u(fx)[m̲])) = (ϵ))n)n)n ⇒ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(if((n2) <= (n1), (n1), (n2)) <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n; TwiceExistMP ▷ $\forall_{\mathrm{obj}}$m̲: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= m̲ ⇒ ∸((ϵ) <= |((fx)[m̲] + (−u(fy)[m̲]))| ⇒ ∸(∸((ϵ) = |((fx)[m̲] + (−u(fy)[m̲]))|)n)n)n)n)n ⇒ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n2) <= m̲ ⇒ ∸(((fy)[m̲] + (−u(fx)[m̲])) <= (ϵ) ⇒ ∸(∸(((fy)[m̲] + (−u(fx)[m̲])) = (ϵ))n)n)n ⇒ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(if((n2) <= (n1), (n1), (n2)) <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n ▷ ∸($\forall_{\mathrm{obj}}$(ϵ): ∸(∸($\forall_{\mathrm{obj}}$(n1): ∸($\forall_{\mathrm{obj}}$m̲: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸((n1) <= m̲ ⇒ ∸((ϵ) <= |((fx)[m̲] + (−u(fy)[m̲]))| ⇒ ∸(∸((ϵ) = |((fx)[m̲] + (−u(fy)[m̲]))|)n)n)n)n)n)n)n)n)n ≫ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n2) <= m̲ ⇒ ∸(((fy)[m̲] + (−u(fx)[m̲])) <= (ϵ) ⇒ ∸(∸(((fy)[m̲] + (−u(fx)[m̲])) = (ϵ))n)n)n ⇒ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(if((n2) <= (n1), (n1), (n2)) <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n; MP ▷ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n2) <= m̲ ⇒ ∸(((fy)[m̲] + (−u(fx)[m̲])) <= (ϵ) ⇒ ∸(∸(((fy)[m̲] + (−u(fx)[m̲])) = (ϵ))n)n)n ⇒ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(if((n2) <= (n1), (n1), (n2)) <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n ▷ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n2) <= m̲ ⇒ ∸(((fy)[m̲] + (−u(fx)[m̲])) <= (ϵ) ⇒ ∸(∸(((fy)[m̲] + (−u(fx)[m̲])) = (ϵ))n)n)n ≫ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(if((n2) <= (n1), (n1), (n2)) <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n; Gen ▷ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(if((n2) <= (n1), (n1), (n2)) <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n ≫ $\forall_{\mathrm{obj}}$m̲: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(if((n2) <= (n1), (n1), (n2)) <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n; IntroExist @ if((n2) <= (n1), (n1), (n2)) ▷ $\forall_{\mathrm{obj}}$m̲: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(if((n2) <= (n1), (n1), (n2)) <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n ≫ ∸($\forall_{\mathrm{obj}}$n̲: ∸($\forall_{\mathrm{obj}}$m̲: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(n̲ <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n)n)n; IntroExist @ (ϵ) ▷ ∸($\forall_{\mathrm{obj}}$n̲: ∸($\forall_{\mathrm{obj}}$m̲: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(n̲ <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n)n)n ≫ ∸($\forall_{\mathrm{obj}}$(ϵ): ∸(∸($\forall_{\mathrm{obj}}$n̲: ∸($\forall_{\mathrm{obj}}$m̲: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(n̲ <= m̲ ⇒ (fy)[m̲] <= ((fx)[m̲] + (−u(ϵ))))n)n)n)n)n)n; Ded ▷

$\dot\neg(\forall_{obj}\underline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <= (\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)}))))n)n)n)n)n)n \gg$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fy)}[\overline{\mathsf{m}}] <= (\underline{(fx)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)}))))n)n)n)n)n)n;$ Repetition $\rhd$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fy)}[\overline{\mathsf{m}}] <= (\underline{(fx)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)}))))n)n)n)n)n)n \gg$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fy)}[\overline{\mathsf{m}}] <= (\underline{(fx)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)}))))n)n)n)n)n)n\rceil, p_0, \mathsf{c})]$

$[\text{From!!} \stackrel{stmt}{==\rightarrow} \text{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \dot\neg(\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow \dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow \dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \vdash \dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n]$

$[\text{From!!} \stackrel{proof}{==\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \vdash \text{To} == \rhd \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \gg \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$

$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{r1}) = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{f1}): \forall_{\mathrm{obj}}(\mathrm{f2}): \forall_{\mathrm{obj}}(\mathrm{f3}): \forall_{\mathrm{obj}}(\mathrm{f4}): \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{(\mathrm{f3}), (\mathrm{f3})\}, \{(\mathrm{f3}), (\mathrm{f4})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s1}): (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s2}): \dot{\neg}(\{\{(\mathrm{s1}), (\mathrm{s1})\}, \{(\mathrm{s1}), (\mathrm{s2})\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}(\epsilon): \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1}): \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2}): \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{r1}): (\mathrm{r1}) \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1}): \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2}): \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{r1}) = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{f1}): \forall_{\mathrm{obj}}(\mathrm{f2}): \forall_{\mathrm{obj}}(\mathrm{f3}): \forall_{\mathrm{obj}}(\mathrm{f4}): \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{(\mathrm{f3}), (\mathrm{f3})\}, \{(\mathrm{f3}), (\mathrm{f4})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s1}): (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s2}): \dot{\neg}(\{\{(\mathrm{s1}), (\mathrm{s1})\}, \{(\mathrm{s1}), (\mathrm{s2})\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}(\epsilon): \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \forall\underline{\mathsf{m}}: \forall\underline{\mathsf{n}}: \forall(\epsilon): \forall(\mathrm{fx}): \forall(\mathrm{fy}): \mathrm{Ded} \rhd$
$\forall\underline{\mathsf{m}}: \forall\underline{\mathsf{n}}: \forall(\epsilon): \forall(\mathrm{fx}): \forall(\mathrm{fy}): \forall_{\mathrm{obj}}(\epsilon): \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\overline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1}): \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2}): \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{r1}): (\mathrm{r1}) \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1}): \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2}): \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{r1}) = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{f1}): \forall_{\mathrm{obj}}(\mathrm{f2}): \forall_{\mathrm{obj}}(\mathrm{f3}): \forall_{\mathrm{obj}}(\mathrm{f4}): \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{(\mathrm{f3}), (\mathrm{f3})\}, \{(\mathrm{f3}), (\mathrm{f4})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s1}): (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s2}): \dot{\neg}(\{\{(\mathrm{s1}), (\mathrm{s1})\}, \{(\mathrm{s1}), (\mathrm{s2})\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}(\epsilon): \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1}): \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2}): \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{r1}): (\mathrm{r1}) \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1}): \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2}): \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{r1}) = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{f1}): \forall_{\mathrm{obj}}(\mathrm{f2}): \forall_{\mathrm{obj}}(\mathrm{f3}): \forall_{\mathrm{obj}}(\mathrm{f4}): \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{(\mathrm{f3}), (\mathrm{f3})\}, \{(\mathrm{f3}), (\mathrm{f4})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s1}): (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s2}): \dot{\neg}(\{\{(\mathrm{s1}), (\mathrm{s1})\}, \{(\mathrm{s1}), (\mathrm{s2})\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}(\epsilon): \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] +$
$(-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \forall_{\mathrm{obj}}(\epsilon): \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\overline{\mathsf{m}}]))| <= (\epsilon) \Rightarrow$

$\dot\neg(\dot\neg(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n \Rightarrow \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|((\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\}; \dot\neg(\{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|((\underline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|((\underline{(fy)}[\overline{\mathsf{m}}] +$
$(-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \vdash MT \rhd \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <=$

$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n \Rightarrow \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \rhd \dot\neg(\{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(fy)}[\overline{\mathsf{m}}] +$

$(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToLess(R)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\ |$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\ |\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\ |\ \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\ |\ \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\ |$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\ |\ \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \vdash$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{ToLess(R)} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\ |$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\ |\ \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\ |\ \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}: \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}: \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \vdash$
Repetition $\rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}: \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}: \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}: \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}: \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \gg$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(f1)}\colon \forall_{\mathrm{obj}} \overline{(f2)}\colon \forall_{\mathrm{obj}} \overline{(f3)}\colon \forall_{\mathrm{obj}} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in \mathrm{P}(\{ph \in \mathrm{P}(\{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(f1)}\colon \forall_{\mathrm{obj}} \overline{(f2)}\colon \forall_{\mathrm{obj}} \overline{(f3)}\colon \forall_{\mathrm{obj}} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n; \mathrm{FromNegatedOr} \rhd$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(fx)}[\overline{\mathsf{m}}] <= (\overline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \{ph \in \mathrm{P}(\{ph \in$
$\mathrm{P}(\{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(f1)}\colon \forall_{\mathrm{obj}} \overline{(f2)}\colon \forall_{\mathrm{obj}} \overline{(f3)}\colon \forall_{\mathrm{obj}} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in \mathrm{P}(\{ph \in \mathrm{P}(\{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(f1)}\colon \forall_{\mathrm{obj}} \overline{(f2)}\colon \forall_{\mathrm{obj}} \overline{(f3)}\colon \forall_{\mathrm{obj}} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \gg$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$

$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <= ((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <= ((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$

$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n)n)n \gg$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n)n; \mathrm{SecondConjunct} \rhd$
$\dot{-}(\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(\dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{-}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \dot{-}(\dot{-}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\overline{(\mathrm{fy})}[\overline{\mathsf{m}}] +$
$(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n)n)n \gg \dot{-}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{-}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{-}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n}; \mathrm{FromNot} <<$
$\rhd\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{From!!} ==$
$\rhd\dot{\neg}\,(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \gg$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{JoinConjuncts} \rhd \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ToNegatedOr} \triangleright$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \triangleright \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ToLess(F)} \triangleright \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \triangleright$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromNotLess(R)} \overset{\mathrm{stmt}}{\to} \underline{\mathrm{SystemQ}} \vdash$
$\forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$

$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} : \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} : \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})} : \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} : \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} : \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f2})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f3})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f4})} : \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})} : \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})} : \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)} : \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}} : \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}} : \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} : \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} : \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})} : \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} : \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} : \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f2})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f3})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f4})} : \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})} : \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})} : \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)} : \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}} : \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}} : \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}]$

$[\mathrm{FromNotLess}(\mathrm{R}) \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\ulcorner \mathrm{SystemQ} \vdash$
$\forall \underline{(\mathrm{fx})} : \forall \underline{(\mathrm{fy})} : \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\epsilon)} : \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}} : \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}} : \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} : \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} : \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})} : \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} : \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} : \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f2})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f3})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f4})} : \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})} : \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})} : \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)} : \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}} : \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}} : \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} : \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} : \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})} : \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})} : \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})} : \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f2})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f3})} : \forall_{\mathrm{obj}} \overline{(\mathrm{f4})} : \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \vdash$
$\mathrm{ToLess}(R) \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (fy)[\overline{\mathsf{m}}] <= ((fx)[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow$
$\{ph \in P(\{ph \in P(\{ph \in P(\overline{P}(\overline{U}nion(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fy)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \gg$
$\dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (fx)[\overline{\mathsf{m}}] <= ((fy)[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n; \forall(fx)\colon \forall(fy)\colon \mathrm{Ded} \rhd$
$\forall(fx)\colon \forall(fy)\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (fy)[\overline{\mathsf{m}}] <= ((fx)[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow$
$\{ph \in P(\{ph \in P(\{ph \in P(\overline{P}(\overline{U}nion(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fy)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \vdash$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$

$((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{NegativeMT} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fy})[\overline{\mathsf{m}}] <=$
$((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{r1})\colon (\mathrm{r1}) \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{r1}) = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{f1})\colon \forall_{\mathrm{obj}}(\mathrm{f2})\colon \forall_{\mathrm{obj}}(\mathrm{f3})\colon \forall_{\mathrm{obj}}(\mathrm{f4})\colon \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{(\mathrm{f3}), (\mathrm{f3})\}, \{(\mathrm{f3}), (\mathrm{f4})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s1})\colon (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}(\{\{(\mathrm{s1}), (\mathrm{s1})\}, \{(\mathrm{s1}), (\mathrm{s2})\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{r1})\colon (\mathrm{r1}) \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{r1}) = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{f1})\colon \forall_{\mathrm{obj}}(\mathrm{f2})\colon \forall_{\mathrm{obj}}(\mathrm{f3})\colon \forall_{\mathrm{obj}}(\mathrm{f4})\colon \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{(\mathrm{f3}), (\mathrm{f3})\}, \{(\mathrm{f3}), (\mathrm{f4})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s1})\colon (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}(\{\{(\mathrm{s1}), (\mathrm{s1})\}, \{(\mathrm{s1}), (\mathrm{s2})\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <= ((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <= ((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fy})[\overline{\mathsf{m}}] <= ((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in$
$\mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{r1})\colon (\mathrm{r1}) \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\mathrm{r1}) = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{f1})\colon \forall_{\mathrm{obj}}(\mathrm{f2})\colon \forall_{\mathrm{obj}}(\mathrm{f3})\colon \forall_{\mathrm{obj}}(\mathrm{f4})\colon \{\{(\mathrm{f1}), (\mathrm{f1})\}, \{(\mathrm{f1}), (\mathrm{f2})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{(\mathrm{f3}), (\mathrm{f3})\}, \{(\mathrm{f3}), (\mathrm{f4})\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow (\mathrm{f1}) = (\mathrm{f3}) \Rightarrow (\mathrm{f2}) = (\mathrm{f4}))\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s1})\colon (\mathrm{s1}) \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{s2})\colon \dot{\neg}(\{\{(\mathrm{s1}), (\mathrm{s1})\}, \{(\mathrm{s1}), (\mathrm{s2})\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot\neg(\dot\neg(|((\overline{(\mathrm{fy})})[\overline{\mathsf{m}}]+(-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}=\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in$ $\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$ $\dot\neg((\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid$ $\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon\overline{(\mathrm{r1})}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot\neg(\dot\neg(\dot\neg((\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$ $\dot\neg((\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot\neg((\overline{(\mathrm{r1})}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$ $\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon\{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow$ $\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\overline{(\mathrm{f1})}=\overline{(\mathrm{f3})}\Rightarrow\overline{(\mathrm{f2})}=\overline{(\mathrm{f4})})\mathrm{n})\mathrm{n}\Rightarrow$ $\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon\overline{(\mathrm{s1})}\in\mathrm{N}\Rightarrow\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon\dot\neg(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\}\in$ $\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot\neg(0<=\overline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$ $\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot\neg(|((\overline{(\mathrm{fx})})[\overline{\mathsf{m}}]+(-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$ $\dot\neg(\dot\neg(|((\overline{(\mathrm{fx})})[\overline{\mathsf{m}}]+(-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\rceil,\mathrm{p}_0,\mathsf{c})]$

[FromNotSameF(Strong)(Helper2) $\overset{\mathrm{stmt}}{\rightarrow}$ SystemQ $\vdash\forall\underline{\mathsf{x}}\colon\forall\underline{\mathsf{y}}\colon\forall\underline{\mathsf{z}}\colon\forall\underline{\mathsf{u}}\colon\forall\underline{\mathsf{v}}\colon\underline{\mathsf{v}}<=|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{z}}))|\vdash\dot\neg(|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|<=(\mathrm{rec}(1+1)*\underline{\mathsf{v}})\Rightarrow\dot\neg(\dot\neg(|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|=(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n}\vdash\dot\neg(|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|<=(\mathrm{rec}(1+1)*\underline{\mathsf{v}})\Rightarrow\dot\neg(\dot\neg(|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|=(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n}\vdash\dot\neg(\underline{\mathsf{y}}=\underline{\mathsf{u}})\mathrm{n}]$

[FromNotSameF(Strong)(Helper2) $\overset{\mathrm{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash\forall\underline{\mathsf{x}}\colon\forall\underline{\mathsf{y}}\colon\forall\underline{\mathsf{z}}\colon\forall\underline{\mathsf{u}}\colon\forall\underline{\mathsf{v}}\colon\underline{\mathsf{v}}<=|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{z}}))|\vdash\dot\neg(|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|<=(\mathrm{rec}(1+1)*\underline{\mathsf{v}})\Rightarrow\dot\neg(\dot\neg(|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|=(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n}\vdash\dot\neg(|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|<=(\mathrm{rec}(1+1)*\underline{\mathsf{v}})\Rightarrow\dot\neg(\dot\neg(|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|=(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n}\vdash$ LessNegated $\rhd\dot\neg(|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|<=(\mathrm{rec}(1+1)*\underline{\mathsf{v}})\Rightarrow\dot\neg(\dot\neg(|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|=(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n}\gg\dot\neg((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))<=(-\mathrm{u}|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|)\Rightarrow\dot\neg(\dot\neg((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))=(-\mathrm{u}|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|))\mathrm{n})\mathrm{n})\mathrm{n};$ NumericalDifference $\gg|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|=|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|;$ SubLessLeft $\rhd|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|=|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|\rhd\dot\neg(|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|<=(\mathrm{rec}(1+1)*\underline{\mathsf{v}})\Rightarrow\dot\neg(\dot\neg(|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|=(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n}\gg\dot\neg(|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|<=(\mathrm{rec}(1+1)*\underline{\mathsf{v}})\Rightarrow\dot\neg(\dot\neg(|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|=(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n};$ LessNegated $\rhd\dot\neg(|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|<=(\mathrm{rec}(1+1)*\underline{\mathsf{v}})\Rightarrow\dot\neg(\dot\neg(|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|=(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n}\gg\dot\neg((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))<=(-\mathrm{u}|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|)\Rightarrow\dot\neg(\dot\neg((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))=(-\mathrm{u}|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|))\mathrm{n})\mathrm{n})\mathrm{n};$ AddEquations(Less) $\rhd\dot\neg((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))<=(-\mathrm{u}|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|)\Rightarrow\dot\neg(\dot\neg((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))=(-\mathrm{u}|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|))\mathrm{n})\mathrm{n})\mathrm{n}\rhd\dot\neg((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))<=(-\mathrm{u}|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|)\Rightarrow\dot\neg(\dot\neg((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))=(-\mathrm{u}|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|))\mathrm{n})\mathrm{n})\mathrm{n}\gg\dot\neg(((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))+(-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))<=((-\mathrm{u}|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|)+(-\mathrm{u}|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|))\Rightarrow\dot\neg(\dot\neg(((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))+(-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))=((-\mathrm{u}|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|)+(-\mathrm{u}|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|)))\mathrm{n})\mathrm{n})\mathrm{n};$ TwoHalves $\gg((\mathrm{rec}(1+1)*\underline{\mathsf{v}})+(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))=\underline{\mathsf{v}};$ EqNegated$\rhd((\mathrm{rec}(1+1)*\underline{\mathsf{v}})+(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))=\underline{\mathsf{v}}\gg(-\mathrm{u}((\mathrm{rec}(1+1)*\underline{\mathsf{v}})+(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))=(-\mathrm{u}\underline{\mathsf{v}});-\mathrm{x}-\mathrm{y}=-(\mathrm{x}+\mathrm{y})\gg((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))+(-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))=(-\mathrm{u}((\mathrm{rec}(1+1)*\underline{\mathsf{v}})+(\mathrm{rec}(1+1)*\underline{\mathsf{v}})));$ eqTransitivity $\rhd((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))+(-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))=(-\mathrm{u}((\mathrm{rec}(1+1)*\underline{\mathsf{v}})+(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))\rhd(-\mathrm{u}((\mathrm{rec}(1+1)*\underline{\mathsf{v}})+(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))=(-\mathrm{u}\underline{\mathsf{v}})\gg((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))+(-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))=(-\mathrm{u}\underline{\mathsf{v}});$ SubLessLeft $\rhd((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))+(-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))=(-\mathrm{u}\underline{\mathsf{v}})\rhd\dot\neg(((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))+(-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))<=((-\mathrm{u}|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|)+(-\mathrm{u}|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|))\Rightarrow\dot\neg(\dot\neg(((-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}}))+(-\mathrm{u}(\mathrm{rec}(1+1)*\underline{\mathsf{v}})))=((-\mathrm{u}|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{y}}))|)+(-\mathrm{u}|(\underline{\mathsf{u}}+(-\mathrm{u}\underline{\mathsf{z}}))|)))\mathrm{n})\mathrm{n})\mathrm{n}\gg$

