SUPSUPSUPSUPSUPSUPSUPSUPSUPSUPSUPSUPSUPSUPSUP

[RemoveOr $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{a}\colon \dot{\neg}(\underline{a})n \Rightarrow \underline{a} \vdash \underline{a}$]

[RemoveOr $\overset{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{a}\colon \dot{\neg}(\underline{a})n \Rightarrow \underline{a} \vdash$ Repetition $\rhd \dot{\neg}(\underline{a})n \Rightarrow \underline{a} \gg \dot{\neg}(\underline{a})n \Rightarrow \underline{a}$; AutoImply $\gg \underline{a} \Rightarrow \underline{a}$; FromNegations $\rhd \underline{a} \Rightarrow \underline{a} \rhd \dot{\neg}(\underline{a})n \Rightarrow \underline{a} \gg \underline{a}\rceil, p_0, c)$]

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

[leqTransitivity $\overset{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} <= \underline{y} \vdash \underline{y} <= \underline{z} \vdash$ leqTransitivityAxiom $\gg \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{z} \Rightarrow \underline{x} <= \underline{z}$; MP2 $\rhd \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{z} \Rightarrow \underline{x} <= \underline{z} \rhd \underline{x} <= \underline{y} \rhd \underline{y} <= \underline{z} \gg \underline{x} <= \underline{z}\rceil, p_0, c)$]

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

[leqAntisymmetry $\overset{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \underline{x} <= \underline{y} \vdash \underline{y} <= \underline{x} \vdash$ leqAntisymmetryAxiom $\gg \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{x} \Rightarrow \underline{x} = \underline{y}$; MP2 $\rhd \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{x} \Rightarrow \underline{x} = \underline{y} \rhd \underline{x} <= \underline{y} \rhd \underline{y} <= \underline{x} \gg \underline{x} = \underline{y}\rceil, p_0, c)$]

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

[leqAddition $\overset{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} <= \underline{y} \vdash$ leqAdditionAxiom $\gg \underline{x} <= \underline{y} \Rightarrow (\underline{x} + \underline{z}) <= (\underline{y} + \underline{z})$; MP $\rhd \underline{x} <= \underline{y} \Rightarrow (\underline{x} + \underline{z}) <= (\underline{y} + \underline{z}) \rhd \underline{x} <= \underline{y} \gg (\underline{x} + \underline{z}) <= (\underline{y} + \underline{z})\rceil, p_0, c)$]

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

[leqMultiplication $\overset{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon 0 <= \underline{z} \vdash \underline{x} <= \underline{y} \vdash$ leqMultiplicationAxiom $\gg 0 <= \underline{z} \Rightarrow \underline{x} <= \underline{y} \Rightarrow (\underline{x} * \underline{z}) <= (\underline{y} * \underline{z})$; MP2 $\rhd 0 <= \underline{z} \Rightarrow \underline{x} <= \underline{y} \Rightarrow (\underline{x} * \underline{z}) <= (\underline{y} * \underline{z}) \rhd 0 <= \underline{z} \rhd \underline{x} <= \underline{y} \gg (\underline{x} * \underline{z}) <= (\underline{y} * \underline{z})\rceil, p_0, c)$]

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

[Reciprocal $\overset{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \dot{\neg}(\underline{x} = 0)n \vdash$ ReciprocalAxiom $\gg \dot{\neg}(\underline{x} = 0)n \Rightarrow (\underline{x} * \mathrm{rec}\underline{x}) = 1$; MP $\rhd \dot{\neg}(\underline{x} = 0)n \Rightarrow (\underline{x} * \mathrm{rec}\underline{x}) = 1 \rhd \dot{\neg}(\underline{x} = 0)n \gg (\underline{x} * \mathrm{rec}\underline{x}) = 1\rceil, p_0, c)$]

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

[eqLeq $\overset{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \underline{x} = \underline{y} \vdash$ EqLeqAxiom $\gg \underline{x} = \underline{y} \Rightarrow \underline{x} <= \underline{y}$; MP $\rhd \underline{x} = \underline{y} \Rightarrow \underline{x} <= \underline{y} \rhd \underline{x} = \underline{y} \gg \underline{x} <= \underline{y}\rceil, p_0, c)$]

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

[eqAddition $\overset{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = \underline{y} \vdash$ EqAdditionAxiom $\gg \underline{x} = \underline{y} \Rightarrow (\underline{x} + \underline{z}) = (\underline{y} + \underline{z})$; MP $\rhd \underline{x} = \underline{y} \Rightarrow (\underline{x} + \underline{z}) = (\underline{y} + \underline{z}) \rhd \underline{x} = \underline{y} \gg (\underline{x} + \underline{z}) = (\underline{y} + \underline{z})\rceil, p_0, c)$]

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

[eqMultiplication $\overset{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = \underline{y} \vdash$ EqMultiplicationAxiom $\gg \underline{x} = \underline{y} \Rightarrow (\underline{x} * \underline{z}) = (\underline{y} * \underline{z})$; MP $\rhd \underline{x} = \underline{y} \Rightarrow (\underline{x} * \underline{z}) = (\underline{y} * \underline{z}) \rhd \underline{x} = \underline{y} \gg (\underline{x} * \underline{z}) = (\underline{y} * \underline{z})\rceil, p_0, c)$]

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

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

$\underline{y} \rhd \underline{x} = \underline{z} \gg \underline{y} = \underline{z}\rceil, p_0, c)]$

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

$[\mathrm{eqReflexivity} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \mathrm{leqReflexivity} \gg \underline{x} <= \underline{x}; \mathrm{leqAntisymmetry} \rhd \underline{x} <= \underline{x} \rhd \underline{x} <= \underline{x} \gg \underline{x} = \underline{x}\rceil, p_0, c)]$

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

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

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

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

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

$[\mathrm{eqTransitivity4} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \forall \underline{u}\colon \underline{x} = \underline{y} \vdash \underline{y} = \underline{z} \vdash \underline{z} = \underline{u} \vdash \mathrm{eqTransitivity} \rhd \underline{x} = \underline{y} \rhd \underline{y} = \underline{z} \gg \underline{x} = \underline{z}; \mathrm{eqTransitivity} \rhd \underline{x} = \underline{z} \rhd \underline{z} = \underline{u} \gg \underline{x} = \underline{u}\rceil, p_0, c)]$

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

$[\mathrm{eqTransitivity5} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \forall \underline{u}\colon \forall \underline{v}\colon \underline{x} = \underline{y} \vdash \underline{y} = \underline{z} \vdash \underline{z} = \underline{u} \vdash \underline{u} = \underline{v} \vdash \mathrm{eqTransitivity4} \rhd \underline{x} = \underline{y} \rhd \underline{y} = \underline{z} \rhd \underline{z} = \underline{u} \gg \underline{x} = \underline{u}; \mathrm{eqTransitivity} \rhd \underline{x} = \underline{u} \rhd \underline{u} = \underline{v} \gg \underline{x} = \underline{v}\rceil, p_0, c)]$

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

$[\mathrm{eqTransitivity6} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \forall \underline{u}\colon \forall \underline{v}\colon \forall \underline{w}\colon \underline{x} = \underline{y} \vdash \underline{y} = \underline{z} \vdash \underline{z} = \underline{u} \vdash \underline{u} = \underline{v} \vdash \underline{v} = \underline{w} \vdash \mathrm{eqTransitivity5} \rhd \underline{x} = \underline{y} \rhd \underline{y} = \underline{z} \rhd \underline{z} = \underline{u} \rhd \underline{u} = \underline{v} \gg \underline{x} = \underline{v}; \mathrm{eqTransitivity} \rhd \underline{x} = \underline{v} \rhd \underline{v} = \underline{w} \gg \underline{x} = \underline{w}\rceil, p_0, c)]$

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

$[\mathrm{Induction} \overset{\mathrm{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \overline{(v1)}\colon \forall \underline{a}\colon \forall \underline{b}\colon \forall \underline{c}\colon \langle \underline{b} \equiv \underline{a} | \overline{(v1)} {:==} 0\rangle_{\mathrm{Me}} \Vdash \langle \underline{c} \equiv \underline{a} | \overline{(v1)} {:==} (\overline{(v1)} + 1)\rangle_{\mathrm{Me}} \Vdash \underline{b} \vdash \underline{a} \Rightarrow \underline{c} \vdash \mathrm{Gen} \rhd \underline{a} \Rightarrow \underline{c} \gg \forall_{\mathrm{obj}} \overline{(v1)}\colon \underline{a} \Rightarrow \underline{c}; \mathrm{InductionAxiom} \unrhd \langle \underline{b} \equiv \underline{a} | \overline{(v1)} {:==} 0\rangle_{\mathrm{Me}} \unrhd \langle \underline{c} \equiv \underline{a} | \overline{(v1)} {:==} (\overline{(v1)} + 1)\rangle_{\mathrm{Me}} \gg \underline{b} \Rightarrow \forall_{\mathrm{obj}} \overline{(v1)}\colon \underline{a} \Rightarrow \underline{c} \Rightarrow \forall_{\mathrm{obj}} \overline{(v1)}\colon \underline{a}; \mathrm{MP2} \rhd \underline{b} \Rightarrow \forall_{\mathrm{obj}} \overline{(v1)}\colon \underline{a} \Rightarrow \underline{c} \Rightarrow \forall_{\mathrm{obj}} \overline{(v1)}\colon \underline{a} \rhd \underline{b} \rhd \forall_{\mathrm{obj}} \overline{(v1)}\colon \underline{a} \Rightarrow \underline{c} \gg \forall_{\mathrm{obj}} \overline{(v1)}\colon \underline{a}; \mathrm{A4} @ \overline{(v1)} \rhd \forall_{\mathrm{obj}} \overline{(v1)}\colon \underline{a} \gg \underline{a}\rceil, p_0, c)]$

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

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

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

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

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

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

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

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

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

$[\text{IntroExist(Helper)} \overset{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash$
$\forall\underline{\mathsf{x}}\colon \forall\underline{(v1)}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \langle\dot{\neg}(\underline{\mathsf{a}})n \equiv \dot{\neg}(\underline{\mathsf{b}})n | \underline{(v1)} {:=}{=} \underline{\mathsf{x}}\rangle_{Me} \Vdash \forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{b}})n \vdash \text{A4} @ \underline{\mathsf{x}} \unrhd$
$\langle\dot{\neg}(\underline{\mathsf{a}})n \equiv \dot{\neg}(\underline{\mathsf{b}})n | \underline{(v1)} {:=}{=} \underline{\mathsf{x}}\rangle_{Me} \rhd \forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{b}})n \gg \dot{\neg}(\underline{\mathsf{a}})n; \forall\underline{\mathsf{x}}\colon \forall\underline{(v1)}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \text{Ded} \rhd$
$\forall\underline{\mathsf{x}}\colon \forall\underline{(v1)}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \langle\dot{\neg}(\underline{\mathsf{a}})n \equiv \dot{\neg}(\underline{\mathsf{b}})n | \underline{(v1)} {:=}{=} \underline{\mathsf{x}}\rangle_{Me} \Vdash \forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{b}})n \vdash \dot{\neg}(\underline{\mathsf{a}})n \gg$
$\langle\dot{\neg}(\underline{\mathsf{a}})n \equiv \dot{\neg}(\underline{\mathsf{b}})n | \underline{(v1)} {:=}{=} \underline{\mathsf{x}}\rangle_{Me} \Vdash \forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{b}})n \Rightarrow \dot{\neg}(\underline{\mathsf{a}})n\rceil, p_0, \mathsf{c})]$

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

$[\text{IntroExist} \overset{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash$
$\forall\underline{\mathsf{x}}\colon \forall\underline{(v1)}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \langle\dot{\neg}(\underline{\mathsf{a}})n \equiv \dot{\neg}(\underline{\mathsf{b}})n | \underline{(v1)} {:=}{=} \underline{\mathsf{x}}\rangle_{Me} \Vdash \text{IntroExist(Helper)} @ \underline{\mathsf{x}} \unrhd$
$\langle\dot{\neg}(\underline{\mathsf{a}})n \equiv \dot{\neg}(\underline{\mathsf{b}})n | \underline{(v1)} {:=}{=} \underline{\mathsf{x}}\rangle_{Me} \gg \forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{b}})n \Rightarrow \dot{\neg}(\underline{\mathsf{a}})n; \underline{\mathsf{a}} \vdash$
$\text{AddDoubleNeg} \rhd \underline{\mathsf{a}} \gg \dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})n)n; \text{MT} \rhd \forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{b}})n \Rightarrow \dot{\neg}(\underline{\mathsf{a}})n \rhd$
$\dot{\neg}(\dot{\neg}(\underline{\mathsf{a}})n)n \gg \dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{b}})n)n; \text{Repetition} \rhd \dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{b}})n)n \gg$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{b}})n)n\rceil, p_0, \mathsf{c})]$

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

$[\text{ExistMP} \overset{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{(v1)}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n)n \vdash \dot{\neg}(\underline{\mathsf{b}})n \vdash \text{MT} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \dot{\neg}(\underline{\mathsf{b}})n \gg \dot{\neg}(\underline{\mathsf{a}})n; \text{Gen} \rhd \dot{\neg}(\underline{\mathsf{a}})n \gg$
$\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n; \text{Repetition} \rhd \dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n)n \gg$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n)n; \text{FromContradiction} \rhd \forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n \rhd$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n)n \gg \dot{\neg}(\dot{\neg}(\underline{\mathsf{b}})n)n; \forall\underline{(v1)}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \text{Ded} \rhd \forall\underline{(v1)}\colon \forall\underline{\mathsf{a}}\colon \forall\underline{\mathsf{b}}\colon \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n)n \vdash \dot{\neg}(\underline{\mathsf{b}})n \vdash \dot{\neg}(\dot{\neg}(\underline{\mathsf{b}})n)n \gg \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow \dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n)n \Rightarrow$
$\dot{\neg}(\underline{\mathsf{b}})n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{b}})n)n; \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash \dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n)n \vdash \text{MP2} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \Rightarrow$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n)n \Rightarrow \dot{\neg}(\underline{\mathsf{b}})n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{b}})n)n \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \rhd \dot{\neg}(\forall_{obj}\underline{(v1)}\colon \dot{\neg}(\underline{\mathsf{a}})n)n \gg$
$\dot{\neg}(\underline{\mathsf{b}})n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{b}})n)n; \text{prop lemma imply negation} \rhd \dot{\neg}(\underline{\mathsf{b}})n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{\mathsf{b}})n)n \gg$
$\dot{\neg}(\dot{\neg}(\underline{\mathsf{b}})n)n; \text{RemoveDoubleNeg} \rhd \dot{\neg}(\dot{\neg}(\underline{\mathsf{b}})n)n \gg \underline{\mathsf{b}}\rceil, p_0, \mathsf{c})]$

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

[ExistMP2 $\overset{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{(v1)}\colon \forall \underline{(v2)}\colon \forall \underline{a}\colon \forall \underline{b}\colon \forall \underline{c}\colon \underline{a} \Rightarrow \underline{b} \Rightarrow \underline{c} \vdash \dot{\neg}(\forall_{\text{obj}} \underline{(v1)}\colon \dot{\neg}(\underline{a})n)n \vdash \dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{b})n)n \vdash \text{ExistMP} \rhd \underline{a} \Rightarrow \underline{b} \Rightarrow \underline{c} \rhd \dot{\neg}(\forall_{\text{obj}} \underline{(v1)}\colon \dot{\neg}(\underline{a})n)n \gg \underline{b} \Rightarrow \underline{c}; \text{ExistMP} \rhd \underline{b} \Rightarrow \underline{c} \rhd \dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{b})n)n \gg \underline{c}\rceil, p_0, c)$]

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

[TwiceExistMP $\overset{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{(v2)}\colon \forall \underline{a}\colon \forall \underline{b}\colon \underline{a} \Rightarrow \underline{b} \vdash \dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n \vdash \text{ExistMP} \rhd \underline{a} \Rightarrow \underline{b} \rhd \dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n \gg \underline{b}; \forall \underline{(v1)}\colon \forall \underline{(v2)}\colon \forall \underline{a}\colon \forall \underline{b}\colon \text{Ded} \rhd \forall \underline{(v2)}\colon \forall \underline{a}\colon \forall \underline{b}\colon \underline{a} \Rightarrow \underline{b} \vdash \dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n \vdash \underline{b} \gg \underline{a} \Rightarrow \underline{b} \Rightarrow \dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n \Rightarrow \underline{b}; \underline{a} \Rightarrow \underline{b} \vdash \dot{\neg}(\forall_{\text{obj}} \underline{(v1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n)n)n \vdash \text{MP} \rhd \underline{a} \Rightarrow \underline{b} \Rightarrow \dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n \Rightarrow \underline{b} \rhd \underline{a} \Rightarrow \underline{b} \gg \dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n \Rightarrow \underline{b}; \text{ExistMP} \rhd \dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n \Rightarrow \underline{b} \rhd \dot{\neg}(\forall_{\text{obj}} \underline{(v1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n)n)n \gg \underline{b}\rceil, p_0, c)$]

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

[TwiceExistMP2 $\overset{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{(v1)}\colon \forall \underline{(v2)}\colon \forall \underline{(v3)}\colon \forall \underline{(v4)}\colon \forall \underline{a}\colon \forall \underline{b}\colon \forall \underline{c}\colon \underline{a} \Rightarrow \underline{b} \Rightarrow \underline{c} \vdash \dot{\neg}(\forall_{\text{obj}} \underline{(v1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n)n)n \vdash \dot{\neg}(\forall_{\text{obj}} \underline{(v3)}\colon \dot{\neg}(\dot{\neg}(\forall_{\text{obj}} \underline{(v4)}\colon \dot{\neg}(\underline{b})n)n)n)n \vdash \text{TwiceExistMP} \rhd \underline{a} \Rightarrow \underline{b} \Rightarrow \underline{c} \rhd \dot{\neg}(\forall_{\text{obj}} \underline{(v1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\text{obj}} \underline{(v2)}\colon \dot{\neg}(\underline{a})n)n)n)n \gg \underline{b} \Rightarrow \underline{c}; \text{TwiceExistMP} \rhd \underline{b} \Rightarrow \underline{c} \rhd \dot{\neg}(\forall_{\text{obj}} \underline{(v3)}\colon \dot{\neg}(\dot{\neg}(\forall_{\text{obj}} \underline{(v4)}\colon \dot{\neg}(\underline{b})n)n)n)n \gg \underline{c}\rceil, p_0, c)$]