$\dot{\neg}((-\mathrm{u}\underline{v}) <= ((-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|) + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{v}) =$
$((-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|) + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{plusCommutativity} \gg$
$((-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|) + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) = ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} +$
$(-\mathrm{u}\underline{y}))|)); \mathrm{SubLessRight} \rhd ((-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|) + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) =$
$((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \rhd \dot{\neg}((-\mathrm{u}\underline{v}) <=$
$((-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|) + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{v}) =$
$((-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|) + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}\underline{v}) <=$
$((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{v}) =$
$((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{AddEquations(LeqLess)} \rhd \underline{v} <=$
$|(\underline{x} + (-\mathrm{u}\underline{z}))| \rhd \dot{\neg}((-\mathrm{u}\underline{v}) <= ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \Rightarrow$
$\dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{v}) = ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)))\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}((\underline{v} + (-\mathrm{u}\underline{v})) <= (|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) \Rightarrow$
$\dot{\neg}(\dot{\neg}((\underline{v} + (-\mathrm{u}\underline{v})) =$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Negative} \gg$
$(\underline{v} + (-\mathrm{u}\underline{v})) = 0; \mathrm{SubLessLeft} \rhd (\underline{v} + (-\mathrm{u}\underline{v})) = 0 \rhd \dot{\neg}((\underline{v} + (-\mathrm{u}\underline{v})) <=$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{v} + (-\mathrm{u}\underline{v})) =$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (|(\underline{x} +$
$(-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{plusAssociativity} \gg$
$(((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) =$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))); \mathrm{eqSymmetry} \rhd$
$(((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) =$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) \gg$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) =$
$(((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)); \mathrm{SubLessRight} \rhd$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) =$
$(((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \rhd \dot{\neg}(0 <=$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$(((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} +$
$(-\mathrm{u}\underline{y}))|)))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{insertTwoMiddleTerms(Numerical)} \gg |(\underline{x} + (-\mathrm{u}\underline{z}))| <=$
$(((|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|) + |(\underline{u} + (-\mathrm{u}\underline{z}))|); \mathrm{PositiveToLeft(Leq)} \rhd |(\underline{x} +$
$(-\mathrm{u}\underline{z}))| <= (((|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|) + |(\underline{u} + (-\mathrm{u}\underline{z}))|) \gg (|(\underline{x} + (-\mathrm{u}\underline{z}))| +$
$(-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) <= (|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|); \mathrm{plusCommutativity} \gg$
$(|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|) =$
$(|(\underline{y} + (-\mathrm{u}\underline{u}))| + |(\underline{x} + (-\mathrm{u}\underline{y}))|); \mathrm{subLeqRight} \rhd (|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|) =$
$(|(\underline{y} + (-\mathrm{u}\underline{u}))| + |(\underline{x} + (-\mathrm{u}\underline{y}))|) \rhd (|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) <=$
$(|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|) \gg (|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) <=$
$(|(\underline{y} + (-\mathrm{u}\underline{u}))| + |(\underline{x} + (-\mathrm{u}\underline{y}))|); \mathrm{PositiveToLeft(Leq)} \rhd (|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} +$
$(-\mathrm{u}\underline{z}))|)) <= (|(\underline{y} + (-\mathrm{u}\underline{u}))| + |(\underline{x} + (-\mathrm{u}\underline{y}))|) \gg (((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} +$
$(-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) <= |(\underline{y} + (-\mathrm{u}\underline{u}))|; \mathrm{LessLeqTransitivity} \rhd \dot{\neg}(0 <=$
$(((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)))\mathrm{n})\mathrm{n})\mathrm{n} \rhd (((|(\underline{x} +$
$(-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) <= |(\underline{y} + (-\mathrm{u}\underline{u}))| \gg \dot{\neg}(0 <=$
$|(\underline{y} + (-\mathrm{u}\underline{u}))| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |(\underline{y} + (-\mathrm{u}\underline{u}))|)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FromPositiveNumerical} \rhd \dot{\neg}(0 <=$

$|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = |(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}})) =$
$0)\mathrm{n}; \mathrm{NegativeToRight(Neq)(1term)} \rhd \dot{\neg}\,((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}})) = 0)\mathrm{n} \gg \dot{\neg}\,(\underline{\mathsf{y}} = \underline{\mathsf{u}})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromNotSameF(Strong)(Helper)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall \underline{(\mathrm{v1})}\colon \forall \underline{(\mathrm{v2})}\colon \forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{n1})}\colon \forall \underline{(\mathrm{n2})}\colon \forall \underline{(\epsilon)}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})} \Rightarrow \dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(0 <=$
$(\mathrm{rec}(1+1) * \underline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (\mathrm{rec}(1+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n1})} <= \underline{(\mathrm{v1})} \Rightarrow$
$\underline{(\mathrm{n1})} <= \underline{(\mathrm{v2})} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))| <= (\mathrm{rec}(1+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))| = (\mathrm{rec}(1+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))| <= (\mathrm{rec}(1+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))| = (\mathrm{rec}(1+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n2})} <=$
$\underline{\mathsf{m}} \Rightarrow \dot{\neg}\,((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\mathrm{n}]$

$[\mathrm{FromNotSameF(Strong)(Helper)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall \underline{(\mathrm{v1})}\colon \forall \underline{(\mathrm{v2})}\colon \forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{n1})}\colon \forall \underline{(\mathrm{n2})}\colon \forall \underline{(\epsilon)}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})} \Rightarrow \dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(0 <=$
$(\mathrm{rec}(1+1) * \underline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (\mathrm{rec}(1+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n1})} <= \underline{(\mathrm{v1})} \Rightarrow$
$\underline{(\mathrm{n1})} <= \underline{(\mathrm{v2})} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))| <= (\mathrm{rec}(1+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))| = (\mathrm{rec}(1+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))| <= (\mathrm{rec}(1+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))| = (\mathrm{rec}(1+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{(\mathrm{n2})} <=$
$\underline{\mathsf{m}} \vdash \mathrm{FromNegated}(2 * \mathrm{Imply}) \rhd \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})} \Rightarrow \dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] +$
$(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,((\underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})}; \mathrm{SecondConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] +$
$(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{fromNotLess} \rhd \dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{(\epsilon)} <=$
$|((\underline{(\mathrm{fx})}[\underline{(\mathrm{n2})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{n2})}]))|; \mathrm{A4} @ \underline{(\mathrm{n2})} \rhd \forall_{\mathrm{obj}}\underline{(\mathrm{v1})}\colon \forall_{\mathrm{obj}}\underline{(\mathrm{v2})}\colon \dot{\neg}\,(0 <=$
$(\mathrm{rec}(1+1) * \underline{(\epsilon)}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (\mathrm{rec}(1+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n1})} <= \underline{(\mathrm{v1})} \Rightarrow$
$\underline{(\mathrm{n1})} <= \underline{(\mathrm{v2})} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))| <= (\mathrm{rec}(1+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fx})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{(\mathrm{v2})}]))| = (\mathrm{rec}(1+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))| <= (\mathrm{rec}(1+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\underline{(\mathrm{fy})}[\underline{(\mathrm{v1})}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{(\mathrm{v2})}]))| = (\mathrm{rec}(1+1) * \underline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$

$\forall_{obj}$(v2): ¬̇(0 <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (n2) ⇒ (n1) <= (v2) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[(v2)]))| <= (rec(1+1)∗(ϵ)) ⇒ ¬̇(¬̇(|((fx)[(n2)]+(−u(fx)[(v2)]))| = (rec(1+1)∗(ϵ)))n)n)n ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n; A4 @ m ⊳ $\forall_{obj}$(v2): ¬̇(0 <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (n2) ⇒ (n1) <= (v2) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n ≫ ¬̇(0 <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (n2) ⇒ (n1) <= m ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n; PositiveHalved ⊳ ¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ≫ ¬̇(0 <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n; leqTransitivity ⊳ (n1) <= (n2) ⊳ (n2) <= m ≫ (n1) <= m; MP3 ⊳ ¬̇(0 <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (n2) ⇒ (n1) <= m ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n ⊳ ¬̇(0 <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⊳ (n1) <= (n2) ⊳ (n1) <= m ≫ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n; FirstConjunct ⊳ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n ≫ ¬̇(|((fx)[(n2)] + (−u(fx)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n; SecondConjunct ⊳ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n ≫ ¬̇(|((fy)[(n2)] + (−u(fy)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n; FromNotSameF(Strong)(Helper2) ⊳ (ϵ) <= |((fx)[(n2)] + (−u(fy)[(n2)]))| ⊳ ¬̇(|((fx)[(n2)] + (−u(fx)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fx)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⊳ ¬̇(|((fy)[(n2)] + (−u(fy)[m]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(|((fy)[(n2)] + (−u(fy)[m]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ≫ ¬̇((fx)[m] = (fy)[m])n; ∀(v1): ∀(v2): ∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): Ded ⊳ ∀(v1): ∀(v2): ∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ¬̇(¬̇(0 <= (ϵ) ⇒ ¬̇(¬̇(0 = (ϵ))n)n)n ⇒ (n1) <= (n2) ⇒ ¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ¬̇(¬̇(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⊢ $\forall_{obj}$(v1): $\forall_{obj}$(v2): ¬̇(0 <= (rec(1 + 1) ∗ (ϵ)) ⇒ ¬̇(¬̇(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒

$\underline{(n1)} <= \underline{(v2)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{fx})[\underline{(v1)}] + (-u\underline{(fx)}[\underline{(v2)}]))| <= (rec(1+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fx})[\underline{(v1)}] + (-u\underline{(fx)}[\underline{(v2)}]))| = (rec(1+1) * \underline{(\epsilon)}))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fy})[\underline{(v1)}] + (-u\underline{(fy)}[\underline{(v2)}]))| <= (rec(1+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fy})[\underline{(v1)}] + (-u\underline{(fy)}[\underline{(v2)}]))| = (rec(1+1) * \underline{(\epsilon)}))n)n)n)n)n \vdash \underline{(n2)} <=$
$\underline{\mathsf{m}} \vdash \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = (fy)[\underline{\mathsf{m}}])n \gg \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{(n1)} <=$
$\underline{(n2)} \Rightarrow \dot{\neg}(|((fx)[\underline{(n2)}] + (-u(fy)[\underline{(n2)}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\underline{(n2)}] + (-u(fy)[\underline{(n2)}]))| = \underline{(\epsilon)})n)n)n)n \Rightarrow \forall_{obj}\underline{(v1)}\colon \forall_{obj}\underline{(v2)}\colon \dot{\neg}(0 <=$
$(rec(1+1) * \underline{(\epsilon)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec(1+1) * \underline{(\epsilon)}))n)n)n \Rightarrow \underline{(n1)} <= \underline{(v1)} \Rightarrow$
$\underline{(n1)} <= \underline{(v2)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{fx})[\underline{(v1)}] + (-u\underline{(fx)}[\underline{(v2)}]))| <= (rec(1+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fx})[\underline{(v1)}] + (-u\underline{(fx)}[\underline{(v2)}]))| = (rec(1+1) * \underline{(\epsilon)}))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fy})[\underline{(v1)}] + (-u\underline{(fy)}[\underline{(v2)}]))| <= (rec(1+1) * \underline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fy})[\underline{(v1)}] + (-u\underline{(fy)}[\underline{(v2)}]))| = (rec(1+1) * \underline{(\epsilon)}))n)n)n)n)n \Rightarrow \underline{(n2)} <=$
$\underline{\mathsf{m}} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}])n\rceil, p_0, \mathsf{c})]$

$[FromNotSameF(Strong) \stackrel{stmt}{\rightarrow} SystemQ \vdash$
$\forall\underline{(v1)}\colon \forall\underline{(v2)}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(n1)}\colon \forall\underline{(n2)}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}($
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{fx})[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fx})[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \vdash \dot{\neg}(\forall_{obj}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}])n)n)n]$

$[FromNotSameF(Strong) \stackrel{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil SystemQ \vdash$
$\forall\underline{(v1)}\colon \forall\underline{(v2)}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(n1)}\colon \forall\underline{(n2)}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}($
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{fx})[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fx})[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \vdash$
$Repetition \rhd \dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{fx})[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fx})[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \gg$
$\dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|((\underline{fx})[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{fx})[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n)n; Ded \rhd \dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{fx})[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{fx})[\overline{\mathsf{m}}] +$
$(-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \gg \dot{\neg}(\forall_{obj}\underline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\underline{(n1)}\colon \dot{\neg}(\forall_{obj}\underline{(n2)}\colon \dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{(n1)} <= \underline{(n2)} \Rightarrow$
$\dot{\neg}(|((\underline{fx})[\underline{(n2)}] + (-u\underline{(fy)}[\underline{(n2)}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{fx})[\underline{(n2)}] + (-u\underline{(fy)}[\underline{(n2)}]))| =$
$\underline{(\epsilon)})n)n)n)n)n)n; AEA - negated \rhd \dot{\neg}(\forall_{obj}\underline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\underline{(n1)}\colon \dot{\neg}(\forall_{obj}\underline{(n2)}\colon \dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{(n1)} <= \underline{(n2)} \Rightarrow$
$\dot{\neg}(|((\underline{fx})[\underline{(n2)}] + (-u\underline{(fy)}[\underline{(n2)}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{fx})[\underline{(n2)}] + (-u\underline{(fy)}[\underline{(n2)}]))| =$
$\underline{(\epsilon)})n)n)n)n)n)n \gg \dot{\neg}(\forall_{obj}\underline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\underline{(n1)}\colon \dot{\neg}(\forall_{obj}\underline{(n2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{(n1)} <= \underline{(n2)} \Rightarrow \dot{\neg}(|((\underline{fx})[\underline{(n2)}] + (-u\underline{(fy)}[\underline{(n2)}]))| <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{fx})[\underline{(n2)}] + (-u\underline{(fy)}[\underline{(n2)}]))| = \underline{(\epsilon)})n)n)n)n)n)n)n)n; Cauchy(2) \gg$
$\forall_{obj}\underline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\underline{(n1)}\colon \dot{\neg}(\forall_{obj}\underline{(v1)}\colon \forall_{obj}\underline{(v2)}\colon \dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\underline{(n1)} <= \underline{(v1)} \Rightarrow \underline{(n1)} <= \underline{(v2)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{fx})[\underline{(v1)}] + (-u\underline{(fx)}[\underline{(v2)}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fx})[\underline{(v1)}] + (-u\underline{(fx)}[\underline{(v2)}]))| = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{fy})[\underline{(v1)}] + (-u\underline{(fy)}[\underline{(v2)}]))| <= \underline{(\epsilon)} \Rightarrow$

∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (ϵ))n)n)n)n)n)n)n; A4 @(rec(1 + 1) ∗ (ϵ)) ⊳
$\forall_{obj}$(ϵ): ∸($\forall_{obj}$(n1): ∸($\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒
(n1) <= (v1) ⇒ (n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (ϵ) ⇒
∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (ϵ))n)n)n ⇒ ∸(∸(|((fy)[(v1)] +
(−u(fy)[(v2)]))| <= (ϵ) ⇒ ∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(ϵ))n)n)n)n)n)n)n ≫ ∸($\forall_{obj}$(n1): ∸($\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸(0 <=
(rec(1 + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒
(n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(rec(1 + 1) ∗ (ϵ)))n)n)n)n)n)n)n; FromNotSameF(Strong)(Helper) ≫
∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n1) <= (n2) ⇒
∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒
∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⇒ $\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸(0 <=
(rec(1 + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒
(n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n ⇒ (n2) <=
m ⇒ ∸((fx)[m] = (fy)[m])n; EAE − MP ⊳ ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ⇒ (n1) <= (n2) ⇒ ∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒
∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| = (ϵ))n)n)n)n ⇒ $\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸(0 <=
(rec(1 + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒
(n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n ⇒ (n2) <=
m ⇒ ∸((fx)[m] = (fy)[m])n ⊳ ∸($\forall_{obj}$(ϵ): ∸($\forall_{obj}$(n1): ∸($\forall_{obj}$(n2): ∸(∸(∸(0 <=
(ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ (n1) <= (n2) ⇒
∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| <= (ϵ) ⇒ ∸(∸(|((fx)[(n2)] + (−u(fy)[(n2)]))| =
(ϵ))n)n)n)n)n)n)n)n ≫ $\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸(0 <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒ (n1) <= (v2) ⇒
∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n ⇒ (n2) <=
m ⇒ ∸((fx)[m] = (fy)[m])n; ExistMP ⊳ $\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸(0 <=
(rec(1 + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒
(n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒
∸(∸(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (rec(1 + 1) ∗ (ϵ)))n)n)n)n)n ⇒ (n2) <=
m ⇒ ∸((fx)[m] = (fy)[m])n ⊳ ∸($\forall_{obj}$(n1): ∸($\forall_{obj}$(v1): $\forall_{obj}$(v2): ∸(0 <=
(rec(1 + 1) ∗ (ϵ)) ⇒ ∸(∸(0 = (rec(1 + 1) ∗ (ϵ)))n)n)n ⇒ (n1) <= (v1) ⇒
(n1) <= (v2) ⇒ ∸(∸(|((fx)[(v1)] + (−u(fx)[(v2)]))| <= (rec(1 + 1) ∗ (ϵ)) ⇒

$\dot\neg(\dot\neg(|(\overline{(fx)}[\overline{(v1)}] + (-u(\overline{(fx)}[\overline{(v2)}]))| = (rec(1+1) * \overline{(\epsilon)}))n)n)n \Rightarrow$
$\dot\neg(\dot\neg(|(\overline{(fy)}[\overline{(v1)}] + (-u(\overline{(fy)}[\overline{(v2)}]))| <= (rec(1+1) * \overline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(|(\overline{(fy)}[\overline{(v1)}] +$
$(-u(\overline{(fy)}[\overline{(v2)}]))| = (rec(1+1) * \overline{(\epsilon)}))n)n)n)n)n)n)n \gg \overline{(n2)} <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] =$
$\overline{(fy)}[\underline{\mathsf{m}}])n; \mathrm{Gen} \rhd \overline{(n2)} <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = \overline{(fy)}[\underline{\mathsf{m}}])n \gg \forall_{obj}\underline{\mathsf{m}}\colon \overline{(n2)} <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = \overline{(fy)}[\underline{\mathsf{m}}])n; \mathrm{IntroExist} @ \overline{(n2)} \rhd \forall_{obj}\underline{\mathsf{m}}\colon \overline{(n2)} <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] =$
$\overline{(fy)}[\underline{\mathsf{m}}])n \gg \dot\neg(\forall_{obj}\underline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = \overline{(fy)}[\underline{\mathsf{m}}])n)n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{SameFreciprocal(Helper)} \stackrel{stmt}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\overline{(fx)}\colon \forall_{obj}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow$
$\dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(\overline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}] = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow$
$\dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\underline{\mathsf{m}}]]$

$[\mathrm{SameFreciprocal(Helper)} \stackrel{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\overline{(fx)}\colon \forall_{obj}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])n \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash \mathrm{A4} @ \underline{\mathsf{m}} \rhd \forall_{obj}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])n \gg \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow$
$\dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])n; \mathrm{MP} \rhd \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow \dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])n \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \gg \dot\neg((\overline{(fx)}[\underline{\mathsf{m}}] = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg((\overline{(op1)} \in N \Rightarrow$
$\dot\neg((\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\overline{(crs1)}\colon \dot\neg(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{\mathsf{m}}])n; \mathrm{NatType} \gg$
$\underline{\mathsf{m}} \in N; 0f \rhd \underline{\mathsf{m}} \in N \gg \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$

$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = 0; \mathrm{SubNeqRight} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = 0 \rhd \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] =$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \gg \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] =$
$0)\mathrm{n}; \mathrm{ReciprocalFnonzero} \rhd \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]; \mathrm{EqMultiplicationLeft} \rhd \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in$
$\mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}] \gg ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]) = ((\mathrm{fx})[\underline{\mathsf{m}}] * \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]); \mathrm{Reciprocal} \rhd \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \gg ((\mathrm{fx})[\underline{\mathsf{m}}] * \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]) = 1; \mathrm{1f} \rhd \underline{\mathsf{m}} \in \mathrm{N} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] =$
$1; \mathrm{eqSymmetry} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = 1 \gg 1 = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]; \mathrm{eqTransitivity} \rhd$
$((\mathrm{fx})[\underline{\mathsf{m}}] * \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]) = 1 \rhd 1 = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{\neg}((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}), (\mathrm{op1})\}, \{(\mathrm{op1}), (\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{crs1})\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{(\mathrm{crs1}), (\mathrm{crs1})\}, \{(\mathrm{crs1}), 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] \gg ((\mathrm{fx})[\underline{\mathsf{m}}] * \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]) = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op1})\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}(\mathrm{op2})\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{op1}) \in \mathrm{N} \Rightarrow$

$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n}\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]; \mathrm{TimesF} \gg \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]); \mathrm{eqTransitivity4} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]) \rhd ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]) = ((\mathrm{fx})[\underline{\mathsf{m}}] * \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]) \rhd ((\mathrm{fx})[\underline{\mathsf{m}}] * \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]) =$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] \gg \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$

$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}\overline{[\underline{\mathsf{m}}]} = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]; \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\mathrm{fx})}\colon \mathrm{Ded} \rhd$
$\forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\mathrm{fx})}\colon \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}\overline{[\underline{\mathsf{m}}]} = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}\overline{[\underline{\mathsf{m}}]} = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\rceil, \mathrm{p}_0, \mathsf{c})]$
$[\mathrm{SameFreciprocal} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$

$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\,\dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\,\dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\,\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\,\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\,\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\,\dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\,\dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{SameFreciprocal} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{fx})}{:}\,\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\,\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\,\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\,\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\,\dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}{:}\,\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}{:}\,\dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{FromNotSameF(Strong)} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\,\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\,\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\,\dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow$

$\dot{-}(\dot{-}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{-}((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SameFreciprocal}(\mathrm{Helper}) \gg$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{-}((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\dot{-}(\dot{-}(\dot{-}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}\overline{[\underline{\mathsf{m}}]} = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]; \mathrm{ExistMP} \rhd$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{-}((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\dot{-}(\dot{-}(\dot{-}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}\overline{[\underline{\mathsf{m}}]} = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] \rhd$

$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\overline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]; \mathrm{Gen} \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\overline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\overline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]; \mathrm{IntroExist} @ \underline{\mathsf{n}} \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\overline{\mathrm{fx}})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$

$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}\overline{[\underline{\mathsf{m}}]} = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\underline{\mathsf{m}}] \gg$
$\dot\neg(\forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}\overline{[\underline{\mathsf{m}}]} = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\underline{\mathsf{m}}])n)n; (Eventually =$
$f)2sameF \rhd \dot\neg(\forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}\overline{[\underline{\mathsf{m}}]} = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot\neg(\forall_{obj}\overline{(crs1)}: \dot\neg(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\underline{\mathsf{m}}])n)n \gg$
$\forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}\overline{[\mathsf{m}]} + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$

$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{LeqReflexivity}(\underline{\mathrm{R}}) \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{fx})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}]$

$[\mathrm{LeqReflexivity}(\mathrm{R}) \stackrel{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \mathrm{eqReflexivity} \gg \{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\mid$

$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)}))n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\overline{\mathsf{m}}] +$
$(-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)}))n)n)n)n)n\}; \text{lemma eqLeq}(R) \rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)}))n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)}))n)n)n)n)n\} \gg$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)}))n)n \Rightarrow$

$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <= ((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)}))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}], \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{Reciprocal}(\mathrm{R}) \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall(\mathrm{fx})\colon \dot{\neg}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\overline{(crs1)}: \dot{-}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in$
$N \Rightarrow \dot{-}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\overline{(crs1)}: \dot{-}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \vdash$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}: \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\underline{(fx)}[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\dot{-}(\dot{-}(\dot{-}((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{-}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{-}((\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\underline{(fx)}[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\dot{-}(\dot{-}(\dot{-}((\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{-}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{-}((\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}((\overline{(op1)} \in N \Rightarrow \dot{-}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}: \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$

$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}]$
$[\mathrm{Reciprocal}(\mathrm{R}) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall(\mathrm{fx})\colon \dot{\neg}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \vdash$
$\mathrm{From!!} == \rhd\dot{\neg}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}\,(\forall_{obj}\overline{(s2)}\colon \dot{\neg}\,(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \gg$
$\dot{\neg}\,(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-u\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n)n; \mathrm{SameFreciprocal} \rhd \dot{\neg}\,(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \gg$
$\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{obj}\overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$

$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})n)n\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})n)n\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n; \mathrm{To} == \rhd\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})n)n\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$

$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},1\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(|(\{ph\in$
$\{ph\in P(P(Union(\{N,Q\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in$
$N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot{\neg}(\forall_{obj}\overline{(crs1)}\colon\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},1\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=$
$\overline{(\epsilon)})n)n)n)n)n\};eqReflexivity\gg\{ph\in P(\{ph\in P(\{ph\in$
$P(P(Union(\{N,Q\})))\mid\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow$
$\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\})\mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon\overline{(r1)}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow$
$\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow\dot{\neg}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon\forall_{obj}\overline{(f2)}\colon\forall_{obj}\overline{(f3)}\colon\forall_{obj}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{\neg}(\forall_{obj}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\})\mid\forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot{\neg}(|(\{ph\in\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fx)}[\underline{\mathsf{m}}]*\{ph\in\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(fx)}[\underline{\mathsf{m}}]=0)n\Rightarrow\dot{\neg}(\mathsf{f}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},rec\overline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n\Rightarrow\dot{\neg}(\overline{(fx)}[\underline{\mathsf{m}}]=0\Rightarrow\dot{\neg}(\mathsf{f}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph\in\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fx)}[\underline{\mathsf{m}}]*\{ph\in\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{obj}\underline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(fx)}[\underline{\mathsf{m}}]=0)n\Rightarrow\dot{\neg}(\mathsf{f}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},rec\overline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n\Rightarrow\dot{\neg}(\overline{(fx)}[\underline{\mathsf{m}}]=0\Rightarrow\dot{\neg}(\mathsf{f}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})n)n)n)n)n\}=$
$\{ph\in P(\{ph\in P(\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\})\mid\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon\overline{(r1)}\in$
$\mathsf{f}_{\mathrm{Ph}}\Rightarrow\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot{\neg}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon\forall_{obj}\overline{(f2)}\colon\forall_{obj}\overline{(f3)}\colon\forall_{obj}\overline{(f4)}\colon\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon\overline{(s1)}\in N\Rightarrow\dot{\neg}(\forall_{obj}\overline{(s2)}\colon\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\})\mid\forall_{obj}\overline{(\epsilon)}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{obj}\overline{\mathsf{m}}\colon\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot{\neg}(|(\{ph\in\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in N\Rightarrow\dot{\neg}(\overline{(op2)}\in Q)n)n\Rightarrow$

$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$(\epsilon))n)n)n)n)n\}; == \mathrm{Transitivity} \rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec(fx)[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$

$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) | \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$f_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in f_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in f_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$f_{Ph})n)n)n)n\}) | \forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{n}: \dot\neg(\forall_{obj}\overline{m}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot\neg(\forall_{obj}\underline{m}: \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fx)[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N, Q\})))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{m}] = 0)n \Rightarrow \dot\neg(f_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, rec(fx)[\underline{m}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{m}] = 0 \Rightarrow \dot\neg(f_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n)n)n\}[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot\neg(\forall_{obj}\underline{m}: \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fx)[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N, Q\})))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{m}] = 0)n \Rightarrow \dot\neg(f_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, rec(fx)[\underline{m}]\}\})n)n)n \Rightarrow \dot\neg((fx)[\underline{m}] = 0 \Rightarrow \dot\neg(f_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n)n)n\}[\underline{m}])\}\})n)n\}[\overline{m}] + (-ud_{Ph}[\overline{m}]))| =$
$(\epsilon))n)n)n)n)n\} \triangleright \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) | \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$f_{Ph} \Rightarrow \dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in f_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in f_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$f_{Ph})n)n)n)n\}) | \forall_{obj}\overline{(\epsilon)}: \dot\neg(\forall_{obj}\overline{n}: \dot\neg(\forall_{obj}\overline{m}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot\neg(\forall_{obj}\underline{m}: \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((fx)[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N, Q\})))) |$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(\dot\neg(\dot\neg(\dot\neg((fx)[\underline{m}] = 0)n \Rightarrow \dot\neg(f_{Ph} =$

$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}(\mathrm{fx})[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n)n)n\}[\underline{m}])\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) |$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}: \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},((\mathrm{fx})[\underline{m}] * \{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) |$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} |$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(((\mathrm{fx})[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}(\mathrm{fx})[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n)n)n\}[\underline{m}])\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(\mathrm{Union}(\{N,Q\}))) |$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}: \overline{(\mathrm{s1})} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}: \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{n}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{m}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) |$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}: \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}: \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg$
$\{ph \in P(\{ph \in P(\{ph \in P(P(\mathrm{Union}(\{N,Q\}))) |$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}: \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}: \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}: \{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}: \overline{(\mathrm{s1})} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}: \dot{\neg}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{n}: \dot{\neg}(\forall_{\mathrm{obj}}\overline{m}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) |$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}: \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},((\mathrm{fx})[\underline{m}] * \{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) |$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in N \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Repetition} \rhd \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$

$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\mathsf{e}_{\mathrm{Ph}} =$

$\{\{\underline{m},\underline{m}\},\{\underline{m},((\underline{fx})[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{fx})[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},rec(\underline{fx})[\overline{\underline{m}}]\}\})n)n)n \Rightarrow \dot{\neg}((\underline{fx})[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n)n)n\}[\underline{m}])\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},((\underline{fx})[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{fx})[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},rec(\underline{fx})[\overline{\underline{m}}]\}\})n)n)n \Rightarrow \dot{\neg}((\underline{fx})[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{Ph} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n)n)n\}[\underline{m}])\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{Ph}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{n}: \dot{\neg}(\forall_{obj}\overline{m}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},1\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},1\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{Ph}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\}], p_0, \mathsf{c})]$
venter—-

[sup $\stackrel{\text{prio}}{\rightarrow}$

Preassociative

[sup], [base], [bracket ∗ end bracket], [big bracket ∗ end bracket], [\$ ∗ \$], [**flush left** [∗]], [x], [y], [z], [[∗ ⋈ ∗]], [[∗ $\stackrel{*}{\rightarrow}$ ∗]], [pyk], [tex], [name], [prio], [∗], [T], [if(∗, ∗, ∗)], [[∗ $\stackrel{*}{\Rightarrow}$ ∗]], [val], [claim], [⊥], [f(∗)], [$(*)^{I}$], [F], [$\underline{0}$], [$\underline{1}$], [$\underline{2}$], [$\underline{3}$], [$\underline{4}$], [$\underline{5}$], [$\underline{6}$], [$\underline{7}$], [$\underline{8}$], [$\underline{9}$], [0], [1], [2], [3], [4], [5], [6], [7], [8], [9], [a], [b], [c], [d], [e], [f], [g], [h], [i], [j], [k], [l], [m], [n], [o], [p], [q], [r], [s], [t], [u], [v], [w], [$(*)^{M}$], [If(∗, ∗, ∗)], [array{∗} ∗ end array], [l], [c], [r], [empty], [⟨∗ | ∗ := ∗⟩], [$\mathcal{M}(*)$], [$\tilde{\mathcal{U}}(*)$], [$\mathcal{U}(*)$], [$\mathcal{U}^{M}(*)$], [**apply**(∗, ∗)], [$\textbf{apply}_1(*, *)$], [identifier(∗)], [$\text{identifier}_1(*, *)$], [array-

plus(*, *)], [array-remove(*, *, *)], [array-put(*, *, *, *)], [array-add(*, *, *, *, *)], [bit(*, *)], [$\mathrm{bit}_1(*, *)$], [rack], ["vector"], ["bibliography"], ["dictionary"], ["body"], ["codex"], ["expansion"], ["code"], ["cache"], ["diagnose"], ["pyk"], ["tex"], ["texname"], ["value"], ["message"], ["macro"], ["definition"], ["unpack"], ["claim"], ["priority"], ["lambda"], ["apply"], ["true"], ["if"], ["quote"], ["proclaim"], ["define"], ["introduce"], ["hide"], ["pre"], ["post"], [$\mathcal{E}(*, *, *)$], [$\mathcal{E}_2(*, *, *, *, *)$], [$\mathcal{E}_3(*, *, *, *)$], [$\mathcal{E}_4(*, *, *, *)$], [**lookup**(*, *, *)], [**abstract**(*, *, *, *)], [$\lceil *\rceil$], [$\mathcal{M}(*, *, *)$], [$\mathcal{M}_2(*, *, *, *)$], [$\mathcal{M}^*(*, *, *)$], [macro], [$\mathrm{s}_0$], [**zip**(*, *)], [$\mathbf{assoc}_1(*, *, *)$], [$(*)^{\mathbf{P}}$], [self], [[$* \stackrel{..}{=} *$]], [[$* \doteq *$]], [[$* \stackrel{\prime}{\doteq} *$]], [[$* \stackrel{\mathrm{pyk}}{=} *$]], [[$* \stackrel{\mathrm{tex}}{=} *$]], [[$* \stackrel{\mathrm{name}}{=} *$]], [**Priority table**[*]], [$\tilde{\mathcal{M}}_1$], [$\tilde{\mathcal{M}}_2(*)$], [$\tilde{\mathcal{M}}_3(*)$], [$\tilde{\mathcal{M}}_4(*, *, *, *)$], [$\tilde{\mathcal{M}}(*, *, *)$], [$\tilde{\mathcal{Q}}(*, *, *)$], [$\tilde{\mathcal{Q}}_2(*, *, *)$], [$\tilde{\mathcal{Q}}_3(*, *, *, *)$], [$\tilde{\mathcal{Q}}^*(*, *, *)$], [(*)], [(*)], [display(*)], [statement(*)], [$[*]^{\cdot}$], [$[*]^{-}$], [**aspect**(*, *)], [**aspect**(*, *, *)], [$\langle * \rangle$], [$\mathbf{tuple}_1(*)$], [$\mathbf{tuple}_2(*)$], [$\mathrm{let}_2(*, *)$], [$\mathrm{let}_1(*, *)$], [[$* \stackrel{\mathrm{claim}}{=} *$]], [checker], [**check**(*, *)], [$\mathbf{check}_2(*, *, *)$], [$\mathbf{check}_3(*, *, *)$], [$\mathbf{check}^*(*, *)$], [$\mathbf{check}^*_2(*, *, *)$], [$[*]^{\cdot}$], [$[*]^{-}$], [$[*]^{\circ}$], [msg], [[$* \stackrel{\mathrm{msg}}{=} *$]], [<stmt>], [stmt], [[$* \stackrel{\mathrm{stmt}}{=} *$]], [HeadNil′], [HeadPair′], [Transitivity′], [$\perp\!\!\!\perp$], [Contra′], [T'_{E}], [L_1], [$\underline{*}$], [$\mathcal{A}$], [$\mathcal{B}$], [$\mathcal{C}$], [$\mathcal{D}$], [$\mathcal{E}$], [$\mathcal{F}$], [$\mathcal{G}$], [$\mathcal{H}$], [$\mathcal{I}$], [$\mathcal{J}$], [$\mathcal{K}$], [$\mathcal{L}$], [$\mathcal{M}$], [$\mathcal{N}$], [$\mathcal{O}$], [$\mathcal{P}$], [$\mathcal{Q}$], [$\mathcal{R}$], [$\mathcal{S}$], [$\mathcal{T}$], [$\mathcal{U}$], [$\mathcal{V}$], [$\mathcal{W}$], [$\mathcal{X}$], [$\mathcal{Y}$], [$\mathcal{Z}$], [$\langle * \mid * := * \rangle$], [$\langle^* * \mid * := * \rangle$], [$\emptyset$], [Remainder], [$(*)^{\mathbf{V}}$], [intro(*, *, *, *)], [intro(*, *, *)], [error(*, *)], [$\mathrm{error}_2(*, *)$], [proof(*, *, *)], [$\mathrm{proof}_2(*, *)$], [$\mathcal{S}(*, *)$], [$\mathcal{S}^{\mathrm{I}}(*, *)$], [$\mathcal{S}^{\rhd}(*, *)$], [$\mathcal{S}^{\rhd}_1(*, *, *)$], [$\mathcal{S}^{\mathrm{E}}(*, *)$], [$\mathcal{S}^{\mathrm{E}}_1(*, *, *)$], [$\mathcal{S}^{+}(*, *)$], [$\mathcal{S}^{+}_1(*, *, *)$], [$\mathcal{S}^{-}(*, *)$], [$\mathcal{S}^{-}_1(*, *, *)$], [$\mathcal{S}^{*}(*, *)$], [$\mathcal{S}^{*}_1(*, *, *)$], [$\mathcal{S}^{*}_2(*, *, *, *)$], [$\mathcal{S}^{@}(*, *)$], [$\mathcal{S}^{@}_1(*, *, *)$], [$\mathcal{S}^{\vdash}(*, *)$], [$\mathcal{S}^{\vdash}_1(*, *, *, *)$], [$\mathcal{S}^{\Vdash}(*, *)$], [$\mathcal{S}^{\Vdash}_1(*, *, *, *)$], [$\mathcal{S}^{\mathrm{i.e.}}(*, *)$], [$\mathcal{S}^{\mathrm{i.e.}}_1(*, *, *, *)$], [$\mathcal{S}^{\mathrm{i.e.}}_2(*, *, *, *, *)$], [$\mathcal{S}^{\forall}(*, *)$], [$\mathcal{S}^{\forall}_1(*, *, *, *)$], [$\mathcal{S}^{;}(*, *)$], [$\mathcal{S}^{;}_1(*, *, *)$], [$\mathcal{S}^{;}_2(*, *, *, *)$], [$\mathcal{T}(*)$], [claims(*, *, *)], [$\mathrm{claims}_2(*, *, *)$], [<proof>], [proof], [[**Lemma** *: *]], [[**Proof of** *: *]], [[* **lemma** *: *]], [[* **antilemma** *: *]], [[* **rule** *: *]], [[* **antirule** *: *]], [verifier], [$\mathcal{V}_1(*)$], [$\mathcal{V}_2(*, *)$], [$\mathcal{V}_3(*, *, *, *)$], [$\mathcal{V}_4(*, *)$], [$\mathcal{V}_5(*, *, *, *)$], [$\mathcal{V}_6(*, *, *, *)$], [$\mathcal{V}_7(*, *, *, *)$], [Cut(*, *)], [$\mathrm{Head}_\oplus(*)$], [$\mathrm{Tail}_\oplus(*)$], [$\mathrm{rule}_1(*, *)$], [rule(*, *)], [Rule tactic], [Plus(*, *)], [[**Theory** *]], [$\mathrm{theory}_2(*, *)$], [$\mathrm{theory}_3(*, *)$], [$\mathrm{theory}_4(*, *, *)$], [HeadNil″], [HeadPair″], [Transitivity″], [Contra″], [HeadNil], [HeadPair], [Transitivity], [Contra], [T_{E}], [ragged right], [ragged right expansion], [parm(*, *, *)], [parm*(*, *, *)], [inst(*, *)], [inst*(*, *)], [occur(*, *, *)], [occur*(*, *, *)], [unify(* = *, *)], [unify*(* = *, *)], [$\mathrm{unify}_2(* = *, *)$], [$\mathrm{L}_{\mathrm{a}}$], [$\mathrm{L}_{\mathrm{b}}$], [$\mathrm{L}_{\mathrm{c}}$], [$\mathrm{L}_{\mathrm{d}}$], [$\mathrm{L}_{\mathrm{e}}$], [$\mathrm{L}_{\mathrm{f}}$], [$\mathrm{L}_{\mathrm{g}}$], [$\mathrm{L}_{\mathrm{h}}$], [$\mathrm{L}_{\mathrm{i}}$], [$\mathrm{L}_{\mathrm{j}}$], [$\mathrm{L}_{\mathrm{k}}$], [$\mathrm{L}_{\mathrm{l}}$], [$\mathrm{L}_{\mathrm{m}}$], [$\mathrm{L}_{\mathrm{n}}$], [$\mathrm{L}_{\mathrm{o}}$], [$\mathrm{L}_{\mathrm{p}}$], [$\mathrm{L}_{\mathrm{q}}$], [$\mathrm{L}_{\mathrm{r}}$], [$\mathrm{L}_{\mathrm{s}}$], [$\mathrm{L}_{\mathrm{t}}$], [$\mathrm{L}_{\mathrm{u}}$], [$\mathrm{L}_{\mathrm{v}}$], [$\mathrm{L}_{\mathrm{w}}$], [$\mathrm{L}_{\mathrm{x}}$], [$\mathrm{L}_{\mathrm{y}}$], [$\mathrm{L}_{\mathrm{z}}$], [$\mathrm{L}_{\mathrm{A}}$], [$\mathrm{L}_{\mathrm{B}}$], [$\mathrm{L}_{\mathrm{C}}$], [$\mathrm{L}_{\mathrm{D}}$], [$\mathrm{L}_{\mathrm{E}}$], [$\mathrm{L}_{\mathrm{F}}$], [$\mathrm{L}_{\mathrm{G}}$], [$\mathrm{L}_{\mathrm{H}}$], [$\mathrm{L}_{\mathrm{I}}$], [$\mathrm{L}_{\mathrm{J}}$], [$\mathrm{L}_{\mathrm{K}}$], [$\mathrm{L}_{\mathrm{L}}$], [$\mathrm{L}_{\mathrm{M}}$], [$\mathrm{L}_{\mathrm{N}}$], [$\mathrm{L}_{\mathrm{O}}$], [$\mathrm{L}_{\mathrm{P}}$], [$\mathrm{L}_{\mathrm{Q}}$], [$\mathrm{L}_{\mathrm{R}}$], [$\mathrm{L}_{\mathrm{S}}$], [$\mathrm{L}_{\mathrm{T}}$], [$\mathrm{L}_{\mathrm{U}}$], [$\mathrm{L}_{\mathrm{V}}$], [$\mathrm{L}_{\mathrm{W}}$], [$\mathrm{L}_{\mathrm{X}}$], [$\mathrm{L}_{\mathrm{Y}}$], [$\mathrm{L}_{\mathrm{Z}}$], [$\mathrm{L}_{?}$], [Reflexivity], [$\mathrm{Reflexivity}_1$], [Commutativity], [$\mathrm{Commutativity}_1$], [<tactic>], [tactic], [[$* \stackrel{\mathrm{tactic}}{=} *$]], [$\mathcal{P}(*, *, *)$], [$\mathcal{P}^*(*, *, *)$], [$\mathrm{p}_0$], [$\mathrm{conclude}_1(*, *)$], [$\mathrm{conclude}_2(*, *, *)$], [$\mathrm{conclude}_3(*, *, *, *)$], [$\mathrm{conclude}_4(*, *)$], [check], [[$* \stackrel{\circ}{=} *$]], [RootVisible(*)], [A], [R], [C], [T], [L], [{*}], [$\overline{*}$], [a], [b], [c], [d], [e], [f], [g], [h], [i], [j], [k], [l], [m], [n], [o], [p], [q], [r], [s], [t], [u], [v], [w], [x], [y], [z], [$\langle * \equiv * \mid * := * \rangle$], [$\langle * \equiv^0 * \mid * := * \rangle$], [$\langle * \equiv^1 * \mid * := * \rangle$], [$\langle * \equiv^* * \mid * := * \rangle$], [Ded(*, *)], [$\mathrm{Ded}_0(*, *)$], [$\mathrm{Ded}_1(*, *, *)$], [$\mathrm{Ded}_2(*, *, *)$], [$\mathrm{Ded}_3(*, *, *, *)$], [$\mathrm{Ded}_4(*, *, *, *)$], [$\mathrm{Ded}^*_4(*, *, *, *)$], [$\mathrm{Ded}_5(*, *, *)$], [$\mathrm{Ded}_6(*, *, *, *)$],