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

[NeqSymmetry $\overset{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \underline{y} = \underline{x} \vdash \text{eqSymmetry} \rhd \underline{y} = \underline{x} \gg \underline{x} = \underline{y}; \forall \underline{x}\colon \forall \underline{y}\colon \text{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \underline{y} = \underline{x} \vdash \underline{x} = \underline{y} \gg \underline{y} = \underline{x} \Rightarrow \underline{x} = \underline{y}; \dot{\neg}(\underline{x} = \underline{y})n \vdash \text{MT} \rhd \underline{y} = \underline{x} \Rightarrow \underline{x} = \underline{y} \rhd \dot{\neg}(\underline{x} = \underline{y})n \gg \dot{\neg}(\underline{y} = \underline{x})n\rceil, p_0, c)$]

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

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

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

[InPair(1) $\overset{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{(sx)}\colon \forall \underline{(sy)}\colon \text{eqReflexivity} \gg \underline{(sx)} = \underline{(sx)}; \text{WeakenOr2} \rhd \underline{(sx)} = \underline{(sx)} \gg \dot{\neg}(\underline{(sx)} = \underline{(sx)})n \Rightarrow \underline{(sx)} = \underline{(sy)}; \text{Formula2Pair} \rhd \dot{\neg}(\underline{(sx)} = \underline{(sx)})n \Rightarrow \underline{(sx)} = \underline{(sy)} \gg \underline{(sx)} \in \{\underline{(sx)}, \underline{(sy)}\}\rceil, p_0, c)$]

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

[InPair(2) $\overset{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{(sx)}\colon \forall \underline{(sy)}\colon \text{eqReflexivity} \gg \underline{(sy)} = \underline{(sy)}; \text{WeakenOr1} \rhd \underline{(sy)} = \underline{(sy)} \gg \dot{\neg}(\underline{(sy)} = \underline{(sx)})n \Rightarrow \underline{(sy)} = \underline{(sy)}; \text{Formula2Pair} \rhd \dot{\neg}(\underline{(sy)} = \underline{(sx)})n \Rightarrow \underline{(sy)} = \underline{(sy)} \gg \underline{(sy)} \in$

{(sx), (sy)}⌉, p_0, c)]

[FromSingleton $\overset{\text{stmt}}{\to}$ SystemQ ⊢ ∀(sx): ∀(sy): (sx) ∈ {(sy), (sy)} ⊢ (sx) = (sy)]

[FromSingleton $\overset{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(sx): ∀(sy): (sx) ∈ {(sy), (sy)} ⊢ Repetition ⊳ (sx) ∈ {(sy), (sy)} ≫ (sx) ∈ {(sy), (sy)}; Pair2Formula ⊳ (sx) ∈ {(sy), (sy)} ≫ ¬̇ ((sx) = (sy))n ⇒ (sx) = (sy); RemoveOr ⊳ ¬̇ ((sx) = (sy))n ⇒ (sx) = (sy) ≫ (sx) = (sy)⌉, p_0, c)]

[ToSingleton $\overset{\text{stmt}}{\to}$ SystemQ ⊢ ∀(sx): ∀(sy): (sx) = (sy) ⊢ (sx) ∈ {(sy), (sy)}]

[ToSingleton $\overset{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(sx): ∀(sy): (sx) = (sy) ⊢ WeakenOr1 ⊳ (sx) = (sy) ≫ ¬̇ ((sx) = (sy))n ⇒ (sx) = (sy); Formula2Pair ⊳ ¬̇ ((sx) = (sy))n ⇒ (sx) = (sy) ≫ (sx) ∈ {(sy), (sy)}; Repetition ⊳ (sx) ∈ {(sy), (sy)} ≫ (sx) ∈ {(sy), (sy)}⌉, p_0, c)]

[FromSameSingleton $\overset{\text{stmt}}{\to}$ SystemQ ⊢ ∀(sx): ∀(sy): {(sx), (sx)} = {(sy), (sy)} ⊢ (sx) = (sy)]

[FromSameSingleton $\overset{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(sx): ∀(sy): {(sx), (sx)} = {(sy), (sy)} ⊢ eqReflexivity ≫ (sx) = (sx); ToSingleton ⊳ (sx) = (sx) ≫ (sx) ∈ {(sx), (sx)}; SENC1 ⊳ {(sx), (sx)} = {(sy), (sy)} ⊳ (sx) ∈ {(sx), (sx)} ≫ (sx) ∈ {(sy), (sy)}; FromSingleton ⊳ (sx) ∈ {(sy), (sy)} ≫ (sx) = (sy)⌉, p_0, c)]

[SingletonmembersEqual $\overset{\text{stmt}}{\to}$ SystemQ ⊢ ∀(sx): ∀(sy): ∀(sz): {(sx), (sy)} = {(sz), (sz)} ⊢ (sx) = (sy)]

[SingletonmembersEqual $\overset{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(sx): ∀(sy): ∀(sz): {(sx), (sy)} = {(sz), (sz)} ⊢ InPair(1) ≫ (sx) ∈ {(sx), (sy)}; SENC1 ⊳ {(sx), (sy)} = {(sz), (sz)} ⊳ (sx) ∈ {(sx), (sy)} ≫ (sx) ∈ {(sz), (sz)}; FromSingleton ⊳ (sx) ∈ {(sz), (sz)} ≫ (sx) = (sz); InPair(2) ≫ (sy) ∈ {(sx), (sy)}; SENC1 ⊳ {(sx), (sy)} = {(sz), (sz)} ⊳ (sy) ∈ {(sx), (sy)} ≫ (sy) ∈ {(sz), (sz)}; FromSingleton ⊳ (sy) ∈ {(sz), (sz)} ≫ (sy) = (sz); eqSymmetry ⊳ (sy) = (sz) ≫ (sz) = (sy); eqTransitivity ⊳ (sx) = (sz) ⊳ (sz) = (sy) ≫ (sx) = (sy)⌉, p_0, c)]

[UnequalsNotInSingleton $\overset{\text{stmt}}{\to}$ SystemQ ⊢ ∀(sx): ∀(sy): ∀(sz): ¬̇ ((sx) = (sy))n ⊢ ¬̇ ({(sx), (sy)} = {(sz), (sz)})n]

[UnequalsNotInSingleton $\overset{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(sx): ∀(sy): ∀(sz): {(sx), (sy)} = {(sz), (sz)} ⊢ SingletonmembersEqual ⊳ {(sx), (sy)} = {(sz), (sz)} ≫ (sx) = (sy); ∀(sx): ∀(sy): ∀(sz): Ded ⊳ ∀(sx): ∀(sy): ∀(sz): {(sx), (sy)} = {(sz), (sz)} ⊢ (sx) = (sy) ≫ {(sx), (sy)} = {(sz), (sz)} ⇒ (sx) = (sy); ¬̇ ((sx) = (sy))n ⊢ MT ⊳ {(sx), (sy)} = {(sz), (sz)} ⇒ (sx) = (sy) ⊳ ¬̇ ((sx) = (sy))n ≫ ¬̇ ({(sx), (sy)} = {(sz), (sz)})n⌉, p_0, c)]

[NonsingletonmembersUnequal $\overset{\text{stmt}}{\to}$ SystemQ ⊢ ∀(sx): ∀(sy): ¬̇ ({(sx), (sy)} = {(sx), (sx)})n ⊢ ¬̇ ((sx) = (sy))n]

[NonsingletonmembersUnequal $\overset{\text{proof}}{\to}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(sx): ∀(sy): (sx) = (sy) ⊢ eqReflexivity ≫ (sx) = (sx); SamePair ⊳ (sx) = (sx) ⊳ (sx) = (sy) ≫ {(sx), (sx)} = {(sx), (sy)}; Repetition ⊳ {(sx), (sx)} = {(sx), (sy)} ≫

{(sx), (sx)} = {(sx), (sy)}; eqSymmetry ▷ {(sx), (sx)} = {(sx), (sy)} ≫ {(sx), (sy)} = {(sx), (sx)}; ∀(sx): ∀(sy): Ded ▷ ∀(sx): ∀(sy): (sx) = (sy) ⊢ {(sx), (sy)} = {(sx), (sx)} ≫ (sx) = (sy) ⇒ {(sx), (sy)} = {(sx), (sx)}; $\dot{\neg}$ ({(sx), (sy)} = {(sx), (sx)})n ⊢ MT ▷ (sx) = (sy) ⇒ {(sx), (sy)} = {(sx), (sx)} ▷ $\dot{\neg}$ ({(sx), (sy)} = {(sx), (sx)})n ≫ $\dot{\neg}$ ((sx) = (sy))n⌉, p_0, c)]

[FromOrderedPair $\stackrel{\text{stmt}}{\to}$ SystemQ ⊢ ∀(sx): ∀(sx1): ∀(sy): ∀(sy1): {{(sx), (sx)}, {(sx), (sy)}} = {{(sx1), (sx1)}, {(sx1), (sy1)}} ⊢ $\dot{\neg}$ ((sx) = (sx1) ⇒ $\dot{\neg}$ ((sy) = (sy1))n)n]

[FromOrderedPair $\stackrel{\text{proof}}{\to}$ λc.λx.$\mathcal{P}$(⌈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) ≫ ¬̇((sx) = (sx1) ⇒ ¬̇((sy) =
(sy1))n)n; ∀(sx): ∀(sx1): ∀(sy): ∀(sy1): ¬̇((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)} ∈
{{(sx1), (sx1)}, {(sx1), (sy1)}} ≫ ¬̇({(sx), (sx)} = {(sx1), (sx1)})n ⇒
{(sx), (sx)} = {(sx1), (sy1)}; UnequalsNotInSingleton ▷ ¬̇((sx1) = (sy1))n ≫
¬̇({(sx1), (sy1)} = {(sx), (sx)})n; NeqSymmetry ▷ ¬̇({(sx1), (sy1)} =
{(sx), (sx)})n ≫ ¬̇({(sx), (sx)} =
{(sx1), (sy1)})n; NegateDisjunct2 ▷ ¬̇({(sx), (sx)} = {(sx1), (sx1)})n ⇒
{(sx), (sx)} = {(sx1), (sy1)} ▷ ¬̇({(sx), (sx)} = {(sx1), (sy1)})n ≫ {(sx), (sx)} =
{(sx1), (sx1)}; FromSameSingleton ▷ {(sx), (sx)} = {(sx1), (sx1)} ≫ (sx) =
(sx1); InPair(2) ≫ {(sx1), (sy1)} ∈ {{(sx1), (sx1)}, {(sx1), (sy1)}}; SENC2 ▷
{{(sx), (sx)}, {(sx), (sy)}} = {{(sx1), (sx1)}, {(sx1), (sy1)}} ▷ {(sx1), (sy1)} ∈
{{(sx1), (sx1)}, {(sx1), (sy1)}} ≫ {(sx1), (sy1)} ∈
{{(sx), (sx)}, {(sx), (sy)}}; Pair2Formula ▷ {(sx1), (sy1)} ∈
{{(sx), (sx)}, {(sx), (sy)}} ≫ ¬̇({(sx1), (sy1)} = {(sx), (sx)})n ⇒
{(sx1), (sy1)} = {(sx), (sy)}; NegateDisjunct1 ▷ ¬̇({(sx1), (sy1)} =
{(sx), (sx)})n ⇒ {(sx1), (sy1)} = {(sx), (sy)} ▷ ¬̇({(sx1), (sy1)} =
{(sx), (sx)})n ≫ {(sx1), (sy1)} = {(sx), (sy)}; InPair(2) ≫ (sy) ∈
{(sx), (sy)}; SENC2 ▷ {(sx1), (sy1)} = {(sx), (sy)} ▷ (sy) ∈ {(sx), (sy)} ≫
(sy) ∈ {(sx1), (sy1)}; Pair2Formula ▷ (sy) ∈ {(sx1), (sy1)} ≫ ¬̇((sy) =
(sx1))n ⇒ (sy) = (sy1); UnequalsNotInSingleton ▷ ¬̇((sx1) = (sy1))n ≫
¬̇({(sx1), (sy1)} = {(sx), (sx)})n; SubNeqLeft ▷ {(sx1), (sy1)} =
{(sx), (sy)} ▷ ¬̇({(sx1), (sy1)} = {(sx), (sx)})n ≫ ¬̇({(sx), (sy)} =
{(sx), (sx)})n; NonsingletonmembersUnequal ▷ ¬̇({(sx), (sy)} =
{(sx), (sx)})n ≫ ¬̇((sx) = (sy))n; SubNeqLeft ▷ (sx) = (sx1) ▷ ¬̇((sx) =
(sy))n ≫ ¬̇((sx1) = (sy))n; NeqSymmetry ▷ ¬̇((sx1) = (sy))n ≫ ¬̇((sy) =
(sx1))n; NegateDisjunct1 ▷ ¬̇((sy) = (sx1))n ⇒ (sy) = (sy1) ▷ ¬̇((sy) =
(sx1))n ≫ (sy) = (sy1); JoinConjuncts ▷ (sx) = (sx1) ▷ (sy) = (sy1) ≫
¬̇((sx) = (sx1) ⇒ ¬̇((sy) =
(sy1))n)n; ∀(sx): ∀(sx1): ∀(sy): ∀(sy1): Ded ▷ ∀(sx): ∀(sx1): ∀(sy): ∀(sy1): (sx1) =
(sy1) ⊢ {{(sx), (sx)}, {(sx), (sy)}} = {{(sx1), (sx1)}, {(sx1), (sy1)}} ⊢ ¬̇((sx) =
(sx1) ⇒ ¬̇((sy) = (sy1))n)n ≫ (sx1) = (sy1) ⇒ {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}} ⇒ ¬̇((sx) = (sx1) ⇒ ¬̇((sy) =
(sy1))n)n; Ded ▷ ∀(sx): ∀(sx1): ∀(sy): ∀(sy1): ¬̇((sx1) = (sy1))n ⊢
{{(sx), (sx)}, {(sx), (sy)}} = {{(sx1), (sx1)}, {(sx1), (sy1)}} ⊢ ¬̇((sx) =
(sx1) ⇒ ¬̇((sy) = (sy1))n)n ≫ ¬̇((sx1) = (sy1))n ⇒
{{(sx), (sx)}, {(sx), (sy)}} = {{(sx1), (sx1)}, {(sx1), (sy1)}} ⇒ ¬̇((sx) =
(sx1) ⇒ ¬̇((sy) = (sy1))n)n; {{(sx), (sx)}, {(sx), (sy)}} =
{{(sx1), (sx1)}, {(sx1), (sy1)}} ⊢ FromNegations ▷ (sx1) = (sy1) ⇒
{{(sx), (sx)}, {(sx), (sy)}} = {{(sx1), (sx1)}, {(sx1), (sy1)}} ⇒ ¬̇((sx) =
(sx1) ⇒ ¬̇((sy) = (sy1))n)n ▷ ¬̇((sx1) = (sy1))n ⇒

$\{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \gg \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}; \mathrm{MP} \rhd \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n} \rhd \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \gg \dot{\neg}\,(\underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{sy})} = \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromOrderedPair}(1) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sx1})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sy1})}\colon \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sx1})}\},\{\underline{(\mathrm{sx1})},\underline{(\mathrm{sy1})}\}\} \vdash \underline{(\mathrm{sx})} = \underline{(\mathrm{sx1})}]$

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

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

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

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

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

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

$[\mathrm{ToBinaryUnion}(1) \overset{\mathrm{proof}}{\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\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} \mathbin{@} \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})]$

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

$[\mathrm{ToBinaryUnion}(2) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sz})}\colon\forall\underline{(\mathrm{su})}\colon \underline{(\mathrm{sx})} \in$

(sz) ⊢ InPair(2) ≫ (sz) ∈ {(sy), (sz)}; JoinConjuncts ▷ (sx) ∈ (sz) ▷ (sz) ∈ {(sy), (sz)} ≫ ¬̇((sx) ∈ (sz) ⇒ ¬̇((sz) ∈ {(sy), (sz)})n)n; IntroExist @ (sz) ▷ ¬̇((sx) ∈ (sz) ⇒ ¬̇((sz) ∈ {(sy), (sz)})n)n ≫ ¬̇($\forall_{obj}$(su): ¬̇(¬̇((sx) ∈ (su) ⇒ ¬̇((su) ∈ {(sy), (sz)})n)n)n)n; Formula2Union ▷ ¬̇($\forall_{obj}$(su): ¬̇(¬̇((sx) ∈ (su) ⇒ ¬̇((su) ∈ {(sy), (sz)})n)n)n)n ≫ (sx) ∈ Union({(sy), (sz)}); Repetition ▷ (sx) ∈ Union({(sy), (sz)}) ≫ (sx) ∈ Union({(sy), (sz)})⌉, p_0, c)]

[FromOrderedPair(TwoLevels) $\overset{stmt}{\to}$ SystemQ ⊢ ∀(sx): ∀(sy): ∀(sz): ∀(su): (sx) ∈ (sy) ⊢ (sy) ∈ {{(sz), (sz)}, {(sz), (su)}} ⊢ ¬̇((sx) = (sz))n ⇒ (sx) = (su)]

[FromOrderedPair(TwoLevels) $\overset{proof}{\to}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢ ∀(sx): ∀(sy): ∀(sz): ∀(su): (sx) ∈ (sy) ⊢ (sy) ∈ {{(sz), (sz)}, {(sz), (su)}} ⊢ Repetition ▷ (sy) ∈ {{(sz), (sz)}, {(sz), (su)}} ≫ (sy) ∈ {{(sz), (sz)}, {(sz), (su)}}; Pair2Formula ▷ (sy) ∈ {{(sz), (sz)}, {(sz), (su)}} ≫ ¬̇((sy) = {(sz), (sz)})n ⇒ (sy) = {(sz), (su)}; ∀(sx): ∀(sy): ∀(sz): ∀(su): (sy) = {(sz), (sz)} ⊢ (sx) ∈ (sy) ⊢ SENC1 ▷ (sy) = {(sz), (sz)} ▷ (sx) ∈ (sy) ≫ (sx) ∈ {(sz), (sz)}; FromSingleton ▷ (sx) ∈ {(sz), (sz)} ≫ (sx) = (sz); WeakenOr2 ▷ (sx) = (sz) ≫ ¬̇((sx) = (sz))n ⇒ (sx) = (su); ∀(sx): ∀(sy): ∀(sz): ∀(su): (sy) = {(sz), (su)} ⊢ (sx) ∈ (sy) ⊢ SENC1 ▷ (sy) = {(sz), (su)} ▷ (sx) ∈ (sy) ≫ (sx) ∈ {(sz), (su)}; Pair2Formula ▷ (sx) ∈ {(sz), (su)} ≫ ¬̇((sx) = (sz))n ⇒ (sx) = (su); Ded ▷ ∀(sx): ∀(sy): ∀(sz): ∀(su): (sy) = {(sz), (sz)} ⊢ (sx) ∈ (sy) ⊢ ¬̇((sx) = (sz))n ⇒ (sx) = (su) ≫ (sy) = {(sz), (sz)} ⇒ (sx) ∈ (sy) ⇒ ¬̇((sx) = (sz))n ⇒ (sx) = (su); Ded ▷ ∀(sx): ∀(sy): ∀(sz): ∀(su): (sy) = {(sz), (su)} ⊢ (sx) ∈ (sy) ⊢ ¬̇((sx) = (sz))n ⇒ (sx) = (su) ≫ (sy) = {(sz), (su)} ⇒ (sx) ∈ (sy) ⇒ ¬̇((sx) = (sz))n ⇒ (sx) = (su); FromDisjuncts ▷ ¬̇((sy) = {(sz), (sz)})n ⇒ (sy) = {(sz), (su)} ▷ (sy) = {(sz), (sz)} ⇒ (sx) ∈ (sy) ⇒ ¬̇((sx) = (sz))n ⇒ (sx) = (su) ▷ (sy) = {(sz), (su)} ⇒ (sx) ∈ (sy) ⇒ ¬̇((sx) = (sz))n ⇒ (sx) = (su) ≫ (sx) ∈ (sy) ⇒ ¬̇((sx) = (sz))n ⇒ (sx) = (su); MP ▷ (sx) ∈ (sy) ⇒ ¬̇((sx) = (sz))n ⇒ (sx) = (su) ▷ (sx) ∈ (sy) ≫ ¬̇((sx) = (sz))n ⇒ (sx) = (su)⌉, p_0, c)]