$[\mathrm{Ded}^*_6(*,*,*,*)]$, $[\mathrm{Ded}_7(*)]$, $[\mathrm{Ded}_8(*,*)]$, $[\mathrm{Ded}^*_8(*,*)]$, [S], [Neg], [MP], [Gen], [Ded], [S1], [S2], [S3], [S4], [S5], [S6], [S7], [S8], [S9], [Repetition], [A1′], [A2′], [A4′], [A5′], [Prop 3.2a], [Prop 3.2b], [Prop 3.2c], [Prop 3.2d], [Prop 3.2e_1], [Prop 3.2e_2], [Prop 3.2e], [Prop 3.2f_1], [Prop 3.2f_2], [Prop 3.2f], [Prop 3.2g_1], [Prop 3.2g_2], [Prop 3.2g], [Prop 3.2h_1], [Prop 3.2h_2], [Prop 3.2h], $[\mathrm{Block}_1(*,*,*)]$, $[\mathrm{Block}_2(*)]$, [kvanti], [UniqueMember], [UniqueMember(Type)], [SameSeries], [A4], [SameMember], [Qclosed(Addition)], [Qclosed(Multiplication)], [FromCartProd(1)], [1rule fromCartProd(2)], [constantRationalSeries(∗)], [cartProd(∗)], [Power(∗)], [binaryUnion(∗, ∗)], [SetOfRationalSeries], [IsSubset(∗, ∗)], [(p∗, ∗)], [(s∗)], [(· · ·)], [`Objekt-var`], [`Ex-var`], [`Ph-var`], [`Værdi`], [`Variabel`], [Op(∗)], [Op(∗, ∗)], $[* \mathrel{\ddot{=}\!\!=} *]$, [ContainsEmpty(∗)], [Nat(∗)], $[\mathrm{Dedu}(*,*)]$, $[\mathrm{Dedu}_0(*,*)]$, $[\mathrm{Dedu}_\mathrm{s}(*,*,*)]$, $[\mathrm{Dedu}_1(*,*,*)]$, $[\mathrm{Dedu}_2(*,*,*)]$, $[\mathrm{Dedu}_3(*,*,*,*)]$, $[\mathrm{Dedu}_4(*,*,*,*)]$, $[\mathrm{Dedu}^*_4(*,*,*,*)]$, $[\mathrm{Dedu}_5(*,*,*)]$, $[\mathrm{Dedu}_6(*,*,*,*)]$, $[\mathrm{Dedu}^*_6(*,*,*,*)]$, $[\mathrm{Dedu}_7(*)]$, $[\mathrm{Dedu}_8(*,*)]$, $[\mathrm{Dedu}^*_8(*,*)]$, $[\mathrm{Ex}_1]$, $[\mathrm{Ex}_2]$, [Ex3], $[\mathrm{Ex}_{10}]$, $[\mathrm{Ex}_{20}]$, $[*_{\mathrm{Ex}}]$, $[*^{\mathrm{Ex}}]$, $[\langle * \equiv * \mid * :== * \rangle_{\mathrm{Ex}}]$, $[\langle * \equiv^0 * \mid * :== * \rangle_{\mathrm{Ex}}]$, $[\langle * \equiv^1 * \mid * :== * \rangle_{\mathrm{Ex}}]$, $[\langle * \equiv^* * \mid * :== * \rangle_{\mathrm{Ex}}]$, $[\mathrm{ph}_1]$, $[\mathrm{ph}_2]$, $[\mathrm{ph}_3]$, $[*_{\mathrm{Ph}}]$, $[*^{\mathrm{Ph}}]$, $[\langle * \equiv * \mid * :== * \rangle_{\mathrm{Ph}}]$, $[\langle * \equiv^0 * \mid * :== * \rangle_{\mathrm{Ph}}]$, $[\langle * \equiv^1 * \mid * :== * \rangle_{\mathrm{Ph}}]$, $[\langle * \equiv^* * \mid * :== * \rangle_{\mathrm{Ph}}]$, $[\langle * \equiv * \mid * :== * \rangle_{\mathrm{Me}}]$, $[\langle * \equiv^1 * \mid * :== * \rangle_{\mathrm{Me}}]$, $[\langle * \equiv^* * \mid * :== * \rangle_{\mathrm{Me}}]$, [bs], [OBS], $[\mathcal{BS}]$, [∅], [SystemQ], [MP], [Gen], [Repetition], [Neg], [Ded], [ExistIntro], [Extensionality], [∅def], [PairDef], [UnionDef], [PowerDef], [SeparationDef], [AddDoubleNeg], [RemoveDoubleNeg], [AndCommutativity], [AutoImply], [Contrapositive], [FirstConjunct], [SecondConjunct], [FromContradiction], [FromDisjuncts], [IffCommutativity], [IffFirst], [IffSecond], [ImplyTransitivity], [JoinConjuncts], [MP2], [MP3], [MP4], [MP5], [MT], [NegativeMT], [Technicality], [Weakening], [WeakenOr1], [WeakenOr2], [Formula2Pair], [Pair2Formula], [Formula2Union], [Union2Formula], [Formula2Sep], [Sep2Formula], [Formula2Power], [SubsetInPower], [HelperPowerIsSub], [PowerIsSub], [(Switch)HelperPowerIsSub], [(Switch)PowerIsSub], [ToSetEquality], [HelperToSetEquality(t)], [ToSetEquality(t)], [HelperFromSetEquality], [FromSetEquality], [HelperReflexivity], [Reflexivity], [HelperSymmetry], [Symmetry], [HelperTransitivity], [Transitivity], [ERisReflexive], [ERisSymmetric], [ERisTransitive], [∅isSubset], [HelperMemberNot∅], [MemberNot∅], [HelperUnique∅], [Unique∅], [==Reflexivity], [==Symmetry], [Helper==Transitivity], [==Transitivity], [HelperTransferNotEq], [TransferNotEq], [HelperPairSubset], [Helper(2)PairSubset], [PairSubset], [SamePair], [SameSingleton], [UnionSubset], [SameUnion], [SeparationSubset], [SameSeparation], [SameBinaryUnion], [IntersectionSubset], [SameIntersection], [AutoMember], [HelperEqSysNot∅], [EqSysNot∅], [HelperEqSubset], [EqSubset], [HelperEqNecessary], [EqNecessary], [HelperNoneEqNecessary], [Helper(2)NoneEqNecessary], [NoneEqNecessary], [EqClassIsSubset], [EqClassesAreDisjoint], [AllDisjoint], [AllDisjointImply], [BSsubset], [Union(BS/R)subset], [UnionIdentity], [EqSysIsPartition], [(x1)], [(x2)], [(y1)], [(y2)], [(v1)], [(v2)], [(v3)], [(v4)], [(v2n)], [(m1)], [(m2)], [(n1)], [(n2)], [(n3)], $[(\epsilon)]$, $[(\epsilon)_1]$, $[(\epsilon 2)]$, [(fep)], [(fx)], [(fy)], [(fz)], [(fu)], [(fv)], [(fw)], [(rx)], [(ry)], [(rz)], [(ru)], [(sx)], [(sx1)], [(sy)], [(sy1)], [(sz)], [(sz1)], [(su)], [(su1)], [(fxs)], [(fys)], [(crs1)], [(f1)], [(f2)], [(f3)], [(f4)], [(op1)], [(op2)], [(r1)], [(s1)], [(s2)], [X_1], [X_2], [Y_1], [Y_2], [V_1], [V_2], [V_3], [V_4], [V_{2n}], [M_1], [M_2], [N_1], [N_2], [N_3], [ϵ], [ϵ1], [ϵ2], [FX], [FY], [FZ], [FU], [FV], [FW], [FEP], [RX], [RY], [RZ], [RU], [(SX)], [(SX1)], [(SY)], [(SY1)], [(SZ)], [(SZ1)], [(SU)], [(SU1)], [FXS], [FYS], [(F1)], [(F2)], [(F3)], [(F4)], [(OP1)], [(OP2)], [(R1)], [(S1)], [(S2)], [(EPob)], [(CRS1ob)], [(F1ob)], [(F2ob)], [(F3ob)], [(F4ob)], [(N1ob)], [(N2ob)], [(OP1ob)], [(OP2ob)], [(R1ob)], [(S1ob)], [(S2ob)], [ph_4], [ph_5], [ph_6], [NAT], [RATIONAL$_{\mathrm{S}}$ERIES], [SERIES], [SetOfReals], [SetOfFxs], [N], [Q], [X], [xs], [xaF], [ysF], [us], [usFoelge], [0], [1], [(−1)], [2], [3], [1/2], [1/3], [2/3], [0f], [1f], [00], [01], [(− − 01)], [02], [01//02], [PlusAssociativity(R)], [PlusAssociativity(R)XX], [Plus0(R)], [Negative(R)], [Times1(R)], [lessAddition(R)], [PlusCommutativity(R)], [LeqAntisymmetry(R)], [LeqTransitivity(R)], [leqAddition(R)], [Distribution(R)], [A4(Axiom)], [InductionAxiom], [EqualityAxiom], [EqLeqAxiom], [EqAdditionAxiom], [EqMultiplicationAxiom], [QisClosed(Reciprocal)(Imply)], [QisClosed(Reciprocal)], [QisClosed(Negative)(Imply)], [QisClosed(Negative)], [leqReflexivity], [leqAntisymmetryAxiom], [leqTransitivityAxiom], [leqTotality], [leqAdditionAxiom], [leqMultiplicationAxiom], [plusAssociativity], [plusCommutativity], [Negative], [plus0], [timesAssociativity], [timesCommutativity], [ReciprocalAxiom], [times1], [Distribution], [0not1], [lemma eqLeq(R)], [TimesAssociativity(R)], [TimesCommutativity(R)], [(Adgic)SameR], [Separation2formula(1)], [Separation2formula(2)], [Cauchy], [PlusF], [ReciprocalF], [From ==], [To ==], [FromInR], [PlusR(Sym)], [ReciprocalR(Axiom)], [LessMinus1(N)], [Nonnegative(N)], [US0], [NextXS(UpperBound)], [NextXS(NoUpperBound)], [NextUS(UpperBound)], [NextUS(NoUpperBound)], [ExpZero], [ExpPositive], [ExpZero(R)], [ExpPositive(R)], [BSzero], [BSpositive], [UStelescope(Zero)], [UStelescope(Positive)], [EqAddition(R)], [FromLimit], [ToUpperBound], [FromUpperBound], [USisUpperBound], [0not1(R)], [ExpUnbounded(R)], [FromLeq(Advanced)(N)], [FromLeastUpperBound], [ToLeastUpperBound], [XSisNotUpperBound], [ysFGreater], [ysFLess], [SmallInverse], [NatType], [RationalType], [SeriesType], [Max], [Numerical], [NumericalF], [MemberOfSeries(Imply)], [JoinConjuncts(2conditions)], [prop lemma imply negation], [TND], [FromNegatedImply], [ToNegatedImply], [FromNegated(2 ∗ Imply)], [FromNegatedAnd], [FromNegatedOr], [ToNegatedOr], [FromNegations], [From3Disjuncts], [From2 ∗ 2Disjuncts], [NegateDisjunct1], [NegateDisjunct2], [ExpandDisjuncts], [SENC1], [SENC2], [LessLeq(R)], [MemberOfSeries], [memberOfSeries(Type)], [ToNegatedAnd(1)], [UniqueNegative], [DoubleMinus], [MinusNegated], [eqReflexivity], [eqSymmetry], [eqTransitivity], [eqTransitivity4], [eqTransitivity5], [eqTransitivity6], [AddEquations], [SubtractEquations], [SubtractEquationsLeft], [MultiplyEquations], [EqNegated], [PositiveToRight(Eq)], [PositiveToLeft(Eq)(1term)], [NegativeToLeft(Eq)], [NonreciprocalToRight(Eq)(1term)], [PlusAssociativity(4terms)], [LessNeq], [NeqSymmetry], [NeqNegated], [SubNeqRight], [SubNeqLeft], [NegativeToRight(Neq)(1term)], [NeqAddition], [NeqMultiplication], [NonzeroProduct(2)], [UStelescope(+1)], [TelescopeBound(Base)], [TelescopeBound(Indu)], [TelescopeBound], [IntervalSize(Base)], [IntervalSize(Indu)], [IntervalSize], [XS < US], [lemma USdecreasing(+1)], [CloseUS], [CloseUS(n + 1)], [AllNegated(Imply)], [ExistNegated(Imply)], [IntroExist(Helper)], [IntroExist], [ExistMP], [ExistMP2], [TwiceExistMP], [TwiceExistMP2], [EAE − MP], [AddAll], [AddExist(Helper1)], [AddExist(Helper2)], [AddExist], [AddExist(SimpleAnt)], [AddExist(Simple)], [AddEAE], [AEA − negated], [EEA − negated], [Induction], [leqAntisymmetry], [leqTransitivity], [leqAddition], [leqMultiplication], [Reciprocal], [Equality], [eqLeq], [eqAddition], [eqMultiplication], [LeqMultiplicationLeft], [LeqLessEq], [LessLeq], [FromLeqGeq], [subLeqRight], [subLeqLeft], [Leq + 1], [PositiveToRight(Leq)], [PositiveToRight(Leq)(1term)], [lemma negativeToRight(Leq)], [PositiveToLeft(Leq)], [negativeToLeft(Leq)], [negativeToLeft(Leq)(1term)], [LeqAdditionLeft], [leqSubtraction], [leqSubtractionLeft], [thirdGeq], [LeqNegated], [AddEquations(Leq)], [MultiplyEquations(Leq)], [ThirdGeqSeries], [LeqNeqLess], [FromLess], [ToLess], [fromNotLess], [toNotLess], [NegativeLessPositive], [leqLessTransitivity], [LessLeqTransitivity], [LessTransitivity], [LessTotality], [SubLessRight], [SubLessLeft], [SwitchTerms(x < y − z)], [SwitchTerms(x − y < z)], [LessAddition], [LessAdditionLeft], [LessMultiplication], [LessMultiplicationLeft], [LessDivision], [PositiveToRight(Less)], [PositiveToLeft(Less)], [NegativeToLeft(Less)], [NegativeToRight(Less)], [AddEquations(Less)], [AddEquations(LeqLess)], [reciprocalToLeft(Less)], [LessNegated], [PositiveNonzero], [PositiveNegated], [NonpositiveNegated], [NegativeNegated], [NonnegativeNegated], [PositiveHalved], [PositiveInverted], [NonnegativeNumerical], [NegativeNumerical], [PositiveNumerical], [lemma nonpositiveNumerical], [|0| = 0], [0 <= |x|], [x <= |x|], [FromPositiveNumerical], [SameNumerical], [SignNumerical(+)], [SignNumerical], [ToNumericalLess], [FromNumericalGreater], [NumericalDifference], [NumericalDifferenceLess(Helper)], [NumericalDifferenceLess], [SplitNumericalSumHelper], [splitNumericalSum(++)], [splitNumericalSum(−−)], [splitNumericalSum(+ − small)], [splitNumericalSum(+ − big)], [splitNumericalSum(+−)], [splitNumericalSum(−+)], [splitNumericalSum], [SplitNumericalProduct(++)], [SplitNumericalProduct(+−)], [SplitNumericalProduct], [insertMiddleTerm(Numerical)], [insertTwoMiddleTerms(Numerical)], [Three2twoTerms], [Three2threeTerms], [Three2twoFactors], [Three2threeFactors], [Times(−1)], [Times(−1)Left], [MaxLeq(1)], [MaxLeq(2)], [LessThanMax], [x + y = zBackwards], [x ∗ y = zBackwards], [x = x + (y − y)], [x = x + y − y], [x = x ∗ y ∗ (1/y)], [insertMiddleTerm(Sum)], [insertTwoMiddleTerms(Sum)], [insertMiddleTerm(Difference)], [x ∗ 0 + x = x], [x ∗ 0 = 0], [NonnegativeFactors], [NonzeroFactors], [PositiveFactors], [PlusTimesMinus], [MinusTimesMinus], [(−1) ∗ (−1) + (−1) ∗ 1 = 0], [(−1) ∗ (−1) = 1], [0 < 1Helper], [0 < 1], [0 < 2], [0 < 3], [0 < 1/2], [0 < 1/3], [TwoWholes], [ThreeWholes], [TwoHalves], [ThreeThirds], [−x − y = −(x + y)], [−x ∗ y = −(x ∗ y)], [−0 = 0],

[SFsymmetry], [SFtransitivity], [f2R(Plus)], [f2R(Times)],
[<< TransitivityHelper(Q)], [<< Transitivity], [<<== Reflexivity],
[<<== AntisymmetryHelper(Q)], [FromNot < f(Weak)(Helper)],
[FromNot < f(Weak)], [FromNot < f(Strong)(Helper2)],
[FromNot < f(Strong)(Helper)], [FromNot < f(Strong)],
[fromNotSameF(Strongest)(Helper2)], [fromNotSameF(Strongest)(Helper)],
[fromNotSameF(Strongest)], [ToLess(F)(Helper)], [ToLess(F)], [FromNot <<],
[ToLess(R)], [FromNotSameF(Weak)(Helper)], [FromNotSameF(Weak)],
[FromNotLess(F)], [== Addition], [== AdditionLeft],
[Fpart − Bounded(Base)], [Fpart − Bounded(InduHelper)],
[Fpart − Bounded(Indu)], [Fpart − Bounded], [F − Bounded(Helper)],
[F − Bounded], [SameFmultiplication(Helper)], [SameFmultiplication],
[EqMultiplication(R)], [EqMultiplicationLeft(R)], [x ∗ 0 = 0(F)], [x ∗ 0 = 0(R)],
[LessMultiplication(F)(Helper2)], [LessMultiplication(F)(Helper)],
[LessMultiplication(F)], [LessMultiplication(R)], [LeqMultiplication(R)],
[PlusAssociativity(F)], [Plus0(F)], [PlusCommutativity(F)],
[TimesAssociativity(F)], [Times1f], [Cauchy(2)(Helper)], [Cauchy(2)],
[ReciprocalFnonzero], [(Eventually = f)2sameF(Helper)],
[(Eventually = f)2sameF], [FromNotSameF(Strong)(Helper2)],
[FromNotSameF(Strong)(Helper)], [FromNotSameF(Strong)],
[SameFreciprocal(Helper)], [SameFreciprocal], [From!! ==], [Reciprocal(R)],
[TimesCommutativity(F)], [Distribution(F)], [FromMax(1)], [FromMax(2)],
[ToNegatedAnd], [DistributionOut], [DistributionOutLeft], [DistributionLeft],
[FromNotLess(R)], [CartProdIsRelation], [FromSubset], [SubsetIsRelation],
[ToSeries], [FromSeries], [SeriesSubsetCP], [ValueType], [RemoveOr],
[FromSingleton], [InPair(1)], [InPair(2)], [SameMember(2)], [ToBinaryUnion(1)],
[ToBinaryUnion(2)], [FromOrderedPair(TwoLevels)], [ToCartProd(Helper)],
[ToCartProd], [NonreciprocalToRight(Eq)], [NonreciprocalToLeft(Eq)(1term)],
[SameReciprocal], [CPseparationIsRelation], [OrderedPairEquality],
[ReciprocalIsFunction], [ReciprocalIsTotal], [ReciprocalIsRationalSeries],
[CrsIsRelation], [CrsIsFunction], [CrsIsTotal], [CrsIsSeries], [CrsLookup], [0f],
[1f], [ToSingleton], [FromSameSingleton], [SingletonmembersEqual],
[UnequalsNotInSingleton], [NonsingletonmembersUnequal], [FromOrderedPair],
[FromOrderedPair(1)], [FromOrderedPair(2)], [FromCartProd],
[FromCartProd(1)], [FromCartProd(2)], [sameOrderedPair], [InSeriesHelper],
[InSeries], [To = f(Subset)(Helper)], [To = f(Subset)], [To = f],
[productIsFunction], [productIsTotal], [ProductIsRationalSeries], [TimesF],
[−x + (1/2)x = −(1/2)x], [PositiveTripled], [PositiveDividedBy3], [|x − x| = 0],
[1 < 2], [1/3 < 2/3], [(1/3)x + (1/3)x = (2/3)x], [(2/3)x + (1/3)x = x],
[−x + (2/3)x = −(1/3)x], [−(1/3)x − (1/3)x = −(2/3)x],
[−x + (1/3)x = −(2/3)x], [PreserveLessGreater], [ClosetolessIsLess],
[SubLessLeft(F)], [SubLessLeft(R)], [ClosetogreaterIsGreater],
[SubLessRight(F)], [SubLessRight(R)], [plus0Left], [times1Left],
[EqAdditionLeft], [EqMultiplicationLeft], [PlusF(Sym)], [TimesF(Sym)],
[SameSeries(Gen)], [EqualsSameF], [LeqReflexivity(R)];
Preassociative