[CartProdIsRelation $\overset{stmt}{\to}$ SystemQ ⊢ ∀(sx): ∀(sy): $\forall_{obj}$(r1): (r1) ∈ {ph ∈ P(P(Union({(sx), (sy)}))) | ¬̇($\forall_{obj}$(op1): ¬̇(¬̇($\forall_{obj}$(op2): ¬̇(¬̇(¬̇((op1) ∈ (sx) ⇒ ¬̇((op2) ∈ (sy))n)n ⇒ ¬̇(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} ⇒ ¬̇($\forall_{obj}$(op1): ¬̇(¬̇($\forall_{obj}$(op2): ¬̇(¬̇(¬̇((op1) ∈ (sx) ⇒ ¬̇((op2) ∈ (sy))n)n ⇒ ¬̇((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n]

[CartProdIsRelation $\overset{proof}{\to}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢ ∀(sx): ∀(sy): (r1) ∈ {ph ∈ P(P(Union({(sx), (sy)}))) | ¬̇($\forall_{obj}$(op1): ¬̇(¬̇($\forall_{obj}$(op2): ¬̇(¬̇(¬̇((op1) ∈ (sx) ⇒ ¬̇((op2) ∈ (sy))n)n ⇒ ¬̇(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} ⊢ Sep2Formula ▷ (r1) ∈ {ph ∈ P(P(Union({(sx), (sy)}))) | ¬̇($\forall_{obj}$(op1): ¬̇(¬̇($\forall_{obj}$(op2): ¬̇(¬̇(¬̇((op1) ∈ (sx) ⇒ ¬̇((op2) ∈ (sy))n)n ⇒ ¬̇(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} ≫ ¬̇((r1) ∈ P(P(Union({(sx), (sy)}))) ⇒ ¬̇(¬̇($\forall_{obj}$(op1): ¬̇(¬̇($\forall_{obj}$(op2): ¬̇(¬̇(¬̇((op1) ∈ (sx) ⇒ ¬̇((op2) ∈ (sy))n)n ⇒ ¬̇((r1) =

$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n)n)n; \mathrm{SecondConjunct} \rhd \dot{\neg}(\overline{(r1)} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \Rightarrow \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n)n \gg$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n; \forall \underline{(sx)}: \forall \underline{(sy)}: \mathrm{Ded} \rhd$
$\forall \underline{(sx)}: \forall \underline{(sy)}: \overline{(r1)} \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \vdash$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg \overline{(r1)} \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n; \mathrm{Gen} \rhd \overline{(r1)} \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg \forall_{obj} \overline{(r1)}: \overline{(r1)} \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n; \mathrm{Repetition} \rhd$
$\forall_{obj} \overline{(r1)}: \overline{(r1)} \in \{ph \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \gg \forall_{obj} \overline{(r1)}: \overline{(r1)} \in \{ph \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(sx)}, \underline{(sy)}\}))) \mid \dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{obj} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \underline{(sx)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{FromSubset} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(sx)}: \forall \underline{(sy)}: \forall \underline{(sz)}: \forall_{obj} \overline{(s1)}: \overline{(s1)} \in$

$\underline{(\mathrm{sx})}\Rightarrow\overline{(\mathrm{s1})}\in\underline{(\mathrm{sy})}\vdash\underline{(\mathrm{sz})}\in\underline{(\mathrm{sx})}\vdash\mathrm{Repetition}\rhd\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon\overline{(\mathrm{s1})}\in\underline{(\mathrm{sx})}\Rightarrow\overline{(\mathrm{s1})}\in\underline{(\mathrm{sy})}\gg\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon\overline{(\mathrm{s1})}\in\underline{(\mathrm{sx})}\Rightarrow\overline{(\mathrm{s1})}\in\underline{(\mathrm{sy})};\mathrm{A4}\,@\,\underline{(\mathrm{sz})}\rhd\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon\overline{(\mathrm{s1})}\in\underline{(\mathrm{sx})}\Rightarrow\overline{(\mathrm{s1})}\in\underline{(\mathrm{sy})}\gg\underline{(\mathrm{sz})}\in\underline{(\mathrm{sx})}\Rightarrow\underline{(\mathrm{sz})}\in\underline{(\mathrm{sy})};\mathrm{MP}\rhd\underline{(\mathrm{sz})}\in\underline{(\mathrm{sx})}\Rightarrow\underline{(\mathrm{sz})}\in\underline{(\mathrm{sy})}\rhd\underline{(\mathrm{sz})}\in\underline{(\mathrm{sx})}\gg\underline{(\mathrm{sz})}\in\underline{(\mathrm{sy})}\rceil,\mathrm{p}_0,\mathsf{c})]$

$[\mathrm{SubsetIsRelation}\overset{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash\forall\underline{(\mathrm{sx})}\colon\forall\underline{(\mathrm{sy})}\colon\forall\underline{(\mathrm{sz})}\colon\forall\underline{(\mathrm{su})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon\overline{(\mathrm{r1})}\in\underline{(\mathrm{sx})}\Rightarrow\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\underline{(\mathrm{sz})}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\underline{(\mathrm{su})})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\overline{(\mathrm{r1})}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\vdash\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon\overline{(\mathrm{s1})}\in\underline{(\mathrm{sy})}\Rightarrow\overline{(\mathrm{s1})}\in\underline{(\mathrm{sx})}\vdash\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon\overline{(\mathrm{r1})}\in\underline{(\mathrm{sy})}\Rightarrow\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\underline{(\mathrm{sz})}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\underline{(\mathrm{su})})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\overline{(\mathrm{r1})}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\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$

$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in$
$\underline{(\mathrm{sy})} \Rightarrow \overline{(\mathrm{s1})} \in \underline{(\mathrm{sx})} \Rightarrow \overline{(\mathrm{r1})} \in \underline{(\mathrm{sy})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \underline{(\mathrm{sy})} \Rightarrow$
$\overline{(\mathrm{s1})} \in \underline{(\mathrm{sx})} \vdash \mathrm{MP2} \rhd \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in$
$\underline{(\mathrm{sy})} \Rightarrow \overline{(\mathrm{s1})} \in \underline{(\mathrm{sx})} \Rightarrow \overline{(\mathrm{r1})} \in \underline{(\mathrm{sy})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sx})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \underline{(\mathrm{sy})} \Rightarrow$
$\overline{(\mathrm{s1})} \in \underline{(\mathrm{sx})} \gg \overline{(\mathrm{r1})} \in \underline{(\mathrm{sy})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in$
$\underline{(\mathrm{sz})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Gen} \rhd \overline{(\mathrm{r1})} \in \underline{(\mathrm{sy})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\underline{(\mathrm{sy})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in$
$\underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\underline{(\mathrm{sy})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in$
$\underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{sy})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sz})} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{su})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\overline{(\mathrm{r1})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$
$[\mathrm{CPseparationIsRelation} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{a}}\colon \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sy})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in$
$\underline{(\mathrm{sx})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \underline{\mathsf{a}}\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$
$[\mathrm{CPseparationIsRelation} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{a}}\colon \forall\underline{(\mathrm{sx})}\colon \forall\underline{(\mathrm{sy})}\colon \overline{(\mathrm{s1})} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \underline{(\mathrm{sx})} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \underline{(\mathrm{sy})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \underline{\mathsf{a}}\} \vdash$
$\mathrm{Separation2formula}(1) \rhd \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{(\mathrm{sx})}, \underline{(\mathrm{sy})}\}))) \mid$

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

$\{\mathrm{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 \overline{(\mathrm{s1})} \in \{\mathrm{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}\} \gg \forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \{\mathrm{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}} \overline{(\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}((\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})]$

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

$[\mathrm{ToCartProd}(\mathrm{Helper}) \stackrel{\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$

$\underline{(sx1)} \Rightarrow \underline{(sy)} \in \underline{(sy1)} \Rightarrow \underline{(sz)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \Rightarrow \overline{(s1)} \in \underline{(sz)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})$; $\underline{(sx)} \in \underline{(sx1)} \vdash \underline{(sy)} \in \underline{(sy1)} \vdash \underline{(sz)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \vdash \mathrm{MP3} \rhd \underline{(sx)} \in \underline{(sx1)} \Rightarrow \underline{(sy)} \in \underline{(sy1)} \Rightarrow \underline{(sz)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \Rightarrow \overline{(s1)} \in \underline{(sz)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}) \rhd \underline{(sx)} \in \underline{(sx1)} \rhd \underline{(sy)} \in \underline{(sy1)} \rhd \underline{(sz)} \in \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sy)}\}\} \gg \overline{(s1)} \in \underline{(sz)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})$; $\mathrm{Gen} \rhd \overline{(s1)} \in \underline{(sz)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}) \gg \forall_{\mathrm{obj}} \overline{(s1)}\colon \overline{(s1)} \in \underline{(sz)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})$; $\mathrm{Repetition} \rhd \forall_{\mathrm{obj}} \overline{(s1)}\colon \overline{(s1)} \in \underline{(sz)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\}) \gg \forall_{\mathrm{obj}} \overline{(s1)}\colon \overline{(s1)} \in \underline{(sz)} \Rightarrow \overline{(s1)} \in \mathrm{Union}(\{\underline{(sx1)}, \underline{(sy1)}\})\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

$\{\{(sx),(sx)\},\{(sx),(sy)\}\})n)n;$ IntroExist @ $(sy) \rhd \dot{\neg}(\dot{\neg}((sx) \in (sx1) \Rightarrow$
$\dot{\neg}((sy) \in (sy1))n)n \Rightarrow \dot{\neg}(\{\{(sx),(sx)\},\{(sx),(sy)\}\} =$
$\{\{(sx),(sx)\},\{(sx),(sy)\}\})n)n \gg \dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((sx) \in (sx1) \Rightarrow$
$\dot{\neg}((op2) \in (sy1))n)n \Rightarrow \dot{\neg}(\{\{(sx),(sx)\},\{(sx),(sy)\}\} =$
$\{\{(sx),(sx)\},\{(sx),(op2)\}\})n)n)n)n;$ IntroExist @ $(sx) \rhd$
$\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((sx) \in (sx1) \Rightarrow \dot{\neg}((op2) \in (sy1))n)n \Rightarrow$
$\dot{\neg}(\{\{(sx),(sx)\},\{(sx),(sy)\}\} = \{\{(sx),(sx)\},\{(sx),(op2)\}\})n)n)n)n \gg$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in (sx1) \Rightarrow \dot{\neg}((op2) \in (sy1))n)n \Rightarrow$
$\dot{\neg}(\{\{(sx),(sx)\},\{(sx),(sy)\}\} =$
$\{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n;$ Repetition $\rhd$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in (sx1) \Rightarrow \dot{\neg}((op2) \in (sy1))n)n \Rightarrow$
$\dot{\neg}(\{\{(sx),(sx)\},\{(sx),(sy)\}\} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n \gg$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in (sx1) \Rightarrow \dot{\neg}((op2) \in (sy1))n)n \Rightarrow$
$\dot{\neg}(\{\{(sx),(sx)\},\{(sx),(sy)\}\} =$
$\{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n;$ Formula2Sep $\rhd$
$\{\{(sx),(sx)\},\{(sx),(sy)\}\} \in P(P(Union(\{(sx1),(sy1)\}))) \rhd$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in (sx1) \Rightarrow \dot{\neg}((op2) \in (sy1))n)n \Rightarrow$
$\dot{\neg}(\{\{(sx),(sx)\},\{(sx),(sy)\}\} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n \gg$
$\{\{(sx),(sx)\},\{(sx),(sy)\}\} \in \{ph \in P(P(Union(\{(sx1),(sy1)\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in (sx1) \Rightarrow \dot{\neg}((op2) \in (sy1))n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\};$ Repetition $\rhd$
$\{\{(sx),(sx)\},\{(sx),(sy)\}\} \in \{ph \in P(P(Union(\{(sx1),(sy1)\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in (sx1) \Rightarrow \dot{\neg}((op2) \in (sy1))n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\} \gg$
$\{\{(sx),(sx)\},\{(sx),(sy)\}\} \in \{ph \in P(P(Union(\{(sx1),(sy1)\}))) \mid$
$\dot{\neg}(\forall_{obj}(op1){:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}(op2){:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((op1) \in (sx1) \Rightarrow \dot{\neg}((op2) \in (sy1))n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{(op1),(op1)\},\{(op1),(op2)\}\})n)n)n)n)n)n\}\rceil, p_0, \mathsf{c})]$

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

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

$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \gg \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\}; \mathrm{Sep2Formula} \rhd \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \gg \dot\neg\,(\overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\overline{(\mathrm{s1})} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot\neg\,(\overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow$
$\dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\overline{(\mathrm{s1})} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \forall\underline{\mathsf{x}}\colon \mathrm{Ded} \rhd \forall\underline{\mathsf{x}}\colon \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \vdash \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Gen} \rhd \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot\neg\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},\underline{\mathsf{x}}\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Repetition} \rhd$
$\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg\,(\dot\neg\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg\,(\dot\neg\,(\dot\neg\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})n)n\} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \gg \forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})n)n\} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}; \mathrm{CartProdIsRelation} \gg$
$\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n; \mathrm{SubsetIsRelation} \rhd$
$\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n \rhd \forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})n)n\} \Rightarrow \overline{(\mathrm{s1})} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \gg \forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})n)n\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\rceil, \mathrm{p}_0, \mathsf{c})]$
$[\mathrm{CrsIsFunction} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})n)n\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, \underline{\mathsf{x}}\}\})n)n\} \Rightarrow$

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

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

$\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{x}\}\})n)n\} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{x}\}\})n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)} \gg$
$\dot{\neg}\,(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{x}\}\})n)n\} \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}\,(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{x}\}\})n)n\} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{x}\}\})n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n\rceil, p_0, \mathsf{c})]$

$[CrsIsTotal \overset{stmt}{\to} SystemQ \vdash \forall\underline{m}\colon \forall\underline{x}\colon \lambda\mathsf{c}.TypeRational0(\lceil\underline{x}\rceil) \Vdash \underline{m} \in N \vdash$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \underline{x}\}\} \in \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}\,(\forall_{obj}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{obj}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in N \Rightarrow \dot{\neg}\,(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}\,(\forall_{obj}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{x}\}\})n)n\}]$

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

$[\mathrm{CrsIsSeries} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(r1)}\colon \overline{(r1)} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{x}\}\})n)n\} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(f1)}\colon \forall_{\mathrm{obj}} \overline{(f2)}\colon \forall_{\mathrm{obj}} \overline{(f3)}\colon \forall_{\mathrm{obj}} \overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{x}\}\})n)n\} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{x}\}\})n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(crs1)}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, \underline{x}\}\})n)n\})n)n)n)n]$

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

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

{{(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 ⇒
∸(∀$_{\mathrm{obj}}$(s1): (s1) ∈ N ⇒ ∸(∀$_{\mathrm{obj}}$(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈ {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})n)n)n)n⌉, p_0, c)]

[CrsLookup $\stackrel{\text{stmt}}{\rightarrow}$ SystemQ ⊢ ∀m: ∀x: m ∈ N ⊢ {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}[m] = x]

[CrsLookup $\stackrel{\text{proof}}{\rightarrow}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢ ∀m: ∀x: m ∈ N ⊢ CrsIsSeries ≫
∸(∸(∀$_{\mathrm{obj}}$(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 ⇒
∸(∀$_{\mathrm{obj}}$(s1): (s1) ∈ N ⇒ ∸(∀$_{\mathrm{obj}}$(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈ {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})n)n)n)n; MemberOfSeries ⊳ m ∈
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 ⇒
∸(∀$_{\mathrm{obj}}$(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} ⇒

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

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

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

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

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

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

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

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

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

$((\underline{x} * \underline{y}) + (\underline{x} * \underline{z})) \gg ((\underline{x} * \underline{y}) + (\underline{x} * \underline{z})) = (\underline{x} * (\underline{y} + \underline{z}))\rceil, p_0, c)]$

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

[Three2twoTerms $\stackrel{proof}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \forall\underline{u}\colon (\underline{y} + \underline{z}) = \underline{u} \vdash$ lemma eqAdditionLeft $\rhd (\underline{y}+\underline{z}) = \underline{u} \gg (\underline{x}+(\underline{y}+\underline{z})) = (\underline{x}+\underline{u})$; plusAssociativity $\gg ((\underline{x} + \underline{y}) + \underline{z}) = (\underline{x} + (\underline{y} + \underline{z}))$; eqTransitivity $\rhd ((\underline{x} + \underline{y}) + \underline{z}) = (\underline{x} + (\underline{y} + \underline{z})) \rhd (\underline{x} + (\underline{y} + \underline{z})) = (\underline{x} + \underline{u}) \gg ((\underline{x} + \underline{y}) + \underline{z}) = (\underline{x} + \underline{u})\rceil, p_0, c)]$

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

[Three2threeTerms $\stackrel{proof}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon$ plusCommutativity $\gg (\underline{y} + \underline{z}) = (\underline{z} + \underline{y})$; Three2twoTerms $\rhd (\underline{y} + \underline{z}) = (\underline{z} + \underline{y}) \gg ((\underline{x} + \underline{y}) + \underline{z}) = (\underline{x} + (\underline{z} + \underline{y}))$; plusAssociativity $\gg ((\underline{x}+\underline{z})+\underline{y}) = (\underline{x}+(\underline{z}+\underline{y}))$; eqSymmetry $\rhd ((\underline{x}+\underline{z})+\underline{y}) = (\underline{x} + (\underline{z} + \underline{y})) \gg (\underline{x} + (\underline{z} + \underline{y})) = ((\underline{x} + \underline{z}) + \underline{y})$; eqTransitivity $\rhd ((\underline{x} + \underline{y}) + \underline{z}) = (\underline{x} + (\underline{z} + \underline{y})) \rhd (\underline{x} + (\underline{z} + \underline{y})) = ((\underline{x} + \underline{z}) + \underline{y}) \gg ((\underline{x} + \underline{y}) + \underline{z}) = ((\underline{x} + \underline{z}) + \underline{y})\rceil, p_0, c)]$

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

[Three2twoFactors $\stackrel{proof}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \forall\underline{u}\colon (\underline{y} * \underline{z}) = \underline{u} \vdash$ lemma eqMultiplicationLeft $\rhd (\underline{y} * \underline{z}) = \underline{u} \gg (\underline{x} * (\underline{y} * \underline{z})) = (\underline{x}*\underline{u})$; timesAssociativity $\gg ((\underline{x}*\underline{y})*\underline{z}) = (\underline{x}*(\underline{y}*\underline{z}))$; eqTransitivity $\rhd ((\underline{x}*\underline{y})*\underline{z}) = (\underline{x} * (\underline{y} * \underline{z})) \rhd (\underline{x} * (\underline{y} * \underline{z})) = (\underline{x} * \underline{u}) \gg ((\underline{x} * \underline{y}) * \underline{z}) = (\underline{x} * \underline{u})\rceil, p_0, c)]$

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

[$x = x + (y - y)$ $\stackrel{proof}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon$ plus0 $\gg (\underline{x} + 0) = \underline{x}$; Negative $\gg (\underline{y} + (-u\underline{y})) = 0$; eqSymmetry $\rhd (\underline{y} + (-u\underline{y})) = 0 \gg 0 = (\underline{y} + (-u\underline{y}))$; lemma eqAdditionLeft $\rhd 0 = (\underline{y} + (-u\underline{y})) \gg (\underline{x} + 0) = (\underline{x} + (\underline{y} + (-u\underline{y})))$; Equality $\rhd (\underline{x} + 0) = \underline{x} \rhd (\underline{x} + 0) = (\underline{x} + (\underline{y} + (-u\underline{y}))) \gg \underline{x} = (\underline{x} + (\underline{y} + (-u\underline{y})))\rceil, p_0, c)]$

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

[$x = x + y - y$ $\stackrel{proof}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon x = x + (y - y) \gg \underline{x} = (\underline{x} + (\underline{y} + (-u\underline{y})))$; plusAssociativity $\gg ((\underline{x} + \underline{y}) + (-u\underline{y})) = (\underline{x} + (\underline{y} + (-u\underline{y})))$; eqSymmetry $\rhd ((\underline{x} + \underline{y}) + (-u\underline{y})) = (\underline{x} + (\underline{y} + (-u\underline{y}))) \gg (\underline{x} + (\underline{y} + (-u\underline{y}))) = ((\underline{x} + \underline{y}) + (-u\underline{y}))$; eqTransitivity $\rhd \underline{x} = (\underline{x} + (\underline{y} + (-u\underline{y}))) \rhd (\underline{x} + (\underline{y} + (-u\underline{y}))) = ((\underline{x} + \underline{y}) + (-u\underline{y})) \gg \underline{x} = ((\underline{x} + \underline{y}) + (-u\underline{y}))\rceil, p_0, c)]$

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

[$x = x * y * (1/y)$ $\stackrel{proof}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}\,(\underline{y} = 0)n \vdash$ times1 $\gg (\underline{x} * 1) = \underline{x}$; Reciprocal $\rhd \dot{\neg}\,(\underline{y} = 0)n \gg (\underline{y} * rec\underline{y}) = 1$; Three2twoFactors $\rhd (\underline{y} * rec\underline{y}) = 1 \gg ((\underline{x}*\underline{y})*rec\underline{y}) = (\underline{x}*1)$; eqTransitivity $\rhd ((\underline{x}*\underline{y})*rec\underline{y}) = (\underline{x}*1) \rhd (\underline{x}*1) = \underline{x} \gg ((\underline{x}*\underline{y})*rec\underline{y}) = \underline{x}$; eqSymmetry $\rhd ((\underline{x}*\underline{y})*rec\underline{y}) = \underline{x} \gg \underline{x} = ((\underline{x}*\underline{y})*rec\underline{y})\rceil, p_0, c)]$

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

[$x * 0 + x = x$ $\stackrel{proof}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon$ times1 $\gg (\underline{x} * 1) = \underline{x}$; eqSymmetry $\rhd (\underline{x} * 1) = \underline{x} \gg \underline{x} = (\underline{x} * 1)$; lemma eqAdditionLeft $\rhd \underline{x} = (\underline{x} * 1) \gg ((\underline{x} * 0) + \underline{x}) = ((\underline{x} * 0) + (\underline{x} * 1))$; Distribution $\gg (\underline{x} * (0 + 1)) = ((\underline{x} * 0) + (\underline{x} * 1))$; eqSymmetry $\rhd (\underline{x} * (0 + 1)) = ((\underline{x} * 0) + (\underline{x} * 1)) \gg ((\underline{x} * 0) + (\underline{x} * 1)) = (\underline{x} * (0 + 1))$; lemma plus0Left $\gg (0 + 1) =$

$1; \mathrm{lemma\ eqMultiplicationLeft} \rhd (0+1) = 1 \gg (\underline{x} * (0+1)) = (\underline{x} * 1); \mathrm{eqTransitivity5} \rhd ((\underline{x} * 0) + \underline{x}) = ((\underline{x} * 0) + (\underline{x} * 1)) \rhd ((\underline{x} * 0) + (\underline{x} * 1)) = (\underline{x} * (0+1)) \rhd (\underline{x} * (0+1)) = (\underline{x} * 1) \rhd (\underline{x} * 1) = \underline{x} \gg ((\underline{x} * 0) + \underline{x}) = \underline{x}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

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

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

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

$[(-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{lemma\ eqAdditionLeft} \rhd (-\mathrm{u}1) = ((-\mathrm{u}1) * 1) \gg (1 + (-\mathrm{u}1)) = (1 + ((-\mathrm{u}1) * 1)); \mathrm{lemma\ 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{lemma\ 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{lemma\ 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) =$

$(0+1) \triangleright (0+1) = 1 \gg ((-\mathrm{u}1) * (-\mathrm{u}1)) = 1\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

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

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

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

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

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

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

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

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

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

$[\text{SubtractEquations} \overset{\text{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \text{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 \text{eqAddition} \triangleright (\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}})); \text{lemma plus0Left} \gg (0 + \underline{\mathsf{z}}) = \underline{\mathsf{z}}; \text{eqTransitivity} \triangleright (0 + \underline{\mathsf{z}}) = \underline{\mathsf{z}} \triangleright \underline{\mathsf{z}} = \underline{\mathsf{u}} \gg (0 + \underline{\mathsf{z}}) = \underline{\mathsf{u}}; \text{PositiveToRight(Eq)} \triangleright (0 + \underline{\mathsf{z}}) = \underline{\mathsf{u}} \gg 0 = (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}})); \text{eqSymmetry} \triangleright 0 = (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}})) \gg (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}})) = 0; \text{lemma eqAdditionLeft} \triangleright (\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); \text{plusAssociativity} \gg ((\underline{\mathsf{y}} + \underline{\mathsf{u}}) + (-\mathrm{u}\underline{\mathsf{z}})) = (\underline{\mathsf{y}} + (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))); \text{plus0} \gg (\underline{\mathsf{y}} + 0) = \underline{\mathsf{y}}; \text{eqTransitivity4} \triangleright ((\underline{\mathsf{y}} + \underline{\mathsf{u}}) + (-\mathrm{u}\underline{\mathsf{z}})) = (\underline{\mathsf{y}} + (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))) \triangleright (\underline{\mathsf{y}} + (\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))) = (\underline{\mathsf{y}} + 0) \triangleright (\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}} =$

$((\underline{x}+\underline{z})+(-u\underline{z}));\text{eqTransitivity4} \rhd \underline{x} = ((\underline{x}+\underline{z})+(-u\underline{z})) \rhd ((\underline{x}+\underline{z})+(-u\underline{z})) = ((\underline{y}+\underline{u})+(-u\underline{z})) \rhd ((\underline{y}+\underline{u})+(-u\underline{z})) = \underline{y} \gg \underline{x} = \underline{y}\rceil, p_0, \mathsf{c})]$

$[\text{SubtractEquationsLeft} \overset{\text{stmt}}{\to} \text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \forall\underline{u}\colon (\underline{x}+\underline{z}) = (\underline{y}+\underline{u}) \vdash \underline{x} = \underline{y} \vdash \underline{z} = \underline{u}]$

$[\text{SubtractEquationsLeft} \overset{\text{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \forall\underline{u}\colon (\underline{x}+\underline{z}) = (\underline{y}+\underline{u}) \vdash \underline{x} = \underline{y} \vdash \text{plusCommutativity} \gg (\underline{z}+\underline{x}) = (\underline{x}+\underline{z}); \text{plusCommutativity} \gg (\underline{y}+\underline{u}) = (\underline{u}+\underline{y}); \text{eqTransitivity4} \rhd (\underline{z}+\underline{x}) = (\underline{x}+\underline{z}) \rhd (\underline{x}+\underline{z}) = (\underline{y}+\underline{u}) \rhd (\underline{y}+\underline{u}) = (\underline{u}+\underline{y}) \gg (\underline{z}+\underline{x}) = (\underline{u}+\underline{y}); \text{SubtractEquations} \rhd (\underline{z}+\underline{x}) = (\underline{u}+\underline{y}) \rhd \underline{x} = \underline{y} \gg \underline{z} = \underline{u}\rceil, p_0, \mathsf{c})]$

$[\text{EqNegated} \overset{\text{stmt}}{\to} \text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \underline{x} = \underline{y} \vdash (-u\underline{x}) = (-u\underline{y})]$

$[\text{EqNegated} \overset{\text{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \underline{x} = \underline{y} \vdash \text{Negative} \gg (\underline{x}+(-u\underline{x})) = 0; \text{Negative} \gg (\underline{y}+(-u\underline{y})) = 0; \text{eqSymmetry} \rhd (\underline{y}+(-u\underline{y})) = 0 \gg 0 = (\underline{y}+(-u\underline{y})); \text{eqTransitivity} \rhd (\underline{x}+(-u\underline{x})) = 0 \rhd 0 = (\underline{y}+(-u\underline{y})) \gg (\underline{x}+(-u\underline{x})) = (\underline{y}+(-u\underline{y})); \text{SubtractEquationsLeft} \rhd (\underline{x}+(-u\underline{x})) = (\underline{y}+(-u\underline{y})) \rhd \underline{x} = \underline{y} \gg (-u\underline{x}) = (-u\underline{y})\rceil, p_0, \mathsf{c})]$

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

$[\text{PositiveToRight(Eq)} \overset{\text{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon (\underline{x}+\underline{y}) = \underline{z} \vdash \text{eqAddition} \rhd (\underline{x}+\underline{y}) = \underline{z} \gg ((\underline{x}+\underline{y})+(-u\underline{y})) = (\underline{z}+(-u\underline{y})); x = x+y-y \gg \underline{x} = ((\underline{x}+\underline{y})+(-u\underline{y})); \text{eqTransitivity} \rhd \underline{x} = ((\underline{x}+\underline{y})+(-u\underline{y})) \rhd ((\underline{x}+\underline{y})+(-u\underline{y})) = (\underline{z}+(-u\underline{y})) \gg \underline{x} = (\underline{z}+(-u\underline{y}))\rceil, p_0, \mathsf{c})]$

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

$[\text{PositiveToLeft(Eq)(1term)} \overset{\text{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \underline{x} = \underline{y} \vdash \text{eqAddition} \rhd \underline{x} = \underline{y} \gg (\underline{x}+(-u\underline{y})) = (\underline{y}+(-u\underline{y})); \text{Negative} \gg (\underline{y}+(-u\underline{y})) = 0; \text{eqTransitivity} \rhd (\underline{x}+(-u\underline{y})) = (\underline{y}+(-u\underline{y})) \rhd (\underline{y}+(-u\underline{y})) = 0 \gg (\underline{x}+(-u\underline{y})) = 0\rceil, p_0, \mathsf{c})]$

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

$[\text{PositiveToRight(Leq)} \overset{\text{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon (\underline{x}+\underline{y}) <= \underline{z} \vdash \text{leqAddition} \rhd (\underline{x}+\underline{y}) <= \underline{z} \gg ((\underline{x}+\underline{y})+(-u\underline{y})) <= (\underline{z}+(-u\underline{y})); x = x+y-y \gg \underline{x} = ((\underline{x}+\underline{y})+(-u\underline{y})); \text{eqSymmetry} \rhd \underline{x} = ((\underline{x}+\underline{y})+(-u\underline{y})) \gg ((\underline{x}+\underline{y})+(-u\underline{y})) = \underline{x}; \text{subLeqLeft} \rhd ((\underline{x}+\underline{y})+(-u\underline{y})) = \underline{x} \rhd ((\underline{x}+\underline{y})+(-u\underline{y})) <= (\underline{z}+(-u\underline{y})) \gg \underline{x} <= (\underline{z}+(-u\underline{y}))\rceil, p_0, \mathsf{c})]$

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

$[\text{PositiveToRight(Leq)(1term)} \overset{\text{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{y}\colon \forall\underline{z}\colon \underline{y} <= \underline{z} \vdash \text{lemma plus0Left} \gg (0+\underline{y}) = \underline{y}; \text{eqSymmetry} \rhd (0+\underline{y}) = \underline{y} \gg \underline{y} = (0+\underline{y}); \text{subLeqLeft} \rhd \underline{y} = (0+\underline{y}) \rhd \underline{y} <= \underline{z} \gg (0+\underline{y}) <= \underline{z}; \text{PositiveToRight(Leq)} \rhd (0+\underline{y}) <= \underline{z} \gg 0 <= (\underline{z}+(-u\underline{y}))\rceil, p_0, \mathsf{c})]$

$[\text{NegativeToLeft(Eq)} \overset{\text{stmt}}{\to} \text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = (\underline{y}+(-u\underline{z})) \vdash (\underline{x}+\underline{z}) = \underline{y}]$

$[\text{NegativeToLeft(Eq)} \overset{\text{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = (\underline{y}+(-u\underline{z})) \vdash$

$\text{eqAddition} \rhd \underline{x} = (\underline{y}+(-\text{u}\underline{z})) \gg (\underline{x}+\underline{z}) = ((\underline{y}+(-\text{u}\underline{z}))+\underline{z}); \text{Three2threeTerms} \gg ((\underline{y}+(-\text{u}\underline{z}))+\underline{z}) = ((\underline{y}+\underline{z})+(-\text{u}\underline{z})); \text{x = x + y − y} \gg \underline{y} = ((\underline{y}+\underline{z})+(-\text{u}\underline{z})); \text{eqSymmetry} \rhd \underline{y} = ((\underline{y}+\underline{z})+(-\text{u}\underline{z})) \gg ((\underline{y}+\underline{z})+(-\text{u}\underline{z})) = \underline{y}; \text{eqTransitivity4} \rhd (\underline{x}+\underline{z}) = ((\underline{y}+(-\text{u}\underline{z}))+\underline{z}) \rhd ((\underline{y}+(-\text{u}\underline{z}))+\underline{z}) = ((\underline{y}+\underline{z})+(-\text{u}\underline{z})) \rhd ((\underline{y}+\underline{z})+(-\text{u}\underline{z})) = \underline{y} \gg (\underline{x}+\underline{z}) = \underline{y}\rceil, \text{p}_0, \mathsf{c})]$

(*** NO EQUALITY ***)

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

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

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

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

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

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

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

$[\text{DoubleMinus} \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \text{Negative} \gg ((-\text{u}\underline{x})+(-\text{u}(-\text{u}\underline{x}))) = 0; \text{x + y = zBackwards} \rhd ((-\text{u}\underline{x})+(-\text{u}(-\text{u}\underline{x}))) = 0 \gg 0 = ((-\text{u}(-\text{u}\underline{x}))+(-\text{u}\underline{x})); \text{NegativeToLeft(Eq)} \rhd 0 = ((-\text{u}(-\text{u}\underline{x}))+(-\text{u}\underline{x})) \gg (0+\underline{x}) = (-\text{u}(-\text{u}\underline{x})); \text{lemma plus0Left} \gg (0+\underline{x}) = \underline{x}; \text{Equality} \rhd (0+\underline{x}) = (-\text{u}(-\text{u}\underline{x})) \rhd (0+\underline{x}) = \underline{x} \gg (-\text{u}(-\text{u}\underline{x})) = \underline{x}\rceil, \text{p}_0, \mathsf{c})]$

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

$[\text{NeqNegated} \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} = \underline{y})\text{n} \vdash (-\text{u}\underline{x}) = (-\text{u}\underline{y}) \vdash \text{EqNegated} \rhd (-\text{u}\underline{x}) = (-\text{u}\underline{y}) \gg (-\text{u}(-\text{u}\underline{x})) = (-\text{u}(-\text{u}\underline{y})); \text{DoubleMinus} \gg (-\text{u}(-\text{u}\underline{x})) = \underline{x}; \text{eqSymmetry} \rhd (-\text{u}(-\text{u}\underline{x})) = \underline{x} \gg \underline{x} = (-\text{u}(-\text{u}\underline{x})); \text{DoubleMinus} \gg (-\text{u}(-\text{u}\underline{y})) = \underline{y}; \text{eqTransitivity4} \rhd \underline{x} = (-\text{u}(-\text{u}\underline{x})) \rhd (-\text{u}(-\text{u}\underline{x})) = (-\text{u}(-\text{u}\underline{y})) \rhd (-\text{u}(-\text{u}\underline{y})) = \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}((-\text{u}\underline{x}) = (-\text{u}\underline{y}))\text{n}; \forall\underline{x}\colon \forall\underline{y}\colon \text{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} = \underline{y})\text{n} \vdash (-\text{u}\underline{x}) = (-\text{u}\underline{y}) \vdash \dot{\neg}((-\text{u}\underline{x}) = (-\text{u}\underline{y}))\text{n} \gg \dot{\neg}(\underline{x} = \underline{y})\text{n} \Rightarrow (-\text{u}\underline{x}) = (-\text{u}\underline{y}) \Rightarrow \dot{\neg}((-\text{u}\underline{x}) = (-\text{u}\underline{y}))\text{n}; \dot{\neg}(\underline{x} = \underline{y})\text{n} \vdash \text{MP} \rhd \dot{\neg}(\underline{x} = \underline{y})\text{n} \Rightarrow (-\text{u}\underline{x}) = (-\text{u}\underline{y}) \Rightarrow \dot{\neg}((-\text{u}\underline{x}) = (-\text{u}\underline{y}))\text{n} \rhd \dot{\neg}(\underline{x} = \underline{y})\text{n} \gg (-\text{u}\underline{x}) = (-\text{u}\underline{y}) \Rightarrow \dot{\neg}((-\text{u}\underline{x}) = (-\text{u}\underline{y}))\text{n}; \text{prop lemma imply negation} \rhd (-\text{u}\underline{x}) = (-\text{u}\underline{y}) \Rightarrow \dot{\neg}((-\text{u}\underline{x}) = (-\text{u}\underline{y}))\text{n} \gg \dot{\neg}((-\text{u}\underline{x}) = (-\text{u}\underline{y}))\text{n}\rceil, \text{p}_0, \mathsf{c})]$