[Tester1], [Tester2], [Tester3], [Tester4], [Tester5], [Tester6];
Preassociative
$[*_{\{*\}}]$, [∗/indexintro(∗, ∗, ∗, ∗)], [∗/intro(∗, ∗, ∗)], [∗/bothintro(∗, ∗, ∗, ∗, ∗)], [∗/nameintro(∗, ∗, ∗, ∗)], $[*']$, [∗[∗]], [∗[∗→∗]], [∗[∗⇒∗]], [∗0], [∗1], [0b], [∗-color(∗)], $[*\text{-color}^*(*)]$, $[*^{\mathrm{H}}]$, $[*^{\mathrm{T}}]$, $[*^{\mathrm{U}}]$, $[*^{\mathrm{h}}]$, $[*^{\mathrm{t}}]$, $[*^{\mathrm{s}}]$, $[*^{\mathrm{c}}]$, $[*^{\mathrm{d}}]$, $[*^{\mathrm{a}}]$, $[*^{\mathrm{C}}]$, $[*^{\mathrm{M}}]$, $[*^{\mathrm{B}}]$, $[*^{\mathrm{r}}]$, $[*^{\mathrm{i}}]$, $[*^{\mathrm{d}}]$, $[*^{\mathrm{R}}]$, $[*^{0}]$, $[*^{1}]$, $[*^{2}]$, $[*^{3}]$, $[*^{4}]$, $[*^{5}]$, $[*^{6}]$, $[*^{7}]$, $[*^{8}]$, $[*^{9}]$, $[*^{\mathrm{E}}]$, $[*^{\mathcal{V}}]$, $[*^{\mathcal{C}}]$, $[*^{\mathcal{C}^*}]$, $[*^{\mathrm{hide}}]$;
Preassociative
[“ ∗ ”], [], $[(*)^{\mathbf{t}}]$, [string(∗) + ∗], [string(∗) ++ ∗], [
∗], [∗], [!∗], ["∗], [#∗], [$∗], [%∗], [&∗], [’∗], [(∗], [)∗], [∗∗], [+∗], [, ∗], [-∗], [.∗], [/∗], [0∗], [1∗], [2∗], [3∗], [4∗], [5∗], [6∗], [7∗], [8∗], [9∗], [:∗], [; ∗], [<∗], [=∗], [>∗], [?∗], [@∗], [A∗], [B∗], [C∗], [D∗], [E∗], [F∗], [G∗], [H∗], [I∗], [J∗], [K∗], [L∗], [M∗], [N∗], [O∗], [P∗], [Q∗], [R∗], [S∗], [T∗], [U∗], [V∗], [W∗], [X∗], [Y∗], [Z∗], [[∗], [\∗], []∗], [ˆ∗], [_∗], [‘∗], [a∗], [b∗], [c∗], [d∗], [e∗], [f∗], [g∗], [h∗], [i∗], [j∗], [k∗], [l∗], [m∗], [n∗], [o∗], [p∗], [q∗], [r∗], [s∗], [t∗], [u∗], [v∗], [w∗], [x∗], [y∗], [z∗], [{∗], [|∗], [}∗], [˜∗], [**Preassociative** ∗; ∗], [**Postassociative** ∗; ∗], [[∗], ∗], [priority ∗ end], [newline ∗], [macro newline ∗], [MacroIndent(∗)];
Preassociative
[∗ ’ ∗], [∗ ‘ ∗];
Preassociative
[∗(exp)∗];
Preassociative
$[*']$, [R(∗)], [− − R(∗)], [rec∗];
Preassociative
[∗/∗], [∗ ∩ ∗], [∗[∗]];
Preassociative
[∪∗], [∗ ∪ ∗], [P(∗)];
Preassociative
[{∗}], [StateExpand(∗, ∗, ∗)], [extractSeries(∗)], [SetOfSeries(∗)], [− − Macro(∗)], [ExpandList(∗, ∗, ∗)], [∗ ∗ Macro(∗)], [+ + Macro(∗)], [<< Macro(∗)], [||Macro(∗)], [01//Macro(∗)], [UB(∗, ∗)], [LUB(∗, ∗)], [BS(∗, ∗)], [UStelescope(∗, ∗)], [(∗)], [|f ∗ |], [|r ∗ |], [Limit(∗, ∗)], [Union(∗)], [IsOrderedPair(∗, ∗, ∗)], [IsRelation(∗, ∗, ∗)], [isFunction(∗, ∗, ∗)], [IsSeries(∗, ∗)], [IsNatural(∗, ∗)], [OrderedPair(∗, ∗)], [TypeNat(∗)], [TypeNat0(∗)], [TypeRational(∗)], [TypeRational0(∗)], [TypeSeries(∗, ∗)], [Typeseries0(∗, ∗)];
Preassociative
[{∗, ∗}], [⟨∗, ∗⟩], [(−u∗)], $[-_{\mathrm{f}}*]$, [(− − ∗)], [1f/∗], [01//temp∗];
Preassociative
[∗(∗, ∗)], [ReflRel(∗, ∗)], [SymRel(∗, ∗)], [TransRel(∗, ∗)], [EqRel(∗, ∗)], $[[* \in *]_*]$, [Partition(∗, ∗)];
Preassociative
$[* \cdot *]$, $[* \cdot_0 *]$, [(∗ ∗ ∗)], $[* *_{\mathrm{f}} *]$, [∗ ∗ ∗∗];
Preassociative
[∗ + ∗], $[* +_0 *]$, $[* +_1 *]$, [∗ − ∗], $[* -_0 *]$, $[* -_1 *]$, [(∗ + ∗)], [(∗ − ∗)], $[* +_{\mathrm{f}} *]$, $[* -_{\mathrm{f}} *]$, [∗ + +∗], [R(∗) − −R(∗)];
Preassociative

$[* \in *]$;
Preassociative
$[| * |], [\text{if}(*,*,*)], [\text{Max}(*,*)], [\text{Max}(*,*)]$;
Preassociative
$[* = *], [* \neq *], [* <= *], [* < *], [* <_{\text{f}} *], [* \leq_{\text{f}} *], [\text{SF}(*,*)], [* == *],$
$[*!! == *], [* << *], [* <<== *]$;
Preassociative
$[* \cup \{*\}], [* \cup *], [* \backslash \{*\}]$;
Postassociative
$[* \therefore *], [* \underline{\therefore} *], [* \underline{::} *], [* \underline{+2*} *], [* :: *], [* +2* *]$;
Postassociative
$[*, *]$;
Preassociative
$[* \stackrel{\text{B}}{\approx} *], [* \stackrel{\text{D}}{\approx} *], [* \stackrel{\text{C}}{\approx} *], [* \stackrel{\text{P}}{\approx} *], [* \approx *], [* = *], [* \stackrel{+}{\rightarrow} *], [* \stackrel{\text{t}}{=} *], [* \stackrel{\text{t}^*}{=} *], [* \stackrel{\text{r}}{=} *],$
$[* \in_{\text{t}} *], [* \subseteq_{\text{T}} *], [* \stackrel{\text{T}}{=} *], [* \stackrel{\text{s}}{=} *], [* \text{ free in } *], [* \text{ free in}^* *], [* \text{ free for } * \text{ in } *],$
$[* \text{ free for}^* * \text{ in } *], [* \in_{\text{c}} *], [* < *], [* <' *], [* \leq' *], [* = *], [* \neq *], [*^{\text{var}}],$
$[*\#^0*], [*\#^1*], [*\#^**], [* {=}{=} *], [* \subseteq *]$;
Preassociative
$[\neg *], [\dot{\neg}(*)\text{n}], [* \notin *], [* \neq *]$;
Preassociative
$[* \wedge *], [* \ddot{\wedge} *], [* \tilde{\wedge} *], [* \wedge_{\text{c}} *], [* \dot{\wedge} *]$;
Preassociative
$[* \vee *], [* \parallel *], [* \ddot{\vee} *]$;
Postassociative
$[* \dot{\vee} *]$;
Preassociative
$[\exists *\colon *], [\forall *\colon *], [\forall_{\text{obj}} *\colon *], [\exists *\colon *]$;
Postassociative
$[* \stackrel{..}{\Rightarrow} *], [* \Rightarrow *], [* \Leftrightarrow *], [* \dot{\Leftrightarrow} *]$;
Preassociative
$[\{\text{ph} \in * \mid *\}]$;
Postassociative
$[* : *], [* \text{ spy } *], [*!*]$;
Preassociative
$[* \left\{ \begin{array}{c} * \\ * \end{array} \right.]$;
Preassociative
$[\lambda * .*], [\Lambda * .*], [\Lambda *], [\textbf{if } * \textbf{ then } * \textbf{ else } *], [\textbf{let } * = * \textbf{ in } *], [\textbf{let } * \stackrel{..}{=} * \text{ in } *]$;
Preassociative
$[*\#*]$;
Preassociative
$[*^{\text{I}}], [*^{\triangleright}], [*^{\text{V}}], [*^{+}], [*^{-}], [*^{*}]$;
Preassociative
$[* @ *], [* \triangleright *], [* \triangleright\!\!\triangleright *], [* \gg *], [* \trianglerighteq *]$;
Postassociative

$[* \vdash *], [* \Vdash *], [* \text{ i.e. } *];$
Preassociative
$[\forall *\colon *], [\Pi *\colon *];$
Postassociative
$[* \oplus *];$
Postassociative
$[*; *];$
Preassociative
$[* \text{ proves } *];$
Preassociative
$[* \textbf{ proof of } * : *], [\text{Line} * : * \gg *; *], [\text{Last line} * \gg * \Box],$
$[\text{Line} * : \text{Premise} \gg *; *], [\text{Line} * : \text{Side-condition} \gg *; *], [\text{Arbitrary} \gg *; *],$
$[\text{Local} \gg * = *; *], [\text{Begin} *; * : \text{End}; *], [\text{Last block line} * \gg * ;],$
$[\text{Arbitrary} \gg *; *];$
Postassociative
$[* \mid *];$
Postassociative
$[* , *], [*[*]*];$
Preassociative
$[* \& *];$
Preassociative
[**], [* linebreak[4] *], [**];]

A Pyk definitioner

$[\text{ToNegatedAnd}(1) \overset{\text{pyk}}{\to}$ “prop lemma to negated and(1)”$]$

$[\text{UniqueNegative} \overset{\text{pyk}}{\to}$ “lemma uniqueNegative”$]$

$[\text{DoubleMinus} \overset{\text{pyk}}{\to}$ “lemma doubleMinus”$]$

$[\text{MinusNegated} \overset{\text{pyk}}{\to}$ “lemma minusNegated”$]$

$[\text{eqReflexivity} \overset{\text{pyk}}{\to}$ “lemma eqReflexivity”$]$

$[\text{eqSymmetry} \overset{\text{pyk}}{\to}$ “lemma eqSymmetry”$]$

$[\text{eqTransitivity} \overset{\text{pyk}}{\to}$ “lemma eqTransitivity”$]$

$[\text{eqTransitivity4} \overset{\text{pyk}}{\to}$ “lemma eqTransitivity4”$]$

$[\text{eqTransitivity5} \overset{\text{pyk}}{\to}$ “lemma eqTransitivity5”$]$

$[\text{eqTransitivity6} \overset{\text{pyk}}{\to}$ “lemma eqTransitivity6”$]$

$[\text{AddEquations} \overset{\text{pyk}}{\to}$ “lemma addEquations”$]$

$[\text{SubtractEquations} \overset{\text{pyk}}{\to}$ “lemma subtractEquations”$]$

$[\text{SubtractEquationsLeft} \overset{\text{pyk}}{\to}$ “lemma subtractEquationsLeft”$]$

$[\text{MultiplyEquations} \overset{\text{pyk}}{\to}$ “lemma multiplyEquations”$]$

$[\text{EqNegated} \overset{\text{pyk}}{\to}$ “lemma eqNegated”$]$

[PositiveToRight(Eq) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma positiveToRight(Eq)”]

[PositiveToLeft(Eq)(1term) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma positiveToLeft(Eq)(1 term)”]

[NegativeToLeft(Eq) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma negativeToLeft(Eq)”]

[NonreciprocalToRight(Eq)(1term) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma nonreciprocalToRight(Eq)(1 term)”]

[PlusAssociativity(4terms) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma plusAssociativity(4 terms)”]

[LessNeq $\stackrel{\text{pyk}}{\rightarrow}$ “lemma lessNeq”]

[NeqSymmetry $\stackrel{\text{pyk}}{\rightarrow}$ “lemma neqSymmetry”]

[NeqNegated $\stackrel{\text{pyk}}{\rightarrow}$ “lemma neqNegated”]

[SubNeqRight $\stackrel{\text{pyk}}{\rightarrow}$ “lemma subNeqRight”]

[SubNeqLeft $\stackrel{\text{pyk}}{\rightarrow}$ “lemma subNeqLeft”]

[NegativeToRight(Neq)(1term) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma negativeToRight(Neq)(1 term)”]

[NeqAddition $\stackrel{\text{pyk}}{\rightarrow}$ “lemma neqAddition”]

[NeqMultiplication $\stackrel{\text{pyk}}{\rightarrow}$ “lemma neqMultiplication”]

[NonzeroProduct(2) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma nonzeroProduct(2)”]

[UStelescope(+1) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma UStelescope(+1)”]

[TelescopeBound(Base) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma telescopeBound base”]

[TelescopeBound(Indu) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma telescopeBound indu”]

[TelescopeBound $\stackrel{\text{pyk}}{\rightarrow}$ “lemma telescopeBound”]

[IntervalSize(Base) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma intervalSize base”]

[IntervalSize(Indu) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma intervalSize indu”]

[IntervalSize $\stackrel{\text{pyk}}{\rightarrow}$ “lemma intervalSize”]

[XS $<$ US $\stackrel{\text{pyk}}{\rightarrow}$ “lemma XSlessUS”]

[lemma USdecreasing(+1) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma USdecreasing(+1)”]

[CloseUS $\stackrel{\text{pyk}}{\rightarrow}$ “lemma closeUS”]

[CloseUS(n + 1) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma closeUS(n+1)”]

[AllNegated(Imply) $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma allNegated(Imply)”]

[ExistNegated(Imply) $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma existNegated(Imply)”]

[IntroExist(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma intro exist helper”]

[IntroExist $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma intro exist”]

[ExistMP $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma exist mp”]

[ExistMP2 $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma exist mp2”]

[TwiceExistMP $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma 2exist mp”]

[TwiceExistMP2 $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma 2exist mp2”]

[EAE – MP $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma EAE mp”]

$[\mathrm{AddAll} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“pred lemma addAll”}]$

$[\mathrm{AddExist(Helper1)} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“pred lemma addExist helper1”}]$

$[\mathrm{AddExist(Helper2)} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“pred lemma addExist helper2”}]$

$[\mathrm{AddExist} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“pred lemma addExist”}]$

$[\mathrm{AddExist(SimpleAnt)} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“pred lemma addExist(SimpleAnt)”}]$

$[\mathrm{AddExist(Simple)} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“pred lemma addExist(Simple)”}]$

$[\mathrm{AddEAE} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“pred lemma addEAE”}]$

$[\mathrm{AEA} - \mathrm{negated} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“pred lemma AEAnegated”}]$

$[\mathrm{EEA} - \mathrm{negated} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“pred lemma EEAnegated”}]$

$[\mathrm{Induction} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma induction”}]$

$[\mathrm{leqAntisymmetry} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma leqAntisymmetry”}]$

$[\mathrm{leqTransitivity} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma leqTransitivity”}]$

$[\mathrm{leqAddition} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma leqAddition”}]$

$[\mathrm{leqMultiplication} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma leqMultiplication”}]$

$[\mathrm{Reciprocal} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma reciprocal”}]$

$[\mathrm{Equality} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma equality”}]$

$[\mathrm{eqLeq} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma eqLeq”}]$

$[\mathrm{eqAddition} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma eqAddition”}]$

$[\mathrm{eqMultiplication} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma eqMultiplication”}]$

$[\mathrm{LeqMultiplicationLeft} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma leqMultiplicationLeft”}]$

$[\mathrm{LeqLessEq} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma leqLessEq”}]$

$[\mathrm{LessLeq} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma lessLeq”}]$

$[\mathrm{FromLeqGeq} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma from leqGeq”}]$

$[\mathrm{subLeqRight} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma subLeqRight”}]$

$[\mathrm{subLeqLeft} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma subLeqLeft”}]$

$[\mathrm{Leq} + 1 \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma leqPlus1”}]$

$[\mathrm{PositiveToRight(Leq)} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma positiveToRight(Leq)”}]$

$[\mathrm{PositiveToRight(Leq)(1term)} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma positiveToRight(Leq)(1 term)”}]$

$[\mathrm{lemma\ negativeToRight(Leq)} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma negativeToRight(Leq)”}]$

$[\mathrm{PositiveToLeft(Leq)} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma positiveToLeft(Leq)”}]$

$[\mathrm{negativeToLeft(Leq)} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma negativeToLeft(Leq)”}]$

$[\mathrm{negativeToLeft(Leq)(1term)} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma negativeToLeft(Leq)(1 term)”}]$

$[\mathrm{LeqAdditionLeft} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma leqAdditionLeft”}]$

$[\mathrm{leqSubtraction} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma leqSubtraction”}]$

$[\mathrm{leqSubtractionLeft} \stackrel{\mathrm{pyk}}{\rightarrow} \text{“lemma leqSubtractionLeft”}]$

[thirdGeq $\stackrel{\text{pyk}}{\to}$ "lemma thirdGeq"]
[LeqNegated $\stackrel{\text{pyk}}{\to}$ "lemma leqNegated"]
[AddEquations(Leq) $\stackrel{\text{pyk}}{\to}$ "lemma addEquations(Leq)"]
[MultiplyEquations(Leq) $\stackrel{\text{pyk}}{\to}$ "lemma multiplyEquations(Leq)"]
[ThirdGeqSeries $\stackrel{\text{pyk}}{\to}$ "lemma thirdGeqSeries"]
[LeqNeqLess $\stackrel{\text{pyk}}{\to}$ "lemma leqNeqLess"]
[FromLess $\stackrel{\text{pyk}}{\to}$ "lemma fromLess"]
[ToLess $\stackrel{\text{pyk}}{\to}$ "lemma toLess"]
[fromNotLess $\stackrel{\text{pyk}}{\to}$ "lemma fromNotLess"]
[toNotLess $\stackrel{\text{pyk}}{\to}$ "lemma toNotLess"]
[NegativeLessPositive $\stackrel{\text{pyk}}{\to}$ "lemma negativeLessPositive"]
[leqLessTransitivity $\stackrel{\text{pyk}}{\to}$ "lemma leqLessTransitivity"]
[LessLeqTransitivity $\stackrel{\text{pyk}}{\to}$ "lemma lessLeqTransitivity"]
[LessTransitivity $\stackrel{\text{pyk}}{\to}$ "lemma lessTransitivity"]
[LessTotality $\stackrel{\text{pyk}}{\to}$ "lemma lessTotality"]
[SubLessRight $\stackrel{\text{pyk}}{\to}$ "lemma subLessRight"]
[SubLessLeft $\stackrel{\text{pyk}}{\to}$ "lemma subLessLeft"]
[SwitchTerms($x < y - z$) $\stackrel{\text{pyk}}{\to}$ "lemma switchTerms(x<y-z)"]
[SwitchTerms($x - y < z$) $\stackrel{\text{pyk}}{\to}$ "lemma switchTerms(x-y<z)"]
[LessAddition $\stackrel{\text{pyk}}{\to}$ "lemma lessAddition"]
[LessAdditionLeft $\stackrel{\text{pyk}}{\to}$ "lemma lessAdditionLeft"]
[LessMultiplication $\stackrel{\text{pyk}}{\to}$ "lemma lessMultiplication"]
[LessMultiplicationLeft $\stackrel{\text{pyk}}{\to}$ "lemma lessMultiplicationLeft"]
[LessDivision $\stackrel{\text{pyk}}{\to}$ "lemma lessDivision"]
[PositiveToRight(Less) $\stackrel{\text{pyk}}{\to}$ "lemma positiveToRight(Less)"]
[PositiveToLeft(Less) $\stackrel{\text{pyk}}{\to}$ "lemma positiveToLeft(Less)"]
[NegativeToLeft(Less) $\stackrel{\text{pyk}}{\to}$ "lemma negativeToLeft(Less)"]
[NegativeToRight(Less) $\stackrel{\text{pyk}}{\to}$ "lemma negativeToRight(Less)"]
[AddEquations(Less) $\stackrel{\text{pyk}}{\to}$ "lemma addEquations(Less)"]
[AddEquations(LeqLess) $\stackrel{\text{pyk}}{\to}$ "lemma addEquations(LeqLess)"]
[reciprocalToLeft(Less) $\stackrel{\text{pyk}}{\to}$ "lemma reciprocalToLeft(Less)"]
[LessNegated $\stackrel{\text{pyk}}{\to}$ "lemma lessNegated"]
[PositiveNonzero $\stackrel{\text{pyk}}{\to}$ "lemma positiveNonzero"]
[PositiveNegated $\stackrel{\text{pyk}}{\to}$ "lemma positiveNegated"]
[NonpositiveNegated $\stackrel{\text{pyk}}{\to}$ "lemma nonpositiveNegated"]