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

$[\text{SubNeqRight} \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \underline{x} = \underline{y} \vdash \dot{\neg}(\underline{z} = \underline{x})\text{n} \vdash \text{NeqSymmetry} \rhd \dot{\neg}(\underline{z} = \underline{x})\text{n} \gg \dot{\neg}(\underline{x} = \underline{z})\text{n}; \text{SubNeqLeft} \rhd \underline{x} = \underline{y} \rhd \dot{\neg}(\underline{x} = \underline{z})\text{n} \gg \dot{\neg}(\underline{y} = \underline{z})\text{n}; \text{NeqSymmetry} \rhd \dot{\neg}(\underline{y} = \underline{z})\text{n} \gg \dot{\neg}(\underline{z} = \underline{y})\text{n}\rceil, \text{p}_0, \mathsf{c})]$

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

$[\text{NeqAddition} \stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{x} = \underline{y})\text{n} \vdash (\underline{x}+\underline{z}) =$

$(\underline{y}+\underline{z}) \vdash \mathrm{eqReflexivity} \gg \underline{z}=\underline{z}; \mathrm{SubtractEquations} \rhd (\underline{x}+\underline{z})=(\underline{y}+\underline{z}) \rhd \underline{z}=\underline{z} \gg \underline{x}=\underline{y}; \mathrm{FromContradiction} \rhd \underline{x}=\underline{y} \rhd \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \gg \dot{\neg}((\underline{x}+\underline{z})=(\underline{y}+\underline{z}))\mathrm{n}; \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \mathrm{Ded} \rhd \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \vdash (\underline{x}+\underline{z})=(\underline{y}+\underline{z}) \vdash \dot{\neg}((\underline{x}+\underline{z})=(\underline{y}+\underline{z}))\mathrm{n} \gg \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \Rightarrow (\underline{x}+\underline{z})=(\underline{y}+\underline{z}) \Rightarrow \dot{\neg}((\underline{x}+\underline{z})=(\underline{y}+\underline{z}))\mathrm{n}; \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \vdash \mathrm{MP} \rhd \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \Rightarrow (\underline{x}+\underline{z})=(\underline{y}+\underline{z}) \Rightarrow \dot{\neg}((\underline{x}+\underline{z})=(\underline{y}+\underline{z}))\mathrm{n} \rhd \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \gg (\underline{x}+\underline{z})=(\underline{y}+\underline{z}) \Rightarrow \dot{\neg}((\underline{x}+\underline{z})=(\underline{y}+\underline{z}))\mathrm{n}; \mathrm{prop\ lemma\ imply\ negation} \rhd (\underline{x}+\underline{z})=(\underline{y}+\underline{z}) \Rightarrow \dot{\neg}((\underline{x}+\underline{z})=(\underline{y}+\underline{z}))\mathrm{n} \gg \dot{\neg}((\underline{x}+\underline{z})=(\underline{y}+\underline{z}))\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{NeqMultiplication} \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{z}=0)\mathrm{n} \vdash \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \vdash (\underline{x}*\underline{z})=(\underline{y}*\underline{z}) \vdash \mathrm{x}=\mathrm{x}*\mathrm{y}*(1/\mathrm{y}) \rhd \dot{\neg}(\underline{z}=0)\mathrm{n} \gg \underline{x}=((\underline{x}*\underline{z})*\mathrm{rec}\underline{z}); \mathrm{eqMultiplication} \rhd (\underline{x}*\underline{z})=(\underline{y}*\underline{z}) \gg ((\underline{x}*\underline{z})*\mathrm{rec}\underline{z})=((\underline{y}*\underline{z})*\mathrm{rec}\underline{z}); \mathrm{x}=\mathrm{x}*\mathrm{y}*(1/\mathrm{y}) \rhd \dot{\neg}(\underline{z}=0)\mathrm{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{eqTransitivity4} \rhd \underline{x}=((\underline{x}*\underline{z})*\mathrm{rec}\underline{z}) \rhd ((\underline{x}*\underline{z})*\mathrm{rec}\underline{z})=((\underline{y}*\underline{z})*\mathrm{rec}\underline{z}) \rhd ((\underline{y}*\underline{z})*\mathrm{rec}\underline{z})=\underline{y} \gg \underline{x}=\underline{y}; \mathrm{FromContradiction} \rhd \underline{x}=\underline{y} \rhd \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \gg \dot{\neg}((\underline{x}*\underline{z})=(\underline{y}*\underline{z}))\mathrm{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{z}=0)\mathrm{n} \vdash \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \vdash (\underline{x}*\underline{z})=(\underline{y}*\underline{z}) \vdash \dot{\neg}((\underline{x}*\underline{z})=(\underline{y}*\underline{z}))\mathrm{n} \gg \dot{\neg}(\underline{z}=0)\mathrm{n} \Rightarrow \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \Rightarrow (\underline{x}*\underline{z})=(\underline{y}*\underline{z}) \Rightarrow \dot{\neg}((\underline{x}*\underline{z})=(\underline{y}*\underline{z}))\mathrm{n}; \dot{\neg}(\underline{z}=0)\mathrm{n} \vdash \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \vdash \mathrm{MP2} \rhd \dot{\neg}(\underline{z}=0)\mathrm{n} \Rightarrow \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \Rightarrow (\underline{x}*\underline{z})=(\underline{y}*\underline{z}) \Rightarrow \dot{\neg}((\underline{x}*\underline{z})=(\underline{y}*\underline{z}))\mathrm{n} \rhd \dot{\neg}(\underline{z}=0)\mathrm{n} \rhd \dot{\neg}(\underline{x}=\underline{y})\mathrm{n} \gg (\underline{x}*\underline{z})=(\underline{y}*\underline{z}) \Rightarrow \dot{\neg}((\underline{x}*\underline{z})=(\underline{y}*\underline{z}))\mathrm{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}))\mathrm{n} \gg \dot{\neg}((\underline{x}*\underline{z})=(\underline{y}*\underline{z}))\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

(*** NEGATIVE ***)

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

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

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

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

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

$[\mathrm{ToLess} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{x})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{fromNotLess} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{x})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{x} <= \underline{y}; \forall\underline{x}\colon\forall\underline{y}\colon \mathrm{Ded} \rhd \forall\underline{x}\colon\forall\underline{y}\colon \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y}=\underline{x})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{x} <= \underline{y} \gg$

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

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

$[\mathrm{fromNotLess} \stackrel{\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}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \vdash \underline{x} <= \underline{y} \vdash \mathrm{Repetition} \rhd \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)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; \mathrm{RemoveDoubleNeg} \rhd \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \gg \underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n; \mathrm{MP} \rhd \underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n \rhd \underline{x} <= \underline{y} \gg \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n; \mathrm{RemoveDoubleNeg} \rhd \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n \gg \underline{x} = \underline{y}; \mathrm{eqSymmetry} \rhd \underline{x} = \underline{y} \gg \underline{y} = \underline{x}; \mathrm{eqLeq} \rhd \underline{y} = \underline{x} \gg \underline{y} <= \underline{x}; \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 \underline{x} <= \underline{y} \vdash \underline{y} <= \underline{x} \gg \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \Rightarrow \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{x}; \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \vdash \mathrm{MP} \rhd \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \Rightarrow \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{x} \rhd \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \gg \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{x}; \mathrm{AutoImply} \gg \underline{y} <= \underline{x} \Rightarrow \underline{y} <= \underline{x}; \mathrm{leqTotality} \gg \dot{\neg}(\underline{x} <= \underline{y})n \Rightarrow \underline{y} <= \underline{x}; \mathrm{FromDisjuncts} \rhd \dot{\neg}(\underline{x} <= \underline{y})n \Rightarrow \underline{y} <= \underline{x} \rhd \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{x} \rhd \underline{y} <= \underline{x} \Rightarrow \underline{y} <= \underline{x} \gg \underline{y} <= \underline{x}\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{toNotLess} \stackrel{\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 \underline{y} <= \underline{x} \vdash \mathrm{leqAntisymmetry} \rhd \underline{y} <= \underline{x} \rhd \underline{x} <= \underline{y} \gg \underline{y} = \underline{x}; \mathrm{AddDoubleNeg} \rhd \underline{y} = \underline{x} \gg \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)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 \underline{y} <= \underline{x} \vdash \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n \gg \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n; \underline{x} <= \underline{y} \vdash \mathrm{MP} \rhd \underline{x} <= \underline{y} \Rightarrow \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n \rhd \underline{x} <= \underline{y} \gg \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n; \mathrm{AddDoubleNeg} \rhd \underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n)n; \mathrm{Repetition} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n)n \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n)n; \mathrm{Repetition} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n)n \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{x})n)n)n)n\rceil, p_0, \mathsf{c})]$

(*** LEQ ***)

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

$[\mathrm{LeqLessEq} \stackrel{\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 \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)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{leqAntisymmetry} \rhd \underline{x} <= \underline{y} \rhd \underline{y} <= \underline{x} \gg \underline{x} = \underline{y}; \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}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \vdash \underline{x} = \underline{y} \gg \underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \Rightarrow \underline{x} = \underline{y}; \underline{x} <= \underline{y} \vdash \mathrm{MP} \rhd \underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \Rightarrow \underline{x} = \underline{y} \rhd \underline{x} <= \underline{y} \gg \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \Rightarrow \underline{x} = \underline{y}; \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 \underline{x} = \underline{y} \gg \dot{\neg}(\dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n)n \Rightarrow \underline{x} = \underline{y}\rceil, p_0, \mathsf{c})]$

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

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

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

$[\mathrm{FromLeqGeq} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{a}\colon \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \Rightarrow \underline{a} \vdash \underline{y} <= \underline{x} \Rightarrow \underline{a} \vdash \underline{a}]$

$[\mathrm{FromLeqGeq} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{a}\colon \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} <= \underline{y} \Rightarrow \underline{a} \vdash \underline{y} <= \underline{x} \Rightarrow \underline{a} \vdash \mathrm{leqTotality} \gg \dot{\neg}(\underline{x} <= \underline{y})\mathrm{n} \Rightarrow \underline{y} <= \underline{x}; \mathrm{FromDisjuncts} \rhd \dot{\neg}(\underline{x} <= \underline{y})\mathrm{n} \Rightarrow \underline{y} <= \underline{x} \rhd \underline{x} <= \underline{y} \Rightarrow \underline{a} \rhd \underline{y} <= \underline{x} \Rightarrow \underline{a} \gg \underline{a}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{SubLessRight} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \underline{x} = \underline{y} \vdash \dot{\neg}(\underline{z} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{Repetition} \rhd \dot{\neg}(\underline{z} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{z} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\underline{z} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{z} <= \underline{x}; \mathrm{subLeqRight} \rhd \underline{x} = \underline{y} \rhd \underline{z} <= \underline{x} \gg \underline{z} <= \underline{y}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{z} <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{z} = \underline{x})\mathrm{n}; \mathrm{SubNeqRight} \rhd \underline{x} = \underline{y} \rhd \dot{\neg}(\underline{z} = \underline{x})\mathrm{n} \gg \dot{\neg}(\underline{z} = \underline{y})\mathrm{n}; \mathrm{JoinConjuncts} \rhd \underline{z} <= \underline{y} \rhd \dot{\neg}(\underline{z} = \underline{y})\mathrm{n} \gg \dot{\neg}(\underline{z} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{z} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{SubLessLeft} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \underline{x} = \underline{y} \vdash \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{Repetition} \rhd \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{x} <= \underline{z}; \mathrm{subLeqLeft} \rhd \underline{x} = \underline{y} \rhd \underline{x} <= \underline{z} \gg \underline{y} <= \underline{z}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{x} = \underline{z})\mathrm{n}; \mathrm{SubNeqLeft} \rhd \underline{x} = \underline{y} \rhd \dot{\neg}(\underline{x} = \underline{z})\mathrm{n} \gg \dot{\neg}(\underline{y} = \underline{z})\mathrm{n}; \mathrm{JoinConjuncts} \rhd \underline{y} <= \underline{z} \rhd \dot{\neg}(\underline{y} = \underline{z})\mathrm{n} \gg \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{leqLessTransitivity} \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 \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{x} = \underline{z} \vdash \mathrm{FirstConjunct} \rhd \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{y} <= \underline{z}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{y} = \underline{z})\mathrm{n}; \mathrm{subLeqLeft} \rhd \underline{x} = \underline{z} \rhd \underline{x} <= \underline{y} \gg \underline{z} <= \underline{y}; \mathrm{leqAntisymmetry} \rhd \underline{y} <= \underline{z} \rhd \underline{z} <= \underline{y} \gg \underline{y} = \underline{z}; \mathrm{FromContradiction} \rhd \underline{y} = \underline{z} \rhd \dot{\neg}(\underline{y} = \underline{z})\mathrm{n} \gg \dot{\neg}(\underline{x} = \underline{z})\mathrm{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 \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{x} = \underline{z} \vdash \dot{\neg}(\underline{x} = \underline{z})\mathrm{n} \gg \underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{x} = \underline{z} \Rightarrow \dot{\neg}(\underline{x} = \underline{z})\mathrm{n}; \underline{x} <= \underline{y} \vdash \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{MP2} \rhd \underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{x} = \underline{z} \Rightarrow \dot{\neg}(\underline{x} = \underline{z})\mathrm{n} \rhd \underline{x} <= \underline{y} \rhd \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{x} = \underline{z} \Rightarrow \dot{\neg}(\underline{x} = \underline{z})\mathrm{n}; \mathrm{prop\ lemma\ imply\ negation} \rhd \underline{x} = \underline{z} \Rightarrow \dot{\neg}(\underline{x} = \underline{z})\mathrm{n} \gg \dot{\neg}(\underline{x} = \underline{z})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\underline{y} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{y} <= \underline{z}; \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})\mathrm{n} \gg \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

$\underline{y}$; leqAddition $\rhd \underline{x} <= \underline{y} \gg (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z})$; LessNeq $\rhd \dot\neg(\underline{x} <= \underline{y} \Rightarrow \dot\neg(\dot\neg(\underline{x}=\underline{y})n)n)n \gg \dot\neg(\underline{x}=\underline{y})n$; NeqAddition $\rhd \dot\neg(\underline{x}=\underline{y})n \gg \dot\neg((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n$; JoinConjuncts $\rhd (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \rhd \dot\neg((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n \gg \dot\neg((\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \Rightarrow \dot\neg(\dot\neg((\underline{x}+\underline{z}) = (\underline{y}+\underline{z}))n)n)n\rceil, p_0, \mathsf{c})]$

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

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

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

[Leq + 1 $\stackrel{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon \underline{x} <= \underline{y} \vdash 0 < 1 \gg \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)n)n)n$; LessAdditionLeft $\rhd \dot\neg(0 <= 1 \Rightarrow \dot\neg(\dot\neg(0 = 1)n)n)n \gg \dot\neg((\underline{y}+0) <= (\underline{y}+1) \Rightarrow \dot\neg(\dot\neg((\underline{y}+0) = (\underline{y}+1))n)n)n$; plus0 $\gg (\underline{y}+0) = \underline{y}$; SubLessLeft $\rhd (\underline{y}+0) = \underline{y} \rhd \dot\neg((\underline{y}+0) <= (\underline{y}+1) \Rightarrow \dot\neg(\dot\neg((\underline{y}+0) = (\underline{y}+1))n)n)n \gg \dot\neg(\underline{y} <= (\underline{y}+1) \Rightarrow \dot\neg(\dot\neg(\underline{y} = (\underline{y}+1))n)n)n$; leqLessTransitivity $\rhd \underline{x} <= \underline{y} \rhd \dot\neg(\underline{y} <= (\underline{y}+1) \Rightarrow \dot\neg(\dot\neg(\underline{y} = (\underline{y}+1))n)n)n \gg \dot\neg(\underline{x} <= (\underline{y}+1) \Rightarrow \dot\neg(\dot\neg(\underline{x} = (\underline{y}+1))n)n)n\rceil, p_0, \mathsf{c})]$

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

[LeqAdditionLeft $\stackrel{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{x} <= \underline{y} \vdash$ leqAddition $\rhd \underline{x} <= \underline{y} \gg (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z})$; plusCommutativity $\gg (\underline{x}+\underline{z}) = (\underline{z}+\underline{x})$; plusCommutativity $\gg (\underline{y}+\underline{z}) = (\underline{z}+\underline{y})$; subLeqLeft $\rhd (\underline{x}+\underline{z}) = (\underline{z}+\underline{x}) \rhd (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \gg (\underline{z}+\underline{x}) <= (\underline{y}+\underline{z})$; subLeqRight $\rhd (\underline{y}+\underline{z}) = (\underline{z}+\underline{y}) \rhd (\underline{z}+\underline{x}) <= (\underline{y}+\underline{z}) \gg (\underline{z}+\underline{x}) <= (\underline{z}+\underline{y})\rceil, p_0, \mathsf{c})]$

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

[leqSubtraction $\stackrel{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \vdash$ leqAddition $\rhd (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \gg ((\underline{x}+\underline{z}) + (-u\underline{z})) <= ((\underline{y}+\underline{z}) + (-u\underline{z}))$; $x = x + y - y \gg \underline{x} = ((\underline{x}+\underline{z}) + (-u\underline{z}))$; eqSymmetry $\rhd \underline{x} = ((\underline{x}+\underline{z}) + (-u\underline{z})) \gg ((\underline{x}+\underline{z}) + (-u\underline{z})) = \underline{x}$; $x = x + y - y \gg \underline{y} = ((\underline{y}+\underline{z}) + (-u\underline{z}))$; eqSymmetry $\rhd \underline{y} = ((\underline{y}+\underline{z}) + (-u\underline{z})) \gg ((\underline{y}+\underline{z}) + (-u\underline{z})) = \underline{y}$; subLeqLeft $\rhd ((\underline{x}+\underline{z}) + (-u\underline{z})) = \underline{x} \rhd ((\underline{x}+\underline{z}) + (-u\underline{z})) <= ((\underline{y}+\underline{z}) + (-u\underline{z})) \gg \underline{x} <= ((\underline{y}+\underline{z}) + (-u\underline{z}))$; subLeqRight $\rhd ((\underline{y}+\underline{z}) + (-u\underline{z})) = \underline{y} \rhd \underline{x} <= ((\underline{y}+\underline{z}) + (-u\underline{z})) \gg \underline{x} <= \underline{y}\rceil, p_0, \mathsf{c})]$