[NegativeNegated $\stackrel{\text{pyk}}{\to}$ "lemma negativeNegated"]

[NonnegativeNegated $\stackrel{\text{pyk}}{\to}$ "lemma nonnegativeNegated"]

[PositiveHalved $\stackrel{\text{pyk}}{\to}$ "lemma positiveHalved"]

[PositiveInverted $\stackrel{\text{pyk}}{\to}$ "lemma positiveInverted"]

[NonnegativeNumerical $\stackrel{\text{pyk}}{\to}$ "lemma nonnegativeNumerical"]

[NegativeNumerical $\stackrel{\text{pyk}}{\to}$ "lemma negativeNumerical"]

[PositiveNumerical $\stackrel{\text{pyk}}{\to}$ "lemma positiveNumerical"]

[lemma nonpositiveNumerical $\stackrel{\text{pyk}}{\to}$ "lemma nonpositiveNumerical"]

[$|0| = 0$ $\stackrel{\text{pyk}}{\to}$ "lemma |0|=0"]

[$0 <= |x|$ $\stackrel{\text{pyk}}{\to}$ "lemma 0<=|x|"]

[$x <= |x|$ $\stackrel{\text{pyk}}{\to}$ "lemma x<=|x|"]

[FromPositiveNumerical $\stackrel{\text{pyk}}{\to}$ "lemma fromPositiveNumerical"]

[SameNumerical $\stackrel{\text{pyk}}{\to}$ "lemma sameNumerical"]

[SignNumerical(+) $\stackrel{\text{pyk}}{\to}$ "lemma signNumerical(+)"]

[SignNumerical $\stackrel{\text{pyk}}{\to}$ "lemma signNumerical"]

[ToNumericalLess $\stackrel{\text{pyk}}{\to}$ "lemma toNumericalLess"]

[FromNumericalGreater $\stackrel{\text{pyk}}{\to}$ "lemma fromNumericalGreater"]

[NumericalDifference $\stackrel{\text{pyk}}{\to}$ "lemma numericalDifference"]

[NumericalDifferenceLess(Helper) $\stackrel{\text{pyk}}{\to}$ "lemma numericalDifferenceLess helper"]

[NumericalDifferenceLess $\stackrel{\text{pyk}}{\to}$ "lemma numericalDifferenceLess"]

[SplitNumericalSumHelper $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalSumHelper"]

[splitNumericalSum(++) $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalSum(++)"]

[splitNumericalSum(−−) $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalSum(--)"]

[splitNumericalSum(+ − small) $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalSum(+-, smallNegative)"]

[splitNumericalSum(+ − big) $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalSum(+-, bigNegative)"]

[splitNumericalSum(+−) $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalSum(+-)"]

[splitNumericalSum(−+) $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalSum(-+)"]

[splitNumericalSum $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalSum"]

[SplitNumericalProduct(++) $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalProduct(++)"]

[SplitNumericalProduct(+−) $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalProduct(+-)"]

[SplitNumericalProduct $\stackrel{\text{pyk}}{\to}$ "lemma splitNumericalProduct"]

[insertMiddleTerm(Numerical) $\stackrel{\text{pyk}}{\to}$ "lemma insertMiddleTerm(Numerical)"]

[insertTwoMiddleTerms(Numerical) $\stackrel{\text{pyk}}{\to}$ "lemma insertTwoMiddleTerms(Numerical)"]

[Three2twoTerms $\stackrel{\text{pyk}}{\to}$ “lemma three2twoTerms”]

[Three2threeTerms $\stackrel{\text{pyk}}{\to}$ “lemma three2threeTerms”]

[Three2twoFactors $\stackrel{\text{pyk}}{\to}$ “lemma three2twoFactors”]

[Three2threeFactors $\stackrel{\text{pyk}}{\to}$ “lemma three2threeFactors”]

[Times(-1) $\stackrel{\text{pyk}}{\to}$ “lemma times(-1)”]

[Times(-1)Left $\stackrel{\text{pyk}}{\to}$ “lemma times(-1)Left”]

[MaxLeq(1) $\stackrel{\text{pyk}}{\to}$ “lemma leqMax1”]

[MaxLeq(2) $\stackrel{\text{pyk}}{\to}$ “lemma leqMax2”]

[LessThanMax $\stackrel{\text{pyk}}{\to}$ “lemma lessThanMax”]

[$\mathrm{x} + \mathrm{y} =$ zBackwards $\stackrel{\text{pyk}}{\to}$ “lemma x+y=zBackwards”]

[$\mathrm{x} * \mathrm{y} =$ zBackwards $\stackrel{\text{pyk}}{\to}$ “lemma x*y=zBackwards”]

[$\mathrm{x} = \mathrm{x} + (\mathrm{y} - \mathrm{y})$ $\stackrel{\text{pyk}}{\to}$ “lemma x=x+(y-y)”]

[$\mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y}$ $\stackrel{\text{pyk}}{\to}$ “lemma x=x+y-y”]

[$\mathrm{x} = \mathrm{x} * \mathrm{y} * (1/\mathrm{y})$ $\stackrel{\text{pyk}}{\to}$ “lemma x=x*y*(1/y)”]

[insertMiddleTerm(Sum) $\stackrel{\text{pyk}}{\to}$ “lemma insertMiddleTerm(Sum)”]

[insertTwoMiddleTerms(Sum) $\stackrel{\text{pyk}}{\to}$ “lemma insertTwoMiddleTerms(Sum)”]

[insertMiddleTerm(Difference) $\stackrel{\text{pyk}}{\to}$ “lemma insertMiddleTerm(Difference)”]

[$\mathrm{x} * 0 + \mathrm{x} = \mathrm{x}$ $\stackrel{\text{pyk}}{\to}$ “lemma x*0+x=x”]

[$\mathrm{x} * 0 = 0$ $\stackrel{\text{pyk}}{\to}$ “lemma x*0=0”]

[NonnegativeFactors $\stackrel{\text{pyk}}{\to}$ “lemma nonnegativeFactors”]

[NonzeroFactors $\stackrel{\text{pyk}}{\to}$ “lemma nonzeroFactors”]

[PositiveFactors $\stackrel{\text{pyk}}{\to}$ “lemma positiveFactors”]

[PlusTimesMinus $\stackrel{\text{pyk}}{\to}$ “lemma plusTimesMinus”]

[MinusTimesMinus $\stackrel{\text{pyk}}{\to}$ “lemma minusTimesMinus”]

[$(-1) * (-1) + (-1) * 1 = 0$ $\stackrel{\text{pyk}}{\to}$ “lemma (-1)*(-1)+(-1)*1=0”]

[$(-1) * (-1) = 1$ $\stackrel{\text{pyk}}{\to}$ “lemma (-1)*(-1)=1”]

[$0 < 1$Helper $\stackrel{\text{pyk}}{\to}$ “lemma 0<1Helper”]

[$0 < 1$ $\stackrel{\text{pyk}}{\to}$ “lemma 0<1”]

[$0 < 2$ $\stackrel{\text{pyk}}{\to}$ “lemma 0<2”]

[$0 < 3$ $\stackrel{\text{pyk}}{\to}$ “lemma 0<3”]

[$0 < 1/2$ $\stackrel{\text{pyk}}{\to}$ “lemma 0<1/2”]

[$0 < 1/3$ $\stackrel{\text{pyk}}{\to}$ “lemma 0<1/3”]

[TwoWholes $\stackrel{\text{pyk}}{\to}$ “lemma x+x=2*x”]

[ThreeWholes $\stackrel{\text{pyk}}{\to}$ “lemma x+x+x=3*x”]

[TwoHalves $\stackrel{\text{pyk}}{\to}$ “lemma (1/2)x+(1/2)x=x”]

[ThreeThirds $\stackrel{\text{pyk}}{\rightarrow}$ “lemma (1/3)x+(1/3)x+(1/3)x=x”]

[$-x - y = -(x + y) \stackrel{\text{pyk}}{\rightarrow}$ “lemma -x-y=-(x+y)”]

[$-x * y = -(x * y) \stackrel{\text{pyk}}{\rightarrow}$ “lemma -x*y=-(x*y)”]

[$-0 = 0 \stackrel{\text{pyk}}{\rightarrow}$ “lemma -0=0”]

[SFsymmetry $\stackrel{\text{pyk}}{\rightarrow}$ “lemma sameFsymmetry”]

[SFtransitivity $\stackrel{\text{pyk}}{\rightarrow}$ “lemma sameFtransitivity”]

[f2R(Plus) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma f2R(Plus)”]

[f2R(Times) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma f2R(Times)”]

[$<<$ TransitivityHelper(Q) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma <<TransitivityHelper(Q)”]

[$<<$ Transitivity $\stackrel{\text{pyk}}{\rightarrow}$ “lemma <<Transitivity”]

[$<<==$ Reflexivity $\stackrel{\text{pyk}}{\rightarrow}$ “lemma <<==Reflexivity”]

[$<<==$ AntisymmetryHelper(Q) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma <<==AntisymmetryHelper(Q)”]

[FromNot $<$ f(Weak)(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNot<f(Weak) helper”]

[FromNot $<$ f(Weak) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNot<f(Weak)”]

[FromNot $<$ f(Strong)(Helper2) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNot<f(Strong) helper2”]

[FromNot $<$ f(Strong)(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNot<f(Strong) helper”]

[FromNot $<$ f(Strong) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNot<f(Strong)”]

[fromNotSameF(Strongest)(Helper2) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNotSameF(Strongest) helper2”]

[fromNotSameF(Strongest)(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNotSameF(Strongest) helper”]

[fromNotSameF(Strongest) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNotSameF(Strongest)”]

[ToLess(F)(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma toLess(F) helper”]

[ToLess(F) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma toLess(F)”]

[FromNot $<<\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNot<<”]

[ToLess(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma toLess(R)”]

[FromNotSameF(Weak)(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNotSameF(Weak)(Helper)”]

[FromNotSameF(Weak) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNotSameF(Weak)”]

[FromNotLess(F) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNotLess(F)”]

[$==$ Addition $\stackrel{\text{pyk}}{\rightarrow}$ “lemma ==Addition”]

[$==$ AdditionLeft $\stackrel{\text{pyk}}{\rightarrow}$ “lemma ==AdditionLeft”]

[Fpart $-$ Bounded(Base) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fpart-Bounded base”]

[Fpart $-$ Bounded(InduHelper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fpart-Bounded indu helper”]

[Fpart $-$ Bounded(Indu) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fpart-Bounded indu”]

[Fpart $-$ Bounded $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fpart-Bounded”]

[F − Bounded(Helper) $\stackrel{\text{pyk}}{\to}$ "lemma f-Bounded helper"]
[F − Bounded $\stackrel{\text{pyk}}{\to}$ "lemma f-Bounded"]
[SameFmultiplication(Helper) $\stackrel{\text{pyk}}{\to}$ "lemma sameFmultiplication helper"]
[SameFmultiplication $\stackrel{\text{pyk}}{\to}$ "lemma sameFmultiplication"]
[EqMultiplication(R) $\stackrel{\text{pyk}}{\to}$ "lemma eqMultiplication(R)"]
[EqMultiplicationLeft(R) $\stackrel{\text{pyk}}{\to}$ "lemma eqMultiplicationLeft(R)"]
[x $*$ 0 = 0(F) $\stackrel{\text{pyk}}{\to}$ "lemma x*0=0(F)"]
[x $*$ 0 = 0(R) $\stackrel{\text{pyk}}{\to}$ "lemma x*0=0(R)"]
[LessMultiplication(F)(Helper2) $\stackrel{\text{pyk}}{\to}$ "lemma lessMultiplication(F) helper2"]
[LessMultiplication(F)(Helper) $\stackrel{\text{pyk}}{\to}$ "lemma lessMultiplication(F) helper"]
[LessMultiplication(F) $\stackrel{\text{pyk}}{\to}$ "lemma lessMultiplication(F)"]
[LessMultiplication(R) $\stackrel{\text{pyk}}{\to}$ "lemma lessMultiplication(R)"]
[LeqMultiplication(R) $\stackrel{\text{pyk}}{\to}$ "lemma leqMultiplication(R)"]
[PlusAssociativity(F) $\stackrel{\text{pyk}}{\to}$ "lemma plusAssociativity(F)"]
[Plus0(F) $\stackrel{\text{pyk}}{\to}$ "lemma plus0(F)"]
[PlusCommutativity(F) $\stackrel{\text{pyk}}{\to}$ "lemma plusCommutativity(F)"]
[TimesAssociativity(F) $\stackrel{\text{pyk}}{\to}$ "lemma timesAssociativity(F)"]
[Times1f $\stackrel{\text{pyk}}{\to}$ "lemma times1f"]
[Cauchy(2)(Helper) $\stackrel{\text{pyk}}{\to}$ "lemma 2cauchy helper"]
[Cauchy(2) $\stackrel{\text{pyk}}{\to}$ "lemma 2cauchy"]
[ReciprocalFnonzero $\stackrel{\text{pyk}}{\to}$ "lemma reciprocalF nonzero"]
[(Eventually = f)2sameF(Helper) $\stackrel{\text{pyk}}{\to}$ "lemma eventually=f to sameF helper"]
[(Eventually = f)2sameF $\stackrel{\text{pyk}}{\to}$ "lemma eventually=f to sameF"]
[FromNotSameF(Strong)(Helper2) $\stackrel{\text{pyk}}{\to}$ "lemma fromNotSameF(Strong) helper2"]
[FromNotSameF(Strong)(Helper) $\stackrel{\text{pyk}}{\to}$ "lemma fromNotSameF(Strong) helper"]
[FromNotSameF(Strong) $\stackrel{\text{pyk}}{\to}$ "lemma fromNotSameF(Strong)"]
[SameFreciprocal(Helper) $\stackrel{\text{pyk}}{\to}$ "lemma sameFreciprocal helper"]
[SameFreciprocal $\stackrel{\text{pyk}}{\to}$ "lemma sameFreciprocal"]
[From!! ==$\stackrel{\text{pyk}}{\to}$ "lemma from!!=="]
[Reciprocal(R) $\stackrel{\text{pyk}}{\to}$ "lemma reciprocal(R)"]
[TimesCommutativity(F) $\stackrel{\text{pyk}}{\to}$ "lemma timesCommutativity(F)"]
[Distribution(F) $\stackrel{\text{pyk}}{\to}$ "lemma distribution(F)"]
[FromMax(1) $\stackrel{\text{pyk}}{\to}$ "lemma fromMax(1)"]
[FromMax(2) $\stackrel{\text{pyk}}{\to}$ "lemma fromMax(2)"]

[ToNegatedAnd $\stackrel{\text{pyk}}{\to}$ "prop lemma to negated and"]
[DistributionOut $\stackrel{\text{pyk}}{\to}$ "lemma distributionOut"]
[DistributionOutLeft $\stackrel{\text{pyk}}{\to}$ "lemma distributionOutLeft"]
[DistributionLeft $\stackrel{\text{pyk}}{\to}$ "lemma distributionLeft"]
[FromNotLess(R) $\stackrel{\text{pyk}}{\to}$ "lemma fromNotLess(R)"]
[CartProdIsRelation $\stackrel{\text{pyk}}{\to}$ "lemma cartProdIsRelation"]
[FromSubset $\stackrel{\text{pyk}}{\to}$ "lemma fromSubset"]
[SubsetIsRelation $\stackrel{\text{pyk}}{\to}$ "lemma subsetIsRelation"]
[ToSeries $\stackrel{\text{pyk}}{\to}$ "lemma toSeries"]
[FromSeries $\stackrel{\text{pyk}}{\to}$ "lemma fromSeries"]
[SeriesSubsetCP $\stackrel{\text{pyk}}{\to}$ "lemma seriesSubsetCP"]
[ValueType $\stackrel{\text{pyk}}{\to}$ "lemma valueType"]
[RemoveOr $\stackrel{\text{pyk}}{\to}$ "prop lemma remove or"]
[FromSingleton $\stackrel{\text{pyk}}{\to}$ "lemma fromSingleton"]
[InPair(1) $\stackrel{\text{pyk}}{\to}$ "lemma inPair(1)"]
[InPair(2) $\stackrel{\text{pyk}}{\to}$ "lemma inPair(2)"]
[SameMember(2) $\stackrel{\text{pyk}}{\to}$ "lemma sameMember(2)"]
[ToBinaryUnion(1) $\stackrel{\text{pyk}}{\to}$ "lemma toBinaryUnion(1)"]
[ToBinaryUnion(2) $\stackrel{\text{pyk}}{\to}$ "lemma toBinaryUnion(2)"]
[FromOrderedPair(TwoLevels) $\stackrel{\text{pyk}}{\to}$ "lemma fromOrderedPair(twoLevels)"]
[ToCartProd(Helper) $\stackrel{\text{pyk}}{\to}$ "lemma toCartProd helper"]
[ToCartProd $\stackrel{\text{pyk}}{\to}$ "lemma toCartProd"]
[NonreciprocalToRight(Eq) $\stackrel{\text{pyk}}{\to}$ "lemma nonreciprocalToRight(Eq)"]
[NonreciprocalToLeft(Eq)(1term) $\stackrel{\text{pyk}}{\to}$ "lemma nonreciprocalToLeft(Eq)(1 term)"]
[SameReciprocal $\stackrel{\text{pyk}}{\to}$ "lemma sameReciprocal"]
[CPseparationIsRelation $\stackrel{\text{pyk}}{\to}$ "lemma CPseparationIsRelation"]
[OrderedPairEquality $\stackrel{\text{pyk}}{\to}$ "lemma orderedPairEquality"]
[ReciprocalIsFunction $\stackrel{\text{pyk}}{\to}$ "lemma reciprocalIsFunction"]
[ReciprocalIsTotal $\stackrel{\text{pyk}}{\to}$ "lemma reciprocalIsTotal"]
[ReciprocalIsRationalSeries $\stackrel{\text{pyk}}{\to}$ "lemma reciprocalIsRationalSeries"]
[CrsIsRelation $\stackrel{\text{pyk}}{\to}$ "lemma crsIsRelation"]
[CrsIsFunction $\stackrel{\text{pyk}}{\to}$ "lemma crsIsFunction"]
[CrsIsTotal $\stackrel{\text{pyk}}{\to}$ "lemma crsIsTotal"]
[CrsIsSeries $\stackrel{\text{pyk}}{\to}$ "lemma crsIsSeries"]

[CrsLookup $\stackrel{\text{pyk}}{\rightarrow}$ “lemma crsLookup”]
[0f $\stackrel{\text{pyk}}{\rightarrow}$ “lemma 0f”]
[1f $\stackrel{\text{pyk}}{\rightarrow}$ “lemma 1f”]
[ToSingleton $\stackrel{\text{pyk}}{\rightarrow}$ “lemma toSingleton”]
[FromSameSingleton $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromSameSingleton”]
[SingletonmembersEqual $\stackrel{\text{pyk}}{\rightarrow}$ “lemma singletonmembersEqual”]
[UnequalsNotInSingleton $\stackrel{\text{pyk}}{\rightarrow}$ “lemma unequalsNotInSingleton”]
[NonsingletonmembersUnequal $\stackrel{\text{pyk}}{\rightarrow}$ “lemma nonsingletonmembersUnequal”]
[FromOrderedPair $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromOrderedPair”]
[FromOrderedPair(1) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromOrderedPair(1)”]
[FromOrderedPair(2) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromOrderedPair(2)”]
[FromCartProd $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromCartProd”]
[FromCartProd(1) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromCartProd(1)”]
[FromCartProd(2) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromCartProd(2)”]
[sameOrderedPair $\stackrel{\text{pyk}}{\rightarrow}$ “lemma sameOrderedPair”]
[InSeriesHelper $\stackrel{\text{pyk}}{\rightarrow}$ “lemma inSeries helper”]
[InSeries $\stackrel{\text{pyk}}{\rightarrow}$ “lemma inSeries”]
[To = f(Subset)(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma to=f subset helper”]
[To = f(Subset) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma to=f subset”]
[To = f $\stackrel{\text{pyk}}{\rightarrow}$ “lemma to=f”]
[productIsFunction $\stackrel{\text{pyk}}{\rightarrow}$ “lemma productIsFunction”]
[productIsTotal $\stackrel{\text{pyk}}{\rightarrow}$ “lemma productIsTotal”]
[ProductIsRationalSeries $\stackrel{\text{pyk}}{\rightarrow}$ “lemma productIsRationalSeries”]
[TimesF $\stackrel{\text{pyk}}{\rightarrow}$ “lemma timesF”]
[$-\mathrm{x} + (1/2)\mathrm{x} = -(1/2)\mathrm{x}$ $\stackrel{\text{pyk}}{\rightarrow}$ “lemma -x+(1/2)x=-(1/2)x”]
[PositiveTripled $\stackrel{\text{pyk}}{\rightarrow}$ “lemma positiveTripled”]
[PositiveDividedBy3 $\stackrel{\text{pyk}}{\rightarrow}$ “lemma positiveDividedBy3”]
[$|\mathrm{x} - \mathrm{x}| = 0$ $\stackrel{\text{pyk}}{\rightarrow}$ “lemma |x-x|=0”]
[$1 < 2$ $\stackrel{\text{pyk}}{\rightarrow}$ “lemma 1<2”]
[$1/3 < 2/3$ $\stackrel{\text{pyk}}{\rightarrow}$ “lemma 1/3<2/3”]
[$(1/3)\mathrm{x} + (1/3)\mathrm{x} = (2/3)\mathrm{x}$ $\stackrel{\text{pyk}}{\rightarrow}$ “lemma (1/3)x+(1/3)x=(2/3)x”]
[$(2/3)\mathrm{x} + (1/3)\mathrm{x} = \mathrm{x}$ $\stackrel{\text{pyk}}{\rightarrow}$ “lemma (2/3)x+(1/3)x=x”]
[$-\mathrm{x} + (2/3)\mathrm{x} = -(1/3)\mathrm{x}$ $\stackrel{\text{pyk}}{\rightarrow}$ “lemma -x+(2/3)x=-(1/3)x”]
[$-(1/3)\mathrm{x} - (1/3)\mathrm{x} = -(2/3)\mathrm{x}$ $\stackrel{\text{pyk}}{\rightarrow}$ “lemma -(1/3)x-(1/3)x=-(2/3)x”]
[$-\mathrm{x} + (1/3)\mathrm{x} = -(2/3)\mathrm{x}$ $\stackrel{\text{pyk}}{\rightarrow}$ “lemma -x+(1/3)x=-(2/3)x”]