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

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

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

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

$[\mathrm{negativeToLeft(Leq)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \underline{x} <= (\underline{y}+(-\mathrm{u}\underline{z})) \vdash \mathrm{leqAddition} \rhd \underline{x} <= (\underline{y}+(-\mathrm{u}\underline{z})) \gg (\underline{x}+\underline{z}) <= ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}); \mathrm{x} = \mathrm{x}+\mathrm{y}-\mathrm{y} \gg \underline{y} = ((\underline{y}+\underline{z})+(-\mathrm{u}\underline{z})); \mathrm{Three2threeTerms} \gg ((\underline{y}+\underline{z})+(-\mathrm{u}\underline{z})) = ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}); \mathrm{eqTransitivity} \rhd \underline{y} = ((\underline{y}+\underline{z})+(-\mathrm{u}\underline{z})) \rhd ((\underline{y}+\underline{z})+(-\mathrm{u}\underline{z})) = ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) \gg \underline{y} = ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}); \mathrm{eqSymmetry} \rhd \underline{y} = ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) \gg ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) = \underline{y}; \mathrm{subLeqRight} \rhd ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) = \underline{y} \rhd (\underline{x}+\underline{z}) <= ((\underline{y}+(-\mathrm{u}\underline{z}))+\underline{z}) \gg (\underline{x}+\underline{z}) <= \underline{y}\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{thirdGeq} \stackrel{\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, p_0, \mathsf{c})]$

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

$[\mathrm{LeqNegated} \stackrel{\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{lemma\ 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, p_0, \mathsf{c})]$

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

$[\mathrm{AddEquations(Leq)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \forall \underline{u}\colon \underline{x} <= \underline{y} \vdash \underline{z} <= \underline{u} \vdash \mathrm{leqAddition} \rhd \underline{x} <= \underline{y} \gg (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}); \mathrm{LeqAdditionLeft} \rhd \underline{z} <= \underline{u} \gg (\underline{y}+\underline{z}) <= (\underline{y}+\underline{u}); \mathrm{leqTransitivity} \rhd (\underline{x}+\underline{z}) <= (\underline{y}+\underline{z}) \rhd (\underline{y}+\underline{z}) <= (\underline{y}+\underline{u}) \gg (\underline{x}+\underline{z}) <= (\underline{y}+\underline{u})\rceil, p_0, \mathsf{c})]$

(*** LESS ***)

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

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

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

$[\mathrm{LessMultiplication} \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 \dot\neg(0 <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \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 \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{LessLeq} \rhd \dot\neg(0 <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{\mathsf{z}}; \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{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{LessNeq} \rhd \dot\neg(0 <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 = \underline{\mathsf{z}})\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot\neg(0 = \underline{\mathsf{z}})\mathrm{n} \gg \dot\neg(\underline{\mathsf{z}} = 0)\mathrm{n}; \mathrm{NeqMultiplication} \rhd \dot\neg(\underline{\mathsf{z}} = 0)\mathrm{n} \rhd \dot\neg(\underline{\mathsf{x}} = \underline{\mathsf{y}})\mathrm{n} \gg \dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}))\mathrm{n}; \mathrm{LeqNeqLess} \rhd (\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \rhd \dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}))\mathrm{n} \gg \dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{LessMultiplicationLeft} \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 \dot\neg(0 <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \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 \mathrm{LessMultiplication} \rhd \dot\neg(0 <= \underline{\mathsf{z}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{z}})\mathrm{n})\mathrm{n})\mathrm{n} \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{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{timesCommutativity} \gg (\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * \underline{\mathsf{x}}); \mathrm{timesCommutativity} \gg (\underline{\mathsf{y}} * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * \underline{\mathsf{y}}); \mathrm{SubLessLeft} \rhd (\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * \underline{\mathsf{x}}) \rhd \dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((\underline{\mathsf{z}} * \underline{\mathsf{x}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{z}} * \underline{\mathsf{x}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SubLessRight} \rhd (\underline{\mathsf{y}} * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * \underline{\mathsf{y}}) \rhd \dot\neg((\underline{\mathsf{z}} * \underline{\mathsf{x}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{z}} * \underline{\mathsf{x}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((\underline{\mathsf{z}} * \underline{\mathsf{x}}) <= (\underline{\mathsf{z}} * \underline{\mathsf{y}}) \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{z}} * \underline{\mathsf{x}}) = (\underline{\mathsf{z}} * \underline{\mathsf{y}}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{LessDivision} \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 0 <= \underline{\mathsf{z}} \vdash \dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{FromLess} \rhd \dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} * \underline{\mathsf{z}}) \Rightarrow \dot\neg(\dot\neg((\underline{\mathsf{x}} * \underline{\mathsf{z}}) = (\underline{\mathsf{y}} * \underline{\mathsf{z}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((\underline{\mathsf{y}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{x}} * \underline{\mathsf{z}}))\mathrm{n}; \mathrm{leqMultiplicationAxiom} \gg 0 <= \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{y}} <= \underline{\mathsf{x}} \Rightarrow (\underline{\mathsf{y}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{x}} * \underline{\mathsf{z}}); \mathrm{MP} \rhd 0 <= \underline{\mathsf{z}} \Rightarrow \underline{\mathsf{y}} <= \underline{\mathsf{x}} \Rightarrow (\underline{\mathsf{y}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{x}} * \underline{\mathsf{z}}) \rhd 0 <= \underline{\mathsf{z}} \gg \underline{\mathsf{y}} <= \underline{\mathsf{x}} \Rightarrow (\underline{\mathsf{y}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{x}} * \underline{\mathsf{z}}); \mathrm{Contrapositive} \rhd \underline{\mathsf{y}} <= \underline{\mathsf{x}} \Rightarrow (\underline{\mathsf{y}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{x}} * \underline{\mathsf{z}}) \gg \dot\neg((\underline{\mathsf{y}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{x}} * \underline{\mathsf{z}}))\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{y}} <= \underline{\mathsf{x}})\mathrm{n}; \mathrm{MP} \rhd \dot\neg((\underline{\mathsf{y}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{x}} * \underline{\mathsf{z}}))\mathrm{n} \Rightarrow \dot\neg(\underline{\mathsf{y}} <= \underline{\mathsf{x}})\mathrm{n} \rhd \dot\neg((\underline{\mathsf{y}} * \underline{\mathsf{z}}) <= (\underline{\mathsf{x}} * \underline{\mathsf{z}}))\mathrm{n} \gg \dot\neg(\underline{\mathsf{y}} <= \underline{\mathsf{x}})\mathrm{n}; \mathrm{ToLess} \rhd \dot\neg(\underline{\mathsf{y}} <= \underline{\mathsf{x}})\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}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{LessLeqTransitivity} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \dot\neg(\underline{\mathsf{x}} <= \underline{\mathsf{y}} \Rightarrow$

$\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})]$

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

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

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

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

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

$[\mathrm{LessTotality} \stackrel{\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}(\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})]$

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

$[\mathrm{NegativeLessPositive} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$

$\underline{x})n)n)n \vdash \mathrm{FirstConjunct} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \gg 0 <= \underline{x}; \mathrm{leqAddition} \rhd 0 <= \underline{x} \gg (0 + (-u\underline{x})) <= (\underline{x} + (-u\underline{x})); \mathrm{lemma\ plus0Left} \gg (0 + (-u\underline{x})) = (-u\underline{x}); \mathrm{Negative} \gg (\underline{x} + (-u\underline{x})) = 0; \mathrm{subLeqLeft} \rhd (0 + (-u\underline{x})) = (-u\underline{x}) \rhd (0 + (-u\underline{x})) <= (\underline{x} + (-u\underline{x})) \gg (-u\underline{x}) <= (\underline{x} + (-u\underline{x})); \mathrm{subLeqRight} \rhd (\underline{x} + (-u\underline{x})) = 0 \rhd (-u\underline{x}) <= (\underline{x} + (-u\underline{x})) \gg (-u\underline{x}) <= 0; \mathrm{leqLessTransitivity} \rhd (-u\underline{x}) <= 0 \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \gg \dot{\neg}((-u\underline{x}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{x}) = \underline{x})n)n)n\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{LessNegated} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \vdash \mathrm{LessLeq} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg \underline{x} <= \underline{y}; \mathrm{LeqNegated} \rhd \underline{x} <= \underline{y} \gg (-u\underline{y}) <= (-u\underline{x}); \mathrm{LessNeq} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg \dot{\neg}(\underline{x} = \underline{y})n; \mathrm{NeqNegated} \rhd \dot{\neg}(\underline{x} = \underline{y})n \gg \dot{\neg}((-u\underline{x}) = (-u\underline{y}))n; \mathrm{NeqSymmetry} \rhd \dot{\neg}((-u\underline{x}) = (-u\underline{y}))n \gg \dot{\neg}((-u\underline{y}) = (-u\underline{x}))n; \mathrm{LeqNeqLess} \rhd (-u\underline{y}) <= (-u\underline{x}) \rhd \dot{\neg}((-u\underline{y}) = (-u\underline{x}))n \gg \dot{\neg}((-u\underline{y}) <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{y}) = (-u\underline{x}))n)n)n\rceil, p_0, \mathsf{c})]$

$[-0 = 0 \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash (-u0) = 0]$

$[-0 = 0 \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \mathrm{Negative} \gg (0 + (-u0)) = 0; \mathrm{plus0} \gg (0+0) = 0; \mathrm{UniqueNegative} \rhd (0 + (-u0)) = 0 \rhd (0+0) = 0 \gg (-u0) = 0\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{PositiveNegated} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \vdash \mathrm{LessNegated} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \gg \dot{\neg}((-u\underline{x}) <= (-u0) \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{x}) = (-u0))n)n)n; -0 = 0 \gg (-u0) = 0; \mathrm{SubLessRight} \rhd (-u0) = 0 \rhd \dot{\neg}((-u\underline{x}) <= (-u0) \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{x}) = (-u0))n)n)n \gg \dot{\neg}((-u\underline{x}) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{x}) = 0)n)n)n\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{NonpositiveNegated} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \underline{x} <= 0 \vdash \mathrm{LeqNegated} \rhd \underline{x} <= 0 \gg (-u0) <= (-u\underline{x}); -0 = 0 \gg (-u0) = 0; \mathrm{subLeqLeft} \rhd (-u0) = 0 \rhd (-u0) <= (-u\underline{x}) \gg 0 <= (-u\underline{x})\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{NegativeNegated} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)n)n)n \vdash \mathrm{LessNegated} \rhd \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)n)n)n \gg \dot{\neg}((-u0) <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((-u0) = (-u\underline{x}))n)n)n; -0 = 0 \gg (-u0) = 0; \mathrm{SubLessLeft} \rhd (-u0) = 0 \rhd \dot{\neg}((-u0) <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((-u0) = (-u\underline{x}))n)n)n \gg \dot{\neg}(0 <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (-u\underline{x}))n)n)n\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{NonnegativeNegated} \overset{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon 0 <= \underline{x} \vdash \mathrm{LeqNegated} \rhd 0 <= \underline{x} \gg (-u\underline{x}) <= (-u0); -0 = 0 \gg (-u0) = 0; \mathrm{subLeqRight} \rhd (-u0) = 0 \rhd (-u\underline{x}) <= (-u0) \gg (-u\underline{x}) <= 0\rceil, p_0, \mathsf{c})]$

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

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

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

$[0 < 1/2 \stackrel{\mathrm{proof}}{\to} \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})]$

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

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

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

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

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

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

(*** NUMERISK ***)

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

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

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

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

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

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

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

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

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

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

$\underline{x})n)n)n;$ NegateDisjunct1 $\rhd \dot{\neg}(\dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(|\underline{x}| = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(0 <= \underline{x})n \Rightarrow \dot{\neg}(|\underline{x}| = (-u\underline{x}))n)n \rhd \dot{\neg}(\dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(|\underline{x}| = \underline{x})n)n)n \gg \dot{\neg}(\dot{\neg}(0 <= \underline{x})n \Rightarrow \dot{\neg}(|\underline{x}| = (-u\underline{x}))n)n;$ SecondConjunct $\rhd \dot{\neg}(\dot{\neg}(0 <= \underline{x})n \Rightarrow \dot{\neg}(|\underline{x}| = (-u\underline{x}))n)n \gg |\underline{x}| = (-u\underline{x})\rceil, p_0, \mathsf{c})]$

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

[lemma nonpositiveNumerical $\stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)n)n)n \vdash$ NegativeNumerical $\rhd \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)n)n)n \gg |\underline{x}| = (-u\underline{x}); \forall\underline{x}\colon \underline{x} = 0 \vdash$ eqSymmetry $\rhd \underline{x} = 0 \gg 0 = \underline{x};$ eqLeq $\rhd 0 = \underline{x} \gg 0 <= \underline{x};$ NonnegativeNumerical $\rhd 0 <= \underline{x} \gg |\underline{x}| = \underline{x}; -0 = 0 \gg (-u0) = 0;$ eqSymmetry $\rhd (-u0) = 0 \gg 0 = (-u0);$ EqNegated $\rhd 0 = \underline{x} \gg (-u0) = (-u\underline{x});$ eqTransitivity5 $\rhd |\underline{x}| = \underline{x} \rhd \underline{x} = 0 \rhd 0 = (-u0) \rhd (-u0) = (-u\underline{x}) \gg |\underline{x}| = (-u\underline{x}); \forall\underline{x}\colon$ 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 $\rhd \forall\underline{x}\colon \underline{x} = 0 \vdash |\underline{x}| = (-u\underline{x}) \gg \underline{x} = 0 \Rightarrow |\underline{x}| = (-u\underline{x}); \underline{x} <= 0 \vdash$ LeqLessEq $\rhd \underline{x} <= 0 \gg \dot{\neg}(\dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)n)n)n)n \Rightarrow \underline{x} = 0;$ FromDisjuncts $\rhd \dot{\neg}(\dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)n)n)n)n \Rightarrow \underline{x} = 0 \rhd \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)n)n)n \Rightarrow |\underline{x}| = (-u\underline{x}) \rhd \underline{x} = 0 \Rightarrow |\underline{x}| = (-u\underline{x}) \gg |\underline{x}| = (-u\underline{x})\rceil, p_0, \mathsf{c})]$

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

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

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

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

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

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

$|\underline{y}|; \forall \underline{x}\colon \forall \underline{y}\colon \underline{x} = \underline{y} \vdash \mathrm{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon 0 <= \underline{x} \vdash \underline{x} = \underline{y} \vdash |\underline{x}| = |\underline{y}| \gg 0 <= \underline{x} \Rightarrow \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}|; \mathrm{Ded} \rhd \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(0 <= \underline{x})\mathrm{n} \vdash \underline{x} = \underline{y} \vdash |\underline{x}| = |\underline{y}| \gg \dot{\neg}(0 <= \underline{x})\mathrm{n} \Rightarrow \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}|; \mathrm{FromNegations} \rhd 0 <= \underline{x} \Rightarrow \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}| \rhd \dot{\neg}(0 <= \underline{x})\mathrm{n} \Rightarrow \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}| \gg \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}|; \mathrm{MP} \rhd \underline{x} = \underline{y} \Rightarrow |\underline{x}| = |\underline{y}| \rhd \underline{x} = \underline{y} \gg |\underline{x}| = |\underline{y}|\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{SignNumerical}(+) \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{PositiveNumerical} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg |\underline{x}| = \underline{x}; \mathrm{PositiveNegated} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}\underline{x}) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{x}) = 0)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{NegativeNumerical} \rhd \dot{\neg}((-\mathrm{u}\underline{x}) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{x}) = 0)\mathrm{n})\mathrm{n})\mathrm{n} \gg |(-\mathrm{u}\underline{x})| = (-\mathrm{u}(-\mathrm{u}\underline{x})); \mathrm{DoubleMinus} \gg (-\mathrm{u}(-\mathrm{u}\underline{x})) = \underline{x}; \mathrm{eqTransitivity} \rhd |(-\mathrm{u}\underline{x})| = (-\mathrm{u}(-\mathrm{u}\underline{x})) \rhd (-\mathrm{u}(-\mathrm{u}\underline{x})) = \underline{x} \gg |(-\mathrm{u}\underline{x})| = \underline{x}; \mathrm{eqSymmetry} \rhd |(-\mathrm{u}\underline{x})| = \underline{x} \gg \underline{x} = |(-\mathrm{u}\underline{x})|; \mathrm{eqTransitivity} \rhd |\underline{x}| = \underline{x} \rhd \underline{x} = |(-\mathrm{u}\underline{x})| \gg |\underline{x}| = |(-\mathrm{u}\underline{x})|\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{SignNumerical} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{NegativeNegated} \rhd \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)\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{SignNumerical}(+) \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 |(-\mathrm{u}\underline{x})| = |(-\mathrm{u}(-\mathrm{u}\underline{x}))|; \mathrm{DoubleMinus} \gg (-\mathrm{u}(-\mathrm{u}\underline{x})) = \underline{x}; \mathrm{SameNumerical} \rhd (-\mathrm{u}(-\mathrm{u}\underline{x})) = \underline{x} \gg |(-\mathrm{u}(-\mathrm{u}\underline{x}))| = |\underline{x}|; \mathrm{eqTransitivity} \rhd |(-\mathrm{u}\underline{x})| = |(-\mathrm{u}(-\mathrm{u}\underline{x}))| \rhd |(-\mathrm{u}(-\mathrm{u}\underline{x}))| = |\underline{x}| \gg |(-\mathrm{u}\underline{x})| = |\underline{x}|; \mathrm{eqSymmetry} \rhd |(-\mathrm{u}\underline{x})| = |\underline{x}| \gg |\underline{x}| = |(-\mathrm{u}\underline{x})|; \forall \underline{x}\colon \underline{x} = 0 \vdash \mathrm{EqNegated} \rhd \underline{x} = 0 \gg (-\mathrm{u}\underline{x}) = (-\mathrm{u}0); -0 = 0 \gg (-\mathrm{u}0) = 0; \mathrm{eqSymmetry} \rhd \underline{x} = 0 \gg 0 = \underline{x}; \mathrm{eqTransitivity4} \rhd (-\mathrm{u}\underline{x}) = (-\mathrm{u}0) \rhd (-\mathrm{u}0) = 0 \rhd 0 = \underline{x} \gg (-\mathrm{u}\underline{x}) = \underline{x}; \mathrm{eqSymmetry} \rhd (-\mathrm{u}\underline{x}) = \underline{x} \gg \underline{x} = (-\mathrm{u}\underline{x}); \mathrm{SameNumerical} \rhd \underline{x} = (-\mathrm{u}\underline{x}) \gg |\underline{x}| = |(-\mathrm{u}\underline{x})|; \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{SignNumerical}(+) \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \gg |\underline{x}| = |(-\mathrm{u}\underline{x})|; \forall \underline{x}\colon \mathrm{Ded} \rhd \forall \underline{x}\colon \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \vdash |\underline{x}| = |(-\mathrm{u}\underline{x})| \gg \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow |\underline{x}| = |(-\mathrm{u}\underline{x})|; \mathrm{Ded} \rhd \forall \underline{x}\colon \underline{x} = 0 \vdash |\underline{x}| = |(-\mathrm{u}\underline{x})| \gg \underline{x} = 0 \Rightarrow |\underline{x}| = |(-\mathrm{u}\underline{x})|; \mathrm{Ded} \rhd \forall \underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \vdash |\underline{x}| = |(-\mathrm{u}\underline{x})| \gg \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow |\underline{x}| = |(-\mathrm{u}\underline{x})|; \mathrm{LessTotality} \gg \dot{\neg}(\dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{x} = 0)\mathrm{n} \Rightarrow \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{From3Disjuncts} \rhd \dot{\neg}(\dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{x} = 0)\mathrm{n} \Rightarrow \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow |\underline{x}| = |(-\mathrm{u}\underline{x})| \rhd \underline{x} = 0 \Rightarrow |\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} \Rightarrow |\underline{x}| = |(-\mathrm{u}\underline{x})| \gg |\underline{x}| = |(-\mathrm{u}\underline{x})|\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

$(((-u1) * \underline{x}) + ((-u1) * \underline{y})) \rhd (((-u1) * \underline{x}) + ((-u1) * \underline{y})) = ((-u1) * (\underline{x} + \underline{y})) \rhd ((-u1) * (\underline{x} + \underline{y})) = (-u(\underline{x} + \underline{y})) \gg ((-u\underline{x}) + (-u\underline{y})) = (-u(\underline{x} + \underline{y}))\rceil, p_0, \mathsf{c})]$

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

[MinusNegated $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{x}\colon \forall \underline{y}\colon$ DoubleMinus $\gg (-u(-u\underline{y})) = \underline{y}$; eqAddition $\rhd (-u(-u\underline{y})) = \underline{y} \gg ((-u(-u\underline{y})) + (-u\underline{x})) = (\underline{y} + (-u\underline{x}))$; eqSymmetry $\rhd ((-u(-u\underline{y})) + (-u\underline{x})) = (\underline{y} + (-u\underline{x})) \gg (\underline{y} + (-u\underline{x})) = ((-u(-u\underline{y})) + (-u\underline{x}))$; $-x - y = -(x + y) \gg ((-u(-u\underline{y})) + (-u\underline{x})) = (-u((-u\underline{y}) + \underline{x}))$; plusCommutativity $\gg ((-u\underline{y}) + \underline{x}) = (\underline{x} + (-u\underline{y}))$; EqNegated $\rhd ((-u\underline{y}) + \underline{x}) = (\underline{x} + (-u\underline{y})) \gg (-u((-u\underline{y}) + \underline{x})) = (-u(\underline{x} + (-u\underline{y})))$; eqTransitivity4 $\rhd (\underline{y} + (-u\underline{x})) = ((-u(-u\underline{y})) + (-u\underline{x})) \rhd ((-u(-u\underline{y})) + (-u\underline{x})) = (-u((-u\underline{y}) + \underline{x})) \rhd (-u((-u\underline{y}) + \underline{x})) = (-u(\underline{x} + (-u\underline{y}))) \gg (\underline{y} + (-u\underline{x})) = (-u(\underline{x} + (-u\underline{y})))$; eqSymmetry $\rhd (\underline{y} + (-u\underline{x})) = (-u(\underline{x} + (-u\underline{y}))) \gg (-u(\underline{x} + (-u\underline{y}))) = (\underline{y} + (-u\underline{x}))\rceil, p_0, \mathsf{c})]$

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

[NumericalDifference $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{x}\colon \forall \underline{y}\colon$ SignNumerical $\gg |(\underline{x} + (-u\underline{y}))| = |(-u(\underline{x} + (-u\underline{y})))|$; MinusNegated $\gg (-u(\underline{x} + (-u\underline{y}))) = (\underline{y} + (-u\underline{x}))$; SameNumerical $\rhd (-u(\underline{x} + (-u\underline{y}))) = (\underline{y} + (-u\underline{x})) \gg |(-u(\underline{x} + (-u\underline{y})))| = |(\underline{y} + (-u\underline{x}))|$; eqTransitivity $\rhd |(\underline{x} + (-u\underline{y}))| = |(-u(\underline{x} + (-u\underline{y})))| \rhd |(-u(\underline{x} + (-u\underline{y})))| = |(\underline{y} + (-u\underline{x}))| \gg |(\underline{x} + (-u\underline{y}))| = |(\underline{y} + (-u\underline{x}))|\rceil, p_0, \mathsf{c})]$

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

[SplitNumericalSumHelper $\overset{\text{proof}}{\rightarrow}$ $\lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall \underline{x}\colon \forall \underline{y}\colon |((-u\underline{x}) + (-u\underline{y}))| <= (|(-u\underline{x})| + |(-u\underline{y})|) \vdash$ SignNumerical $\gg |\underline{x}| = |(-u\underline{x})|$; SignNumerical $\gg |\underline{y}| = |(-u\underline{y})|$; AddEquations $\rhd |\underline{x}| = |(-u\underline{x})| \rhd |\underline{y}| = |(-u\underline{y})| \gg (|\underline{x}| + |\underline{y}|) = (|(-u\underline{x})| + |(-u\underline{y})|)$; eqSymmetry $\rhd (|\underline{x}| + |\underline{y}|) = (|(-u\underline{x})| + |(-u\underline{y})|) \gg (|(-u\underline{x})| + |(-u\underline{y})|) = (|\underline{x}| + |\underline{y}|)$; $-x - y = -(x + y) \gg ((-u\underline{x}) + (-u\underline{y})) = (-u(\underline{x} + \underline{y}))$; SameNumerical $\rhd ((-u\underline{x}) + (-u\underline{y})) = (-u(\underline{x} + \underline{y})) \gg |((-u\underline{x}) + (-u\underline{y}))| = |(-u(\underline{x} + \underline{y}))|$; SignNumerical $\gg |(\underline{x} + \underline{y})| = |(-u(\underline{x} + \underline{y}))|$; eqSymmetry $\rhd |(\underline{x} + \underline{y})| = |(-u(\underline{x} + \underline{y}))| \gg |(-u(\underline{x} + \underline{y}))| = |(\underline{x} + \underline{y})|$; eqTransitivity $\rhd |((-u\underline{x}) + (-u\underline{y}))| = |(-u(\underline{x} + \underline{y}))| \rhd |(-u(\underline{x} + \underline{y}))| = |(\underline{x} + \underline{y})| \gg |((-u\underline{x}) + (-u\underline{y}))| = |(\underline{x} + \underline{y})|$; subLeqRight $\rhd (|(-u\underline{x})| + |(-u\underline{y})|) = (|\underline{x}| + |\underline{y}|) \rhd |((-u\underline{x}) + (-u\underline{y}))| <= (|(-u\underline{x})| + |(-u\underline{y})|) \gg |((-u\underline{x}) + (-u\underline{y}))| <= (|\underline{x}| + |\underline{y}|)$; subLeqLeft $\rhd |((-u\underline{x}) + (-u\underline{y}))| = |(\underline{x} + \underline{y})| \rhd |((-u\underline{x}) + (-u\underline{y}))| <= (|\underline{x}| + |\underline{y}|) \gg |(\underline{x} + \underline{y})| <= (|\underline{x}| + |\underline{y}|)\rceil, p_0, \mathsf{c})]$

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

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

$\underline{y} \gg (|\underline{x}| + |\underline{y}|) = (\underline{x} + \underline{y}); \mathrm{eqSymmetry} \rhd (|\underline{x}| + |\underline{y}|) = (\underline{x} + \underline{y}) \gg (\underline{x} + \underline{y}) = (|\underline{x}| + |\underline{y}|); \mathrm{eqTransitivity} \rhd |(\underline{x} + \underline{y})| = (\underline{x} + \underline{y}) \rhd (\underline{x} + \underline{y}) = (|\underline{x}| + |\underline{y}|) \gg |(\underline{x} + \underline{y})| = (|\underline{x}| + |\underline{y}|); \mathrm{eqLeq} \rhd |(\underline{x} + \underline{y})| = (|\underline{x}| + |\underline{y}|) \gg |(\underline{x} + \underline{y})| <= (|\underline{x}| + |\underline{y}|)\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

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

$[\mathrm{splitNumericalSum}(+ - \mathrm{small}) \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 \underline{y} <= 0 \vdash |\underline{y}| <= |\underline{x}| \vdash \mathrm{LeqAdditionLeft} \rhd \underline{y} <= 0 \gg (\underline{x} + \underline{y}) <= (\underline{x} + 0); \mathrm{plus0} \gg (\underline{x} + 0) = \underline{x}; \mathrm{subLeqRight} \rhd (\underline{x} + 0) = \underline{x} \rhd (\underline{x} + \underline{y}) <= (\underline{x} + 0) \gg (\underline{x} + \underline{y}) <= \underline{x}; \mathrm{PositiveToRight(Leq)(1term)} \rhd |\underline{y}| <= |\underline{x}| \gg 0 <= (|\underline{x}| + (-\mathrm{u}|\underline{y}|)); \mathrm{lemma\ nonpositiveNumerical} \rhd \underline{y} <= 0 \gg |\underline{y}| = (-\mathrm{u}\underline{y}); \mathrm{EqNegated} \rhd |\underline{y}| = (-\mathrm{u}\underline{y}) \gg (-\mathrm{u}|\underline{y}|) = (-\mathrm{u}(-\mathrm{u}\underline{y})); \mathrm{DoubleMinus} \gg (-\mathrm{u}(-\mathrm{u}\underline{y})) = \underline{y}; \mathrm{eqTransitivity} \rhd (-\mathrm{u}|\underline{y}|) = (-\mathrm{u}(-\mathrm{u}\underline{y})) \rhd (-\mathrm{u}(-\mathrm{u}\underline{y})) = \underline{y} \gg (-\mathrm{u}|\underline{y}|) = \underline{y}; \mathrm{NonnegativeNumerical} \rhd 0 <= \underline{x} \gg |\underline{x}| = \underline{x}; \mathrm{AddEquations} \rhd |\underline{x}| = \underline{x} \rhd (-\mathrm{u}|\underline{y}|) = \underline{y} \gg (|\underline{x}| + (-\mathrm{u}|\underline{y}|)) = (\underline{x} + \underline{y}); \mathrm{subLeqRight} \rhd (|\underline{x}| + (-\mathrm{u}|\underline{y}|)) = (\underline{x} + \underline{y}) \rhd 0 <= (|\underline{x}| + (-\mathrm{u}|\underline{y}|)) \gg 0 <= (\underline{x} + \underline{y}); \mathrm{NonnegativeNumerical} \rhd 0 <= (\underline{x} + \underline{y}) \gg |(\underline{x} + \underline{y})| = (\underline{x} + \underline{y}); \mathrm{eqSymmetry} \rhd |(\underline{x} + \underline{y})| = (\underline{x} + \underline{y}) \gg (\underline{x} + \underline{y}) = |(\underline{x} + \underline{y})|; \mathrm{eqSymmetry} \rhd |\underline{x}| = \underline{x} \gg \underline{x} = |\underline{x}|; \mathrm{subLeqLeft} \rhd (\underline{x} + \underline{y}) = |(\underline{x} + \underline{y})| \rhd (\underline{x} + \underline{y}) <= \underline{x} \gg |(\underline{x} + \underline{y})| <= \underline{x}; \mathrm{subLeqRight} \rhd \underline{x} = |\underline{x}| \rhd |(\underline{x} + \underline{y})| <= \underline{x} \gg |(\underline{x} + \underline{y})| <= |\underline{x}|\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{splitNumericalSum}(+ - \mathrm{big}) \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 \underline{y} <= 0 \vdash \dot{\neg}\,(|\underline{x}| <= |\underline{y}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|\underline{x}| = |\underline{y}|)\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{NonnegativeNegated} \rhd 0 <= \underline{x} \gg (-\mathrm{u}\underline{x}) <= 0; \mathrm{NonpositiveNegated} \rhd \underline{y} <= 0 \gg 0 <= (-\mathrm{u}\underline{y}); \mathrm{SignNumerical} \gg |\underline{x}| = |(-\mathrm{u}\underline{x})|; \mathrm{SubLessLeft} \rhd |\underline{x}| = |(-\mathrm{u}\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}\,(|(-\mathrm{u}\underline{x})| <= |\underline{y}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(-\mathrm{u}\underline{x})| = |\underline{y}|)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SignNumerical} \gg |\underline{y}| = |(-\mathrm{u}\underline{y})|; \mathrm{SubLessRight} \rhd |\underline{y}| = |(-\mathrm{u}\underline{y})| \rhd \dot{\neg}\,(|(-\mathrm{u}\underline{x})| <= |\underline{y}| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(-\mathrm{u}\underline{x})| = |\underline{y}|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}\,(|(-\mathrm{u}\underline{x})| <= |(-\mathrm{u}\underline{y})| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(-\mathrm{u}\underline{x})| = |(-\mathrm{u}\underline{y})|)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessLeq} \rhd \dot{\neg}\,(|(-\mathrm{u}\underline{x})| <= |(-\mathrm{u}\underline{y})| \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(-\mathrm{u}\underline{x})| = |(-\mathrm{u}\underline{y})|)\mathrm{n})\mathrm{n})\mathrm{n} \gg |(-\mathrm{u}\underline{x})| <= |(-\mathrm{u}\underline{y})|; \mathrm{splitNumericalSum}(+ - \mathrm{small}) \rhd 0 <= (-\mathrm{u}\underline{y}) \rhd (-\mathrm{u}\underline{x}) <= 0 \rhd |(-\mathrm{u}\underline{x})| <= |(-\mathrm{u}\underline{y})| \gg |((-\mathrm{u}\underline{y}) + (-\mathrm{u}\underline{x}))| <= |(-\mathrm{u}\underline{y})|; \mathrm{SignNumerical} \gg |(\underline{x} + \underline{y})| = |(-\mathrm{u}(\underline{x} + \underline{y}))|; -\mathrm{x} - \mathrm{y} = -(\mathrm{x} + \mathrm{y}) \gg ((-\mathrm{u}\underline{x}) + (-\mathrm{u}\underline{y})) = (-\mathrm{u}(\underline{x} + \underline{y})); \mathrm{plusCommutativity} \gg ((-\mathrm{u}\underline{x}) + (-\mathrm{u}\underline{y})) = ((-\mathrm{u}\underline{y}) + (-\mathrm{u}\underline{x})); \mathrm{Equality} \rhd ((-\mathrm{u}\underline{x}) + (-\mathrm{u}\underline{y})) = (-\mathrm{u}(\underline{x} + \underline{y})) \rhd ((-\mathrm{u}\underline{x}) + (-\mathrm{u}\underline{y})) = ((-\mathrm{u}\underline{y}) + (-\mathrm{u}\underline{x})) \gg (-\mathrm{u}(\underline{x} + \underline{y})) = ((-\mathrm{u}\underline{y}) + (-\mathrm{u}\underline{x})); \mathrm{SameNumerical} \rhd (-\mathrm{u}(\underline{x} + \underline{y})) = ((-\mathrm{u}\underline{y}) + (-\mathrm{u}\underline{x})) \gg |(-\mathrm{u}(\underline{x} + \underline{y}))| =$

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

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

[splitNumericalSum(+−) $\stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon |\underline{y}| <= |\underline{x}| \vdash 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash$ splitNumericalSum(+ − small) $\rhd 0 <= \underline{x} \rhd \underline{y} <= 0 \rhd |\underline{y}| <= |\underline{x}| \gg |(\underline{x}+\underline{y})| <= |\underline{x}|; 0 <= |x| \gg 0 <= |\underline{y}|$; LeqAdditionLeft $\rhd 0 <= |\underline{y}| \gg (|\underline{x}|+0) <= (|\underline{x}|+|\underline{y}|)$; plus0 $\gg (|\underline{x}|+0) = |\underline{x}|$; subLeqLeft $\rhd (|\underline{x}|+0) = |\underline{x}| \rhd (|\underline{x}|+0) <= (|\underline{x}|+|\underline{y}|) \gg |\underline{x}| <= (|\underline{x}|+|\underline{y}|)$; leqTransitivity $\rhd |(\underline{x}+\underline{y})| <= |\underline{x}| \rhd |\underline{x}| <= (|\underline{x}|+|\underline{y}|) \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \forall\underline{x}\colon\forall\underline{y}\colon \dot\neg(|\underline{y}| <= |\underline{x}|)n \vdash 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash$ ToLess $\rhd \dot\neg(|\underline{y}| <= |\underline{x}|)n \gg \dot\neg(|\underline{x}| <= |\underline{y}| \Rightarrow \dot\neg(\dot\neg(|\underline{x}| = |\underline{y}|)n)n)n$; splitNumericalSum(+ − big) $\rhd 0 <= \underline{x} \rhd \underline{y} <= 0 \rhd \dot\neg(|\underline{x}| <= |\underline{y}| \Rightarrow \dot\neg(\dot\neg(|\underline{x}| = |\underline{y}|)n)n)n \gg |(\underline{x}+\underline{y})| <= |\underline{y}|; 0 <= |x| \gg 0 <= |\underline{x}|$; leqAddition $\rhd 0 <= |\underline{x}| \gg (0+|\underline{y}|) <= (|\underline{x}|+|\underline{y}|)$; lemma plus0Left $\gg (0+|\underline{y}|) = |\underline{y}|$; subLeqLeft $\rhd (0+|\underline{y}|) = |\underline{y}| \rhd (0+|\underline{y}|) <= (|\underline{x}|+|\underline{y}|) \gg |\underline{y}| <= (|\underline{x}|+|\underline{y}|)$; leqTransitivity $\rhd |(\underline{x}+\underline{y})| <= |\underline{y}| \rhd |\underline{y}| <= (|\underline{x}|+|\underline{y}|) \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \forall\underline{x}\colon\forall\underline{y}\colon$ Ded $\rhd \forall\underline{x}\colon\forall\underline{y}\colon |\underline{y}| <= |\underline{x}| \vdash 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \gg |\underline{y}| <= |\underline{x}| \Rightarrow 0 <= \underline{x} \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|)$; Ded $\rhd \forall\underline{x}\colon\forall\underline{y}\colon \dot\neg(|\underline{y}| <= |\underline{x}|)n \vdash 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \gg \dot\neg(|\underline{y}| <= |\underline{x}|)n \Rightarrow 0 <= \underline{x} \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash$ FromNegations $\rhd |\underline{y}| <= |\underline{x}| \Rightarrow 0 <= \underline{x} \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \rhd \dot\neg(|\underline{y}| <= |\underline{x}|)n \Rightarrow 0 <= \underline{x} \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \gg 0 <= \underline{x} \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|)$; MP2 $\rhd 0 <= \underline{x} \Rightarrow \underline{y} <= 0 \Rightarrow |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|) \rhd 0 <= \underline{x} \rhd \underline{y} <= 0 \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|)\rceil, p_0, \mathsf{c})$]