[PreserveLessGreater $\stackrel{\text{pyk}}{\rightarrow}$ "lemma preserveLessGreater"]

[ClosetolessIsLess $\stackrel{\text{pyk}}{\rightarrow}$ "lemma closetolessIsLess"]

[SubLessLeft(F) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma subLessLeft(F)"]

[SubLessLeft(R) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma subLessLeft(R)"]

[ClosetogreaterIsGreater $\stackrel{\text{pyk}}{\rightarrow}$ "lemma closetogreaterIsGreater"]

[SubLessRight(F) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma subLessRight(F)"]

[SubLessRight(R) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma subLessRight(R)"]

[plus0Left $\stackrel{\text{pyk}}{\rightarrow}$ "lemma plus0Left"]

[times1Left $\stackrel{\text{pyk}}{\rightarrow}$ "lemma times1Left"]

[EqAdditionLeft $\stackrel{\text{pyk}}{\rightarrow}$ "lemma eqAdditionLeft"]

[EqMultiplicationLeft $\stackrel{\text{pyk}}{\rightarrow}$ "lemma eqMultiplicationLeft"]

[PlusF(Sym) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma plusF(Sym)"]

[TimesF(Sym) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma timesF(Sym)"]

[SameSeries(Gen) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma sameSeries(Gen)"]

[EqualsSameF $\stackrel{\text{pyk}}{\rightarrow}$ "lemma equalsSameF"]

[LeqReflexivity(R) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma leqReflexivity(R)"]

[Tester1 $\stackrel{\text{pyk}}{\rightarrow}$ "tester1"]

[Tester2 $\stackrel{\text{pyk}}{\rightarrow}$ "tester2"]

[Tester3 $\stackrel{\text{pyk}}{\rightarrow}$ "tester3"]

[Tester4 $\stackrel{\text{pyk}}{\rightarrow}$ "tester4"]

[Tester5 $\stackrel{\text{pyk}}{\rightarrow}$ "tester5"]

[Tester6 $\stackrel{\text{pyk}}{\rightarrow}$ "tester6"]

[sup $\stackrel{\text{pyk}}{\rightarrow}$ "sup"]

[sup $\stackrel{\text{tex}}{\to}$ “sup”]

[x(exp)y $\stackrel{\text{tex}}{\to}$ “(#1.
(expARGH!) #2.
)”]

[NonreciprocalToRight(Eq)(1term) $\stackrel{\text{tex}}{\to}$ “NonreciprocalToRight(Eq)(1 term)”]

[PlusAssociativity(4terms) $\stackrel{\text{tex}}{\to}$ “PlusAssociativity(4 terms)”]

[NonzeroProduct(2) $\stackrel{\text{tex}}{\to}$ “NonzeroProduct(2)”]

[lemma eqLeq(R) $\stackrel{\text{tex}}{\to}$ “eqLeq(R)”]

[ThirdGeqSeries $\stackrel{\text{tex}}{\to}$ “ThirdGeqSeries”]

[negativeToLeft(Leq) $\stackrel{\text{tex}}{\to}$ “negativeToLeft(Leq)”]

[negativeToLeft(Leq)(1term) $\stackrel{\text{tex}}{\to}$ “negativeToLeft(Leq)(1 term)”]

[UStelescope(+1) $\stackrel{\text{tex}}{\to}$ “UStelescope(+1)”]

[TelescopeBound(Base) $\stackrel{\text{tex}}{\to}$ “TelescopeBound(Base)”]

[TelescopeBound(Indu) $\stackrel{\text{tex}}{\to}$ “TelescopeBound(Indu)”]

[TelescopeBound $\stackrel{\text{tex}}{\to}$ “TelescopeBound”]

[IntervalSize(Base) $\stackrel{\text{tex}}{\to}$ “IntervalSize(Base)”]

[IntervalSize(Indu) $\stackrel{\text{tex}}{\to}$ “IntervalSize(Indu)”]

[IntervalSize $\stackrel{\text{tex}}{\to}$ “IntervalSize”]

[$XS < US$ $\stackrel{\text{tex}}{\to}$ “XS<US”]

[CloseUS $\stackrel{\text{tex}}{\to}$ “CloseUS”]

[CloseUS$(n+1)$ $\stackrel{\text{tex}}{\to}$ “CloseUS(n+1)”]

[Induction $\stackrel{\text{tex}}{\to}$ “Induction”]

[leqAntisymmetry $\stackrel{\text{tex}}{\to}$ “leqAntisymmetry”]

[leqTransitivity $\stackrel{\text{tex}}{\to}$ “leqTransitivity”]

[leqAddition $\stackrel{\text{tex}}{\to}$ “leqAddition”]

[Reciprocal $\stackrel{\text{tex}}{\to}$ "Reciprocal"]

[Equality $\stackrel{\text{tex}}{\to}$ "Equality"]

[eqLeq $\stackrel{\text{tex}}{\to}$ "eqLeq"]

[eqAddition $\stackrel{\text{tex}}{\to}$ "eqAddition"]

[eqMultiplication $\stackrel{\text{tex}}{\to}$ "eqMultiplication"]

[eqReflexivity $\stackrel{\text{tex}}{\to}$ "eqReflexivity"]

[eqSymmetry $\stackrel{\text{tex}}{\to}$ "eqSymmetry"]

[eqTransitivity $\stackrel{\text{tex}}{\to}$ "eqTransitivity"]

[eqTransitivity4 $\stackrel{\text{tex}}{\to}$ "eqTransitivity4"]

[eqTransitivity5 $\stackrel{\text{tex}}{\to}$ "eqTransitivity5"]

[eqTransitivity6 $\stackrel{\text{tex}}{\to}$ "eqTransitivity6"]

[plus0Left $\stackrel{\text{tex}}{\to}$ "plus0Left"]

[times1Left $\stackrel{\text{tex}}{\to}$ "times1Left"]

[EqMultiplicationLeft $\stackrel{\text{tex}}{\to}$ "EqMultiplicationLeft"]

[DistributionLeft $\stackrel{\text{tex}}{\to}$ "DistributionLeft"]

[DistributionOut $\stackrel{\text{tex}}{\to}$ "DistributionOut"]

[DistributionOutLeft $\stackrel{\text{tex}}{\to}$ "DistributionOutLeft"]

[Three2twoTerms $\stackrel{\text{tex}}{\to}$ "Three2twoTerms"]

[Three2threeTerms $\stackrel{\text{tex}}{\to}$ "Three2threeTerms"]

[Three2twoFactors $\stackrel{\text{tex}}{\to}$ "Three2twoFactors"]

[Three2threeFactors $\stackrel{\text{tex}}{\to}$ "Three2threeFactors"]

[AddEquations $\stackrel{\text{tex}}{\to}$ "AddEquations"]

[SubtractEquations $\stackrel{\text{tex}}{\to}$ "SubtractEquations"]

[SubtractEquationsLeft $\stackrel{\text{tex}}{\to}$ "SubtractEquationsLeft"]

[MultiplyEquations $\stackrel{\text{tex}}{\to}$ "MultiplyEquations"]

[EqNegated $\stackrel{\text{tex}}{\to}$ "EqNegated"]

[PositiveToRight(Eq) $\stackrel{\text{tex}}{\to}$ "PositiveToRight(Eq)"]

[PositiveToLeft(Eq)(1term) $\stackrel{\text{tex}}{\to}$ "PositiveToLeft(Eq)(1 term)"]

[NegativeToLeft(Eq) $\stackrel{\text{tex}}{\to}$ "NegativeToLeft(Eq)"]

[reciprocalToLeft(Less) $\stackrel{\text{tex}}{\to}$ "reciprocalToLeft(Less)"]

[LessNeq $\stackrel{\text{tex}}{\to}$ "LessNeq"]

[NeqSymmetry $\stackrel{\text{tex}}{\to}$ "NeqSymmetry"]

[NeqNegated $\stackrel{\text{tex}}{\to}$ "NeqNegated"]

[SubNeqRight $\stackrel{\text{tex}}{\to}$ "SubNeqRight"]

[SubNeqLeft $\stackrel{\text{tex}}{\to}$ "SubNeqLeft"]

[NegativeToRight(Neq)(1term) $\stackrel{\text{tex}}{\to}$ "NegativeToRight(Neq)(1 term)"]

[NeqAddition $\stackrel{\text{tex}}{\to}$ "NeqAddition"]

[NeqMultiplication $\stackrel{\text{tex}}{\to}$ "NeqMultiplication"]

[UniqueNegative $\stackrel{\text{tex}}{\to}$ "UniqueNegative"]

[DoubleMinus $\stackrel{\text{tex}}{\to}$ "DoubleMinus"]

[LeqMultiplicationLeft $\stackrel{\text{tex}}{\to}$ "LeqMultiplicationLeft "]

[LeqLessEq $\stackrel{\text{tex}}{\to}$ "LeqLessEq"]

[LessLeq $\stackrel{\text{tex}}{\to}$ "LessLeq"]

[FromLeqGeq $\stackrel{\text{tex}}{\to}$ "FromLeqGeq"]

[subLeqRight $\stackrel{\text{tex}}{\to}$ "subLeqRight"]

[subLeqLeft $\stackrel{\text{tex}}{\to}$ "subLeqLeft"]

[Leq + 1 $\stackrel{\text{tex}}{\to}$ "Leq+1"]

[PositiveToRight(Leq) $\stackrel{\text{tex}}{\to}$ "PositiveToRight(Leq)"]

[PositiveToRight(Leq)(1term) $\stackrel{\text{tex}}{\to}$ "PositiveToRight(Leq)(1 term)"]

[PositiveToLeft(Leq) $\stackrel{\text{tex}}{\to}$ "PositiveToLeft(Leq)"]

[LeqAdditionLeft $\stackrel{\text{tex}}{\to}$ "LeqAdditionLeft"]

[leqSubtraction $\stackrel{\text{tex}}{\to}$ "leqSubtraction"]

[leqSubtractionLeft $\stackrel{\text{tex}}{\to}$ "leqSubtractionLeft"]

[leqMultiplication $\stackrel{\text{tex}}{\to}$ "leqMultiplication"]

[thirdGeq $\stackrel{\text{tex}}{\to}$ "thirdGeq"]

[LeqNegated $\stackrel{\text{tex}}{\to}$ "LeqNegated"]

[AddEquations(Leq) $\stackrel{\text{tex}}{\to}$ "AddEquations(Leq)"]

[MultiplyEquations(Leq) $\stackrel{\text{tex}}{\to}$ "MultiplyEquations(Leq)"]

[LeqNeqLess $\stackrel{\text{tex}}{\to}$ "LeqNeqLess"]

[FromLess $\stackrel{\text{tex}}{\to}$ "FromLess"]

[ToLess $\stackrel{\text{tex}}{\to}$ "ToLess"]

[fromNotLess $\stackrel{\text{tex}}{\to}$ "fromNotLess"]

[toNotLess $\stackrel{\text{tex}}{\to}$ "toNotLess"]

[LessAddition $\stackrel{\text{tex}}{\to}$ "LessAddition"]

[LessAdditionLeft $\stackrel{\text{tex}}{\to}$ "LessAdditionLeft"]

[LessMultiplication $\stackrel{\text{tex}}{\to}$ "LessMultiplication"]

[LessMultiplicationLeft $\stackrel{\text{tex}}{\to}$ "LessMultiplicationLeft"]

[LessDivision $\stackrel{\text{tex}}{\to}$ "LessDivision"]

[PositiveToRight(Less) $\stackrel{\text{tex}}{\to}$ "PositiveToRight(Less)"]

[PositiveToLeft(Less) $\stackrel{\text{tex}}{\to}$ "PositiveToLeft(Less)"]

[NegativeToLeft(Less) $\stackrel{\text{tex}}{\to}$ "NegativeToLeft(Less)"]

[NegativeToRight(Less) $\stackrel{\text{tex}}{\to}$ "NegativeToRight(Less)"]

[AddEquations(Less) $\stackrel{\text{tex}}{\to}$ "AddEquations(Less)"]

[AddEquations(LeqLess) $\stackrel{\text{tex}}{\to}$ "AddEquations(LeqLess)"]

[NegativeLessPositive $\stackrel{\text{tex}}{\to}$ "NegativeLessPositive"] [leqLessTransitivity $\overset{\text{tex}}{\to}$ “leqLessTransitivity”]

[LessLeqTransitivity $\overset{\text{tex}}{\to}$ “LessLeqTransitivity”]

[LessTransitivity $\overset{\text{tex}}{\to}$ “LessTransitivity”]

[LessTotality $\overset{\text{tex}}{\to}$ “LessTotality”]

[SubLessRight $\overset{\text{tex}}{\to}$ “SubLessRight”]

[SubLessLeft $\overset{\text{tex}}{\to}$ “SubLessLeft”]

[SwitchTerms($\mathrm{x} < \mathrm{y} - \mathrm{z}$) $\overset{\text{tex}}{\to}$ “SwitchTerms(x<y-z)”]

[SwitchTerms($\mathrm{x} - \mathrm{y} < \mathrm{z}$) $\overset{\text{tex}}{\to}$ “SwitchTerms(x-y<z)”]

[LessNegated $\overset{\text{tex}}{\to}$ “LessNegated”]

[PositiveNonzero $\overset{\text{tex}}{\to}$ “PositiveNonzero”]

[PositiveNegated $\overset{\text{tex}}{\to}$ “PositiveNegated”]

[NonpositiveNegated $\overset{\text{tex}}{\to}$ “NonpositiveNegated”]

[NegativeNegated $\overset{\text{tex}}{\to}$ “NegativeNegated”]

[NonnegativeNegated $\overset{\text{tex}}{\to}$ “NonnegativeNegated”]

[PositiveInverted $\overset{\text{tex}}{\to}$ “PositiveInverted”]

[PositiveHalved $\overset{\text{tex}}{\to}$ “PositiveHalved”]

[NonnegativeNumerical $\overset{\text{tex}}{\to}$ “NonnegativeNumerical”]

[NegativeNumerical $\overset{\text{tex}}{\to}$ “NegativeNumerical”]

[PositiveNumerical $\overset{\text{tex}}{\to}$ “PositiveNumerical”]

[$|0| = 0$ $\overset{\text{tex}}{\to}$ “|0|=0”]

[$0 <= |\mathrm{x}|$ $\overset{\text{tex}}{\to}$ “0<=|x|”]

[$\mathrm{x} <= |\mathrm{x}|$ $\overset{\text{tex}}{\to}$ “x<=|x|”]

[FromPositiveNumerical $\overset{\text{tex}}{\to}$ “FromPositiveNumerical”]

[SameNumerical $\overset{\text{tex}}{\to}$ “SameNumerical”]

[SignNumerical(+) $\overset{\text{tex}}{\to}$ “SignNumerical(+)”]

[SignNumerical $\stackrel{\text{tex}}{\to}$ “SignNumerical”]

[ToNumericalLess $\stackrel{\text{tex}}{\to}$ “ToNumericalLess”]

[FromNumericalGreater $\stackrel{\text{tex}}{\to}$ “FromNumericalGreater”]

[NumericalDifference $\stackrel{\text{tex}}{\to}$ “NumericalDifference”]

[NumericalDifferenceLess(Helper) $\stackrel{\text{tex}}{\to}$ “NumericalDifferenceLess(Helper)”]

[NumericalDifferenceLess $\stackrel{\text{tex}}{\to}$ “NumericalDifferenceLess”]

[SplitNumericalSumHelper $\stackrel{\text{tex}}{\to}$ “SplitNumericalSumHelper”]

[splitNumericalSum(++) $\stackrel{\text{tex}}{\to}$ “splitNumericalSum(++)”]

[splitNumericalSum($--$) $\stackrel{\text{tex}}{\to}$ “splitNumericalSum(--)”]

[splitNumericalSum($+-$ small) $\stackrel{\text{tex}}{\to}$ “splitNumericalSum(+-small)”]

[splitNumericalSum($+-$ big) $\stackrel{\text{tex}}{\to}$ “splitNumericalSum(+-big)”]

[splitNumericalSum($+-$) $\stackrel{\text{tex}}{\to}$ “splitNumericalSum(+-)”]

[splitNumericalSum($-+$) $\stackrel{\text{tex}}{\to}$ “splitNumericalSum(-+)”]

[splitNumericalSum $\stackrel{\text{tex}}{\to}$ “splitNumericalSum”]

[SplitNumericalProduct(++) $\stackrel{\text{tex}}{\to}$ “SplitNumericalProduct(++)”]

[SplitNumericalProduct($+-$) $\stackrel{\text{tex}}{\to}$ “SplitNumericalProduct(+-)”]

[SplitNumericalProduct $\stackrel{\text{tex}}{\to}$ “SplitNumericalProduct”]

[insertMiddleTerm(Numerical) $\stackrel{\text{tex}}{\to}$ “insertMiddleTerm(Numerical)”]

[insertTwoMiddleTerms(Numerical) $\stackrel{\text{tex}}{\to}$ “insertTwoMiddleTerms(Numerical)”]

[MaxLeq(1) $\stackrel{\text{tex}}{\to}$ “MaxLeq(1)”]

[MaxLeq(2) $\stackrel{\text{tex}}{\to}$ “MaxLeq(2)”]

[LessThanMax $\stackrel{\text{tex}}{\to}$ “LessThanMax”]

[$\mathrm{x} + \mathrm{y} = \mathrm{zBackwards}$ $\stackrel{\text{tex}}{\to}$ “x+y=zBackwards”]

[$\mathrm{x} * \mathrm{y} = \mathrm{zBackwards}$ $\stackrel{\text{tex}}{\to}$ “x*y=zBackwards”]

[$\mathrm{x} = \mathrm{x} + (\mathrm{y} - \mathrm{y})$ $\stackrel{\text{tex}}{\to}$ “x=x+(y-y)”]

[$\mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \overset{\text{tex}}{\rightarrow}$ “x=x+y-y”]

[$\mathrm{x} = \mathrm{x} * \mathrm{y} * (1/\mathrm{y}) \overset{\text{tex}}{\rightarrow}$ “x=x∗y∗(1/y)”]

[insertMiddleTerm(Sum) $\overset{\text{tex}}{\rightarrow}$ “insertMiddleTerm(Sum)”]

[insertTwoMiddleTerms(Sum) $\overset{\text{tex}}{\rightarrow}$ “insertTwoMiddleTerms(Sum)”]

[insertMiddleTerm(Difference) $\overset{\text{tex}}{\rightarrow}$ “insertMiddleTerm(Difference)”]

[$\mathrm{x} * 0 + \mathrm{x} = \mathrm{x} \overset{\text{tex}}{\rightarrow}$ “x∗0+x=x”]

[NonnegativeFactors $\overset{\text{tex}}{\rightarrow}$ “NonnegativeFactors”]

[NonzeroFactors $\overset{\text{tex}}{\rightarrow}$ “NonzeroFactors”]

[PositiveFactors $\overset{\text{tex}}{\rightarrow}$ “PositiveFactors”]

[PlusTimesMinus $\overset{\text{tex}}{\rightarrow}$ “PlusTimesMinus”]

[MinusTimesMinus $\overset{\text{tex}}{\rightarrow}$ “MinusTimesMinus”]

[$\mathrm{x} * 0 = 0 \overset{\text{tex}}{\rightarrow}$ “x∗0=0”]

[$(-1) * (-1) + (-1) * 1 = 0 \overset{\text{tex}}{\rightarrow}$ “(-1)∗(-1)+(-1)∗1=0”]

[$(-1) * (-1) = 1 \overset{\text{tex}}{\rightarrow}$ “(-1)∗(-1)=1”]

[$0 < 1$Helper $\overset{\text{tex}}{\rightarrow}$ “0<1Helper”]

[$0 < 1 \overset{\text{tex}}{\rightarrow}$ “0<1”]

[$0 < 2 \overset{\text{tex}}{\rightarrow}$ “0<2”]

[$0 < 3 \overset{\text{tex}}{\rightarrow}$ “0<3”]

[$0 < 1/2 \overset{\text{tex}}{\rightarrow}$ “0<1/2”]

[$0 < 1/3 \overset{\text{tex}}{\rightarrow}$ “0<1/3”]

[TwoWholes $\overset{\text{tex}}{\rightarrow}$ “TwoWholes”]

[ThreeWholes $\overset{\text{tex}}{\rightarrow}$ “ThreeWholes”]

[TwoHalves $\overset{\text{tex}}{\rightarrow}$ “TwoHalves”]

[ThreeThirds $\overset{\text{tex}}{\rightarrow}$ “ThreeThirds”]

[$-\mathrm{x} - \mathrm{y} = -(\mathrm{x} + \mathrm{y}) \overset{\text{tex}}{\rightarrow}$ “-x-y=-(x+y)”]

$[-x * y = -(x * y) \stackrel{tex}{\rightarrow}$ "-x*y=-(x*y)"]

[MinusNegated $\stackrel{tex}{\rightarrow}$ "MinusNegated"]

[Times(−1) $\stackrel{tex}{\rightarrow}$ "Times(-1)"]

[Times(−1)Left $\stackrel{tex}{\rightarrow}$ "Times(-1)Left"]

$[-0 = 0 \stackrel{tex}{\rightarrow}$ "-0=0"]

[AllNegated(Imply) $\stackrel{tex}{\rightarrow}$ "AllNegated(Imply)"]

[ExistNegated(Imply) $\stackrel{tex}{\rightarrow}$ "ExistNegated(Imply)"]

[IntroExist(Helper) $\stackrel{tex}{\rightarrow}$ "IntroExist(Helper)"]

[IntroExist $\stackrel{tex}{\rightarrow}$ "IntroExist"]

[ExistMP $\stackrel{tex}{\rightarrow}$ "ExistMP"]

[ExistMP2 $\stackrel{tex}{\rightarrow}$ "ExistMP2"]

[TwiceExistMP $\stackrel{tex}{\rightarrow}$ "TwiceExistMP"]

[TwiceExistMP2 $\stackrel{tex}{\rightarrow}$ "TwiceExistMP2"]

$[\mathrm{EAE} - \mathrm{MP} \stackrel{tex}{\rightarrow}$ "EAE-MP"]

[AddAll $\stackrel{tex}{\rightarrow}$ "AddAll "]

[AddExist(Helper1) $\stackrel{tex}{\rightarrow}$ "AddExist(Helper1)"]

[AddExist(Helper2) $\stackrel{tex}{\rightarrow}$ "AddExist(Helper2)"]

[AddExist $\stackrel{tex}{\rightarrow}$ "AddExist"]

[AddExist(SimpleAnt) $\stackrel{tex}{\rightarrow}$ "AddExist(SimpleAnt)"]

[AddExist(Simple) $\stackrel{tex}{\rightarrow}$ "AddExist(Simple)"]

[AddEAE $\stackrel{tex}{\rightarrow}$ "AddEAE"]

$[\mathrm{AEA} - \mathrm{negated} \stackrel{tex}{\rightarrow}$ "AEA-negated"]

$[\mathrm{EEA} - \mathrm{negated} \stackrel{tex}{\rightarrow}$ "EEA-negated"]

[ToNegatedAnd $\stackrel{tex}{\rightarrow}$ "ToNegatedAnd"]

[eqTransitivity4 $\stackrel{tex}{\rightarrow}$ "eqTransitivity4"]

[SFsymmetry $\stackrel{\text{tex}}{\rightarrow}$ “SFsymmetry”]

[SFtransitivity $\stackrel{\text{tex}}{\rightarrow}$ “SFtransitivity”]

[PlusF(Sym) $\stackrel{\text{tex}}{\rightarrow}$ “PlusF(Sym)”]

[TimesF(Sym) $\stackrel{\text{tex}}{\rightarrow}$ “TimesF(Sym)”]

[f2R(Plus) $\stackrel{\text{tex}}{\rightarrow}$ “f2R(Plus)”]

[f2R(Times) $\stackrel{\text{tex}}{\rightarrow}$ “f2R(Times)”]

[<< TransitivityHelper(Q) $\stackrel{\text{tex}}{\rightarrow}$ “<<TransitivityHelper(Q)”]

[<< Transitivity $\stackrel{\text{tex}}{\rightarrow}$ “<<Transitivity”]

[<<== Reflexivity $\stackrel{\text{tex}}{\rightarrow}$ “<<==Reflexivity”]

[<<== AntisymmetryHelper(Q) $\stackrel{\text{tex}}{\rightarrow}$ “<<==AntisymmetryHelper(Q)”]

[FromNotSameF(Weak)(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “FromNotSameF(Weak)(Helper)”]

[FromNotSameF(Weak) $\stackrel{\text{tex}}{\rightarrow}$ “FromNotSameF(Weak)”]

[FromNotLess(F) $\stackrel{\text{tex}}{\rightarrow}$ “FromNotLess(F)”]

[Plus0(F) $\stackrel{\text{tex}}{\rightarrow}$ “Plus0(F)”]

[== Addition $\stackrel{\text{tex}}{\rightarrow}$ “==Addition”]

[== AdditionLeft $\stackrel{\text{tex}}{\rightarrow}$ “==AdditionLeft”]

[Fpart − Bounded(Base) $\stackrel{\text{tex}}{\rightarrow}$ “Fpart-Bounded(Base)”]

[Fpart − Bounded(InduHelper) $\stackrel{\text{tex}}{\rightarrow}$ “Fpart-Bounded(InduHelper)”]

[Fpart − Bounded(Indu) $\stackrel{\text{tex}}{\rightarrow}$ “Fpart-Bounded(Indu)”]

[Fpart − Bounded $\stackrel{\text{tex}}{\rightarrow}$ “Fpart-Bounded”]

[F − Bounded $\stackrel{\text{tex}}{\rightarrow}$ “F-Bounded”]

[F − Bounded(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “F-Bounded(Helper)”]

[SameFmultiplication(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “SameFmultiplication(Helper)”]

[SameFmultiplication $\stackrel{\text{tex}}{\rightarrow}$ “SameFmultiplication”]

[FromNot < f(Weak)(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “FromNot<f(Weak)(Helper)”]

[FromNot < f(Weak) $\stackrel{\text{tex}}{\rightarrow}$ “FromNot<f(Weak)”]

[FromNot < f(Strong)(Helper2) $\stackrel{\text{tex}}{\rightarrow}$ “FromNot<f(Strong)(Helper2)”]

[FromNot < f(Strong)(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “FromNot<f(Strong)(Helper)”]

[FromNot < f(Strong) $\stackrel{\text{tex}}{\rightarrow}$ “FromNot<f(Strong)”]

[fromNotSameF(Strongest)(Helper2) $\stackrel{\text{tex}}{\rightarrow}$
“fromNotSameF(Strongest)(Helper2)”]

[fromNotSameF(Strongest)(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “fromNotSameF(Strongest)(Helper)”]

[fromNotSameF(Strongest) $\stackrel{\text{tex}}{\rightarrow}$ “fromNotSameF(Strongest)”]

[ToLess(F)(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “ToLess(F)(Helper)”]

[ToLess(F) $\stackrel{\text{tex}}{\rightarrow}$ “ToLess(F)”]

[LessMultiplication(F)(Helper2) $\stackrel{\text{tex}}{\rightarrow}$ “LessMultiplication(F)(Helper2)”]

[LessMultiplication(F)(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “LessMultiplication(F)(Helper)”]

[LessMultiplication(F) $\stackrel{\text{tex}}{\rightarrow}$ “LessMultiplication(F)”]

[EqMultiplication(R) $\stackrel{\text{tex}}{\rightarrow}$ “EqMultiplication(R)”]

[EqMultiplicationLeft(R) $\stackrel{\text{tex}}{\rightarrow}$ “EqMultiplicationLeft(R)”]

[PlusAssociativity(F) $\stackrel{\text{tex}}{\rightarrow}$ “PlusAssociativity(F)”]

[FromNot <<$\stackrel{\text{tex}}{\rightarrow}$ “FromNot<<”]

[ToLess(R) $\stackrel{\text{tex}}{\rightarrow}$ “ToLess(R)”]

[$x * 0 = 0$(F) $\stackrel{\text{tex}}{\rightarrow}$ “x∗0=0(F)”]

[$x * 0 = 0$(R) $\stackrel{\text{tex}}{\rightarrow}$ “x∗0=0(R)”]

[PlusCommutativity(F) $\stackrel{\text{tex}}{\rightarrow}$ “PlusCommutativity(F)”]

[Cauchy(2)(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “Cauchy(2)(Helper)”]

[Cauchy(2) $\stackrel{\text{tex}}{\rightarrow}$ “Cauchy(2)”]

[TimesAssociativity(F) $\stackrel{\text{tex}}{\rightarrow}$ “TimesAssociativity(F)”]

[LessMultiplication(R) $\stackrel{\text{tex}}{\rightarrow}$ “LessMultiplication(R)”]

[LeqMultiplication(R) $\overset{\text{tex}}{\to}$ "LeqMultiplication(R)"]

[Times1f $\overset{\text{tex}}{\to}$ "Times1f"]

[ReciprocalFnonzero $\overset{\text{tex}}{\to}$ "ReciprocalFnonzero"]

[(Eventually = f)2sameF(Helper) $\overset{\text{tex}}{\to}$ "(Eventually=f)2sameF(Helper)"]

[(Eventually = f)2sameF $\overset{\text{tex}}{\to}$ "(Eventually=f)2sameF"]

[FromNotSameF(Strong)(Helper2) $\overset{\text{tex}}{\to}$ "FromNotSameF(Strong)(Helper2)"]

[FromNotSameF(Strong)(Helper) $\overset{\text{tex}}{\to}$ "FromNotSameF(Strong)(Helper)"]

[FromNotSameF(Strong) $\overset{\text{tex}}{\to}$ "FromNotSameF(Strong)"]

[SameFreciprocal(Helper) $\overset{\text{tex}}{\to}$ "SameFreciprocal(Helper)"]

[SameFreciprocal $\overset{\text{tex}}{\to}$ "SameFreciprocal"]

[From!! ==$\overset{\text{tex}}{\to}$ "From!!=="]

[Reciprocal(R) $\overset{\text{tex}}{\to}$ "Reciprocal(R)"]

[TimesCommutativity(F) $\overset{\text{tex}}{\to}$ "TimesCommutativity(F)"]

[Distribution(F) $\overset{\text{tex}}{\to}$ "Distribution(F)"]

[FromNotLess(R) $\overset{\text{tex}}{\to}$ "FromNotLess(R)"]

[ToNegatedAnd(1) $\overset{\text{tex}}{\to}$ "ToNegatedAnd(1)"]

[FromMax(1) $\overset{\text{tex}}{\to}$ "FromMax(1)"]

[FromMax(2) $\overset{\text{tex}}{\to}$ "FromMax(2)"]

[CartProdIsRelation $\overset{\text{tex}}{\to}$ "CartProdIsRelation"]

[FromSubset $\overset{\text{tex}}{\to}$ "FromSubset"]

[SubsetIsRelation $\overset{\text{tex}}{\to}$ "SubsetIsRelation"]

[SeriesSubsetCP $\overset{\text{tex}}{\to}$ "SeriesSubsetCP"]

[ValueType $\overset{\text{tex}}{\to}$ "ValueType"]

[ToSeries $\overset{\text{tex}}{\to}$ "ToSeries"]

[FromSeries $\overset{\text{tex}}{\to}$ "FromSeries"]

[RemoveOr $\stackrel{\text{tex}}{\to}$ “RemoveOr”]

[FromSingleton $\stackrel{\text{tex}}{\to}$ “FromSingleton”]

[InPair(1) $\stackrel{\text{tex}}{\to}$ “InPair(1)”]

[InPair(2) $\stackrel{\text{tex}}{\to}$ “InPair(2)”]

[SameMember(2) $\stackrel{\text{tex}}{\to}$ “SameMember(2)”]

[ToBinaryUnion(1) $\stackrel{\text{tex}}{\to}$ “ToBinaryUnion(1)”]

[ToBinaryUnion(2) $\stackrel{\text{tex}}{\to}$ “ToBinaryUnion(2)”]

[FromOrderedPair(TwoLevels) $\stackrel{\text{tex}}{\to}$ “FromOrderedPair(TwoLevels)”]

[ToCartProd(Helper) $\stackrel{\text{tex}}{\to}$ “ToCartProd(Helper)”]

[ToCartProd $\stackrel{\text{tex}}{\to}$ “ToCartProd”]

[NonreciprocalToRight(Eq) $\stackrel{\text{tex}}{\to}$ “NonreciprocalToRight(Eq)”]

[NonreciprocalToLeft(Eq)(1term) $\stackrel{\text{tex}}{\to}$ “NonreciprocalToLeft(Eq)(1 term)”]

[SameReciprocal $\stackrel{\text{tex}}{\to}$ “SameReciprocal”]

[CPseparationIsRelation $\stackrel{\text{tex}}{\to}$ “CPseparationIsRelation”]

[OrderedPairEquality $\stackrel{\text{tex}}{\to}$ “OrderedPairEquality”]

[ReciprocalIsFunction $\stackrel{\text{tex}}{\to}$ “ReciprocalIsFunction”]

[ReciprocalIsTotal $\stackrel{\text{tex}}{\to}$ “ReciprocalIsTotal”]

[ReciprocalIsRationalSeries $\stackrel{\text{tex}}{\to}$ “ReciprocalIsRationalSeries”]

[CrsIsRelation $\stackrel{\text{tex}}{\to}$ “CrsIsRelation”]

[CrsIsFunction $\stackrel{\text{tex}}{\to}$ “CrsIsFunction ”]

[CrsIsTotal $\stackrel{\text{tex}}{\to}$ “CrsIsTotal”]

[CrsIsSeries $\stackrel{\text{tex}}{\to}$ “CrsIsSeries”]

[CrsLookup $\stackrel{\text{tex}}{\to}$ “CrsLookup”]

[0f $\stackrel{\text{tex}}{\to}$ “0f”]

[1f $\stackrel{\text{tex}}{\to}$ “1f”]

[ToSingleton $\stackrel{\text{tex}}{\rightarrow}$ "ToSingleton"]

[FromSameSingleton $\stackrel{\text{tex}}{\rightarrow}$ "FromSameSingleton"]

[SingletonmembersEqual $\stackrel{\text{tex}}{\rightarrow}$ "SingletonmembersEqual"]

[UnequalsNotInSingleton $\stackrel{\text{tex}}{\rightarrow}$ "UnequalsNotInSingleton"]

[NonsingletonmembersUnequal $\stackrel{\text{tex}}{\rightarrow}$ "NonsingletonmembersUnequal"]

[FromOrderedPair $\stackrel{\text{tex}}{\rightarrow}$ "FromOrderedPair"]

[FromOrderedPair(1) $\stackrel{\text{tex}}{\rightarrow}$ "FromOrderedPair(1)"]

[FromOrderedPair(2) $\stackrel{\text{tex}}{\rightarrow}$ "FromOrderedPair(2)"]

[FromCartProd $\stackrel{\text{tex}}{\rightarrow}$ "FromCartProd"]

[FromCartProd(1) $\stackrel{\text{tex}}{\rightarrow}$ "FromCartProd(1)"]

[FromCartProd(2) $\stackrel{\text{tex}}{\rightarrow}$ "FromCartProd(2)"]

[sameOrderedPair $\stackrel{\text{tex}}{\rightarrow}$ "sameOrderedPair"]

[InSeriesHelper $\stackrel{\text{tex}}{\rightarrow}$ "InSeriesHelper"]

[InSeries $\stackrel{\text{tex}}{\rightarrow}$ "InSeries"]

[To = f(Subset)(Helper) $\stackrel{\text{tex}}{\rightarrow}$ "To=f(Subset)(Helper)"]

[To = f(Subset) $\stackrel{\text{tex}}{\rightarrow}$ "To=f(Subset)"]

[To = f $\stackrel{\text{tex}}{\rightarrow}$ "To=f"]

[Tester1 $\stackrel{\text{tex}}{\rightarrow}$ "Tester1"]

[Tester2 $\stackrel{\text{tex}}{\rightarrow}$ "Tester2"]

[Tester3 $\stackrel{\text{tex}}{\rightarrow}$ "Tester3"]

[Tester4 $\stackrel{\text{tex}}{\rightarrow}$ "Tester4"]

[Tester5 $\stackrel{\text{tex}}{\rightarrow}$ "Tester5"]

[Tester6 $\stackrel{\text{tex}}{\rightarrow}$ "Tester6"]

[productIsFunction $\stackrel{\text{tex}}{\rightarrow}$ "productIsFunction"]

[productIsTotal $\stackrel{\text{tex}}{\rightarrow}$ "productIsTotal"]

$$[\mathrm{ProductIsRationalSeries} \stackrel{\mathrm{tex}}{\to} \text{“ProductIsRationalSeries”}]$$

$$[\mathrm{TimesF} \stackrel{\mathrm{tex}}{\to} \text{“TimesF”}]$$

$$[-\mathrm{x} + (1/2)\mathrm{x} = -(1/2)\mathrm{x} \stackrel{\mathrm{tex}}{\to} \text{“-x+(1/2)x=-(1/2)x”}]$$

$$[\mathrm{ClosetolessIsLess} \stackrel{\mathrm{tex}}{\to} \text{“ClosetolessIsLess”}]$$

$$[\mathrm{SubLessLeft(F)} \stackrel{\mathrm{tex}}{\to} \text{“SubLessLeft(F)”}]$$

$$[\mathrm{SubLessLeft(R)} \stackrel{\mathrm{tex}}{\to} \text{“SubLessLeft(R)”}]$$

$$[\mathrm{ClosetogreaterIsGreater} \stackrel{\mathrm{tex}}{\to} \text{“ClosetogreaterIsGreater”}]$$

$$[\mathrm{SubLessRight(F)} \stackrel{\mathrm{tex}}{\to} \text{“SubLessRight(F)”}]$$

$$[\mathrm{SubLessRight(R)} \stackrel{\mathrm{tex}}{\to} \text{“SubLessRight(R)”}]$$

$$[\mathrm{PositiveTripled} \stackrel{\mathrm{tex}}{\to} \text{“PositiveTripled”}]$$

$$[\mathrm{PositiveDividedBy3} \stackrel{\mathrm{tex}}{\to} \text{“PositiveDividedBy3”}]$$

$$[|\mathrm{x} - \mathrm{x}| = 0 \stackrel{\mathrm{tex}}{\to} \text{“|x-x|=0”}]$$

$$[1 < 2 \stackrel{\mathrm{tex}}{\to} \text{“1<2”}]$$

$$[1/3 < 2/3 \stackrel{\mathrm{tex}}{\to} \text{“1/3<2/3”}]$$

$$[(1/3)\mathrm{x} + (1/3)\mathrm{x} = (2/3)\mathrm{x} \stackrel{\mathrm{tex}}{\to} \text{“(1/3)x+(1/3)x=(2/3)x”}]$$

$$[(2/3)\mathrm{x} + (1/3)\mathrm{x} = \mathrm{x} \stackrel{\mathrm{tex}}{\to} \text{“(2/3)x+(1/3)x=x”}]$$

$$[-\mathrm{x} + (2/3)\mathrm{x} = -(1/3)\mathrm{x} \stackrel{\mathrm{tex}}{\to} \text{“-x+(2/3)x=-(1/3)x”}]$$

$$[\mathrm{PreserveLessGreater} \stackrel{\mathrm{tex}}{\to} \text{“PreserveLessGreater”}]$$

$$[-(1/3)\mathrm{x} - (1/3)\mathrm{x} = -(2/3)\mathrm{x} \stackrel{\mathrm{tex}}{\to} \text{“-(1/3)x-(1/3)x=-(2/3)x”}]$$

$$[-\mathrm{x} + (1/3)\mathrm{x} = -(2/3)\mathrm{x} \stackrel{\mathrm{tex}}{\to} \text{“-x+(1/3)x=-(2/3)x”}]$$

$$[\mathrm{plus0Left} \stackrel{\mathrm{tex}}{\to} \text{“plus0Left”}]$$

$$[\mathrm{times1Left} \stackrel{\mathrm{tex}}{\to} \text{“times1Left”}]$$

$$[\mathrm{EqAdditionLeft} \stackrel{\mathrm{tex}}{\to} \text{“EqAdditionLeft”}]$$

$$[\mathrm{EqMultiplicationLeft} \stackrel{\mathrm{tex}}{\to} \text{“EqMultiplicationLeft”}]$$

$$[\mathrm{PlusF(Sym)} \stackrel{\mathrm{tex}}{\to} \text{“PlusF(Sym)”}]$$

[TimesF(Sym) $\stackrel{\text{tex}}{\rightarrow}$ "TimesF(Sym)"]

[SameSeries(Gen) $\stackrel{\text{tex}}{\rightarrow}$ "SameSeries(Gen)"]

[EqualsSameF $\stackrel{\text{tex}}{\rightarrow}$ "EqualsSameF"]

[LeqReflexivity(R) $\stackrel{\text{tex}}{\rightarrow}$ "LeqReflexivity(R)"]