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

[splitNumericalSum(−+) $\stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon \underline{x} <= 0 \vdash 0 <= \underline{y} \vdash$ NonpositiveNegated $\rhd \underline{x} <= 0 \gg 0 <= (-u\underline{x})$; NonnegativeNegated $\rhd 0 <= \underline{y} \gg (-u\underline{y}) <= 0$; splitNumericalSum(+−) $\rhd 0 <= (-u\underline{x}) \rhd (-u\underline{y}) <= 0 \gg |((-u\underline{x})+(-u\underline{y}))| <= (|(-u\underline{x})|+|(-u\underline{y})|)$; SplitNumericalSumHelper $\rhd |((-u\underline{x})+(-u\underline{y}))| <= (|(-u\underline{x})|+|(-u\underline{y})|) \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|)\rceil, p_0, \mathsf{c})$]

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

[splitNumericalSum $\stackrel{\text{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon 0 <= \underline{x} \vdash 0 <= \underline{y} \vdash$ splitNumericalSum(++) $\rhd 0 <= \underline{x} \rhd 0 <= \underline{y} \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \forall\underline{x}\colon\forall\underline{y}\colon 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash$ splitNumericalSum(+−) $\rhd 0 <= \underline{x} \rhd \underline{y} <= 0 \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \forall\underline{x}\colon\forall\underline{y}\colon \underline{x} <= 0 \vdash 0 <= \underline{y} \vdash$ splitNumericalSum(−+) $\rhd \underline{x} <= 0 \rhd 0 <= \underline{y} \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \forall\underline{x}\colon\forall\underline{y}\colon \underline{x} <= 0 \vdash \underline{y} <= 0 \vdash$ splitNumericalSum(−−) $\rhd \underline{x} <= 0 \rhd \underline{y} <= 0 \gg |(\underline{x}+\underline{y})| <= (|\underline{x}|+|\underline{y}|); \forall\underline{x}\colon\forall\underline{y}\colon$ 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})]$

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

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

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

$[\mathrm{insertMiddleTerm(Numerical)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \mathrm{splitNumericalSum} \gg |((\underline{x}+(-\mathrm{u}\underline{z}))+(\underline{z}+\underline{y}))| <= (|(\underline{x}+(-\mathrm{u}\underline{z}))|+|(\underline{z}+\underline{y})|); \mathrm{insertMiddleTerm(Sum)} \gg (\underline{x}+\underline{y}) = ((\underline{x}+(-\mathrm{u}\underline{z}))+(\underline{z}+\underline{y})); \mathrm{SameNumerical} \rhd (\underline{x}+\underline{y}) = ((\underline{x}+(-\mathrm{u}\underline{z}))+(\underline{z}+\underline{y})) \gg |(\underline{x}+\underline{y})| = |((\underline{x}+(-\mathrm{u}\underline{z}))+(\underline{z}+\underline{y}))|; \mathrm{eqSymmetry} \rhd |(\underline{x}+\underline{y})| = |((\underline{x}+(-\mathrm{u}\underline{z}))+(\underline{z}+\underline{y}))| \gg |((\underline{x}+(-\mathrm{u}\underline{z}))+(\underline{z}+\underline{y}))| = |(\underline{x}+\underline{y})|; \mathrm{subLeqLeft} \rhd |((\underline{x}+(-\mathrm{u}\underline{z}))+(\underline{z}+\underline{y}))| = |(\underline{x}+\underline{y})| \rhd |((\underline{x}+(-\mathrm{u}\underline{z}))+(\underline{z}+\underline{y}))| <= (|(\underline{x}+(-\mathrm{u}\underline{z}))|+|(\underline{z}+\underline{y})|) \gg |(\underline{x}+\underline{y})| <= (|(\underline{x}+(-\mathrm{u}\underline{z}))|+|(\underline{z}+\underline{y})|)\rceil, \mathrm{p}_0, \mathsf{c})]$
(*** REGNESTYKKER ***)

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

$[\mathrm{insertMiddleTerm(Difference)} \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 \mathrm{insertMiddleTerm(Sum)} \gg (\underline{x}+(-\mathrm{u}\underline{y})) = ((\underline{x}+(-\mathrm{u}(-\mathrm{u}\underline{z})))+((-\mathrm{u}\underline{z})+(-\mathrm{u}\underline{y}))); \mathrm{DoubleMinus} \gg (-\mathrm{u}(-\mathrm{u}\underline{z})) = \underline{z}; \mathrm{lemma\ eqAdditionLeft} \rhd (-\mathrm{u}(-\mathrm{u}\underline{z})) = \underline{z} \gg (\underline{x}+(-\mathrm{u}(-\mathrm{u}\underline{z}))) = (\underline{x}+\underline{z}); \mathrm{plusCommutativity} \gg ((-\mathrm{u}\underline{z})+(-\mathrm{u}\underline{y})) = ((-\mathrm{u}\underline{y})+(-\mathrm{u}\underline{z})); -\mathrm{x} - \mathrm{y} = -(\mathrm{x}+\mathrm{y}) \gg ((-\mathrm{u}\underline{y})+(-\mathrm{u}\underline{z})) = (-\mathrm{u}(\underline{y}+\underline{z})); \mathrm{eqTransitivity} \rhd ((-\mathrm{u}\underline{z})+(-\mathrm{u}\underline{y})) = ((-\mathrm{u}\underline{y})+(-\mathrm{u}\underline{z})) \rhd ((-\mathrm{u}\underline{y})+(-\mathrm{u}\underline{z})) = (-\mathrm{u}(\underline{y}+\underline{z})) \gg ((-\mathrm{u}\underline{z})+(-\mathrm{u}\underline{y})) = (-\mathrm{u}(\underline{y}+\underline{z})); \mathrm{AddEquations} \rhd (\underline{x}+(-\mathrm{u}(-\mathrm{u}\underline{z}))) = (\underline{x}+\underline{z}) \rhd ((-\mathrm{u}\underline{z})+(-\mathrm{u}\underline{y})) = (-\mathrm{u}(\underline{y}+\underline{z})) \gg ((\underline{x}+(-\mathrm{u}(-\mathrm{u}\underline{z})))+((-\mathrm{u}\underline{z})+(-\mathrm{u}\underline{y}))) = ((\underline{x}+\underline{z})+(-\mathrm{u}(\underline{y}+\underline{z}))); \mathrm{eqTransitivity} \rhd (\underline{x}+(-\mathrm{u}\underline{y})) = ((\underline{x}+(-\mathrm{u}(-\mathrm{u}\underline{z})))+((-\mathrm{u}\underline{z})+(-\mathrm{u}\underline{y}))) \rhd ((\underline{x}+(-\mathrm{u}(-\mathrm{u}\underline{z})))+((-\mathrm{u}\underline{z})+(-\mathrm{u}\underline{y}))) =$

$((\underline{x} + \underline{z}) + (-u(\underline{y} + \underline{z}))) \gg (\underline{x} + (-u\underline{y})) = ((\underline{x} + \underline{z}) + (-u(\underline{y} + \underline{z})))\rceil, p_0, \mathsf{c})]$

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

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

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

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

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

$[\mathrm{ThreeWholes} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x} \colon \mathrm{TwoWholes} \gg (\underline{x} + \underline{x}) = ((1 + 1) * \underline{x}); \mathrm{lemma\ times1Left} \gg (1 * \underline{x}) = \underline{x}; \mathrm{eqSymmetry} \rhd (1 * \underline{x}) = \underline{x} \gg \underline{x} = (1 * \underline{x}); \mathrm{AddEquations} \rhd (\underline{x} + \underline{x}) = ((1 + 1) * \underline{x}) \rhd \underline{x} = (1 * \underline{x}) \gg ((\underline{x} + \underline{x}) + \underline{x}) = (((1 + 1) * \underline{x}) + (1 * \underline{x})); \mathrm{DistributionOutLeft} \gg (((1 + 1) * \underline{x}) + (1 * \underline{x})) = (\underline{x} * ((1 + 1) + 1)); \mathrm{timesCommutativity} \gg (\underline{x} * ((1 + 1) + 1)) = (((1 + 1) + 1) * \underline{x}); \mathrm{eqTransitivity4} \rhd ((\underline{x} + \underline{x}) + \underline{x}) = (((1+1) * \underline{x}) + (1 * \underline{x})) \rhd (((1+1) * \underline{x}) + (1 * \underline{x})) = (\underline{x} * ((1+1)+1)) \rhd (\underline{x} * ((1+1)+1)) = (((1 + 1) + 1) * \underline{x}) \gg ((\underline{x} + \underline{x}) + \underline{x}) = (((1 + 1) + 1) * \underline{x}); \mathrm{Repetition} \rhd ((\underline{x} + \underline{x}) + \underline{x}) = (((1 + 1) + 1) * \underline{x}) \gg ((\underline{x} + \underline{x}) + \underline{x}) = (((1 + 1) + 1) * \underline{x})\rceil, p_0, \mathsf{c})]$

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

$[0 < 3 \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash 0 < 2 \gg \dot{\neg}(0 <= (1 + 1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (1 + 1))n)n)n; \mathrm{LessLeq} \rhd \dot{\neg}(0 <= (1 + 1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (1 + 1))n)n)n \gg 0 <= (1 + 1); \mathrm{Leq} + 1 \rhd 0 <= (1 + 1) \gg \dot{\neg}(0 <= ((1 + 1) + 1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1 + 1) + 1))n)n)n; \mathrm{Repetition} \rhd \dot{\neg}(0 <= ((1 + 1) + 1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))n)n)n \gg \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))n)n)n\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{ThreeThirds} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x} \colon 0 < 3 \gg \dot{\neg}(0 <= ((1 + 1) + 1) \Rightarrow$

$\dot{\neg}(\dot{\neg}(0=((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveNonzero} \rhd \dot{\neg}(0<=((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0=((1+1)+1))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(((1+1)+1)=0)\mathrm{n}; \mathrm{ThreeWholes} \gg (((\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})+(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}}))+(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})) = (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})); \mathrm{timesAssociativity} \gg ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{\mathsf{x}}) = (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})); \mathrm{eqSymmetry} \rhd ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{\mathsf{x}}) = (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})) \gg (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})) = ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{\mathsf{x}}); \mathrm{Reciprocal} \rhd \dot{\neg}(((1+1)+1)=0)\mathrm{n} \gg (((1+1)+1)*\mathrm{rec}((1+1)+1)) = 1; \mathrm{eqMultiplication} \rhd (((1+1)+1)*\mathrm{rec}((1+1)+1)) = 1 \gg ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{\mathsf{x}}) = (1*\underline{\mathsf{x}}); \mathrm{lemma\ times1Left} \gg (1*\underline{\mathsf{x}}) = \underline{\mathsf{x}}; \mathrm{eqTransitivity5} \rhd (((\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})+(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}}))+(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})) = (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})) \rhd (((1+1)+1)*(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})) = ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{\mathsf{x}}) \rhd ((((1+1)+1)*\mathrm{rec}((1+1)+1))*\underline{\mathsf{x}}) = (1*\underline{\mathsf{x}}) \rhd (1*\underline{\mathsf{x}}) = \underline{\mathsf{x}} \gg$
$(((\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})+(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}}))+(\mathrm{rec}((1+1)+1)*\underline{\mathsf{x}})) = \underline{\mathsf{x}}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

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

$[\mathrm{Times}(-1) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}\colon \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{lemma\ eqMultiplicationLeft} \rhd ((-\mathrm{u}1)+1) = 0 \gg (\underline{\mathsf{x}}*((-\mathrm{u}1)+1)) = (\underline{\mathsf{x}}*0); \mathrm{x}*0=0 \gg (\underline{\mathsf{x}}*0) = 0; \mathrm{eqTransitivity} \rhd (\underline{\mathsf{x}}*((-\mathrm{u}1)+1)) = (\underline{\mathsf{x}}*0) \rhd (\underline{\mathsf{x}}*0) = 0 \gg (\underline{\mathsf{x}}*((-\mathrm{u}1)+1)) = 0; \mathrm{Distribution} \gg (\underline{\mathsf{x}}*((-\mathrm{u}1)+1)) = ((\underline{\mathsf{x}}*(-\mathrm{u}1))+(\underline{\mathsf{x}}*1)); \mathrm{eqSymmetry} \rhd (\underline{\mathsf{x}}*((-\mathrm{u}1)+1)) = ((\underline{\mathsf{x}}*(-\mathrm{u}1))+(\underline{\mathsf{x}}*1)) \gg ((\underline{\mathsf{x}}*(-\mathrm{u}1))+(\underline{\mathsf{x}}*1)) = (\underline{\mathsf{x}}*((-\mathrm{u}1)+1)); \mathrm{eqTransitivity} \rhd ((\underline{\mathsf{x}}*(-\mathrm{u}1))+(\underline{\mathsf{x}}*1)) = (\underline{\mathsf{x}}*((-\mathrm{u}1)+1)) \rhd (\underline{\mathsf{x}}*((-\mathrm{u}1)+1)) = 0 \gg ((\underline{\mathsf{x}}*(-\mathrm{u}1))+(\underline{\mathsf{x}}*1)) = 0; \mathrm{PositiveToRight(Eq)} \rhd ((\underline{\mathsf{x}}*(-\mathrm{u}1))+(\underline{\mathsf{x}}*1)) = 0 \gg (\underline{\mathsf{x}}*(-\mathrm{u}1)) = (0+(-\mathrm{u}(\underline{\mathsf{x}}*1))); \mathrm{lemma\ plus0Left} \gg (0+(-\mathrm{u}(\underline{\mathsf{x}}*1))) = (-\mathrm{u}(\underline{\mathsf{x}}*1)); \mathrm{eqTransitivity} \rhd (\underline{\mathsf{x}}*(-\mathrm{u}1)) = (0+(-\mathrm{u}(\underline{\mathsf{x}}*1))) \rhd (0+(-\mathrm{u}(\underline{\mathsf{x}}*1))) = (-\mathrm{u}(\underline{\mathsf{x}}*1)) \gg (\underline{\mathsf{x}}*(-\mathrm{u}1)) = (-\mathrm{u}(\underline{\mathsf{x}}*1)); \mathrm{times1} \gg (\underline{\mathsf{x}}*1) = \underline{\mathsf{x}}; \mathrm{EqNegated} \rhd (\underline{\mathsf{x}}*1) = \underline{\mathsf{x}} \gg (-\mathrm{u}(\underline{\mathsf{x}}*1)) = (-\mathrm{u}\underline{\mathsf{x}}); \mathrm{eqTransitivity} \rhd (\underline{\mathsf{x}}*(-\mathrm{u}1)) = (-\mathrm{u}(\underline{\mathsf{x}}*1)) \rhd (-\mathrm{u}(\underline{\mathsf{x}}*1)) = (-\mathrm{u}\underline{\mathsf{x}}) \gg (\underline{\mathsf{x}}*(-\mathrm{u}1)) = (-\mathrm{u}\underline{\mathsf{x}})\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

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

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

$\langle\lceil a\rceil\equiv^1\lceil b\rceil|\lceil x\rceil{:}{=}{=}\lceil t\rceil\rangle_{\mathrm{Me}}\rceil\rceil)]$

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

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

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

$[\mathrm{AllNegated(Imply)} \stackrel{\mathrm{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(v1)}{:}\,\forall\underline{a}{:}\,\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\dot{\neg}(\underline{a})n)n \vdash \mathrm{A4} @ \underline{x} \rhd \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\dot{\neg}(\underline{a})n)n \gg \dot{\neg}(\dot{\neg}(\underline{a})n)n; \mathrm{RemoveDoubleNeg} \rhd \dot{\neg}(\dot{\neg}(\underline{a})n)n \gg \underline{a}; \mathrm{Gen} \rhd \underline{a} \gg \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a}; \forall\underline{(v1)}{:}\,\forall\underline{a}{:}\,\mathrm{Ded} \rhd \forall\underline{(v1)}{:}\,\forall\underline{a}{:}\,\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\dot{\neg}(\underline{a})n)n \vdash \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a} \gg \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\dot{\neg}(\underline{a})n)n \Rightarrow \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a}; \mathrm{Contrapositive} \rhd \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\dot{\neg}(\underline{a})n)n \Rightarrow \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a} \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a})n \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\dot{\neg}(\underline{a})n)n)n; \mathrm{Repetition} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a})n \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\dot{\neg}(\underline{a})n)n)n \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a})n \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\dot{\neg}(\underline{a})n)n)n\rceil, p_0, c)]$

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

$[\mathrm{ExistNegated(Imply)} \stackrel{\mathrm{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(v1)}{:}\,\forall\underline{a}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\underline{a})n)n)n \vdash \mathrm{Repetition} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\underline{a})n)n)n \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\underline{a})n)n)n; \mathrm{RemoveDoubleNeg} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\underline{a})n)n)n \gg \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\underline{a})n; \forall\underline{(v1)}{:}\,\forall\underline{a}{:}\,\mathrm{Ded} \rhd \forall\underline{(v1)}{:}\,\forall\underline{a}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\underline{a})n)n)n \vdash \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\underline{a})n \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\underline{a})n)n)n \Rightarrow \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\dot{\neg}(\underline{a})n\rceil, p_0, c)]$

$[\mathrm{AddAll} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(v1)}{:}\,\forall\underline{a}{:}\,\forall\underline{b}{:}\,\underline{a} \Rightarrow \underline{b} \vdash \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a} \Rightarrow \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{b}]$

$[\mathrm{AddAll} \stackrel{\mathrm{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(v1)}{:}\,\forall\underline{a}{:}\,\forall\underline{b}{:}\,\underline{a} \Rightarrow \underline{b} \vdash \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a} \vdash \mathrm{A4} \rhd \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a} \gg \underline{a}; \mathrm{MP} \rhd \underline{a} \Rightarrow \underline{b} \rhd \underline{a} \gg \underline{b}; \mathrm{Gen} \rhd \underline{b} \gg \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{b}; \forall\underline{(v1)}{:}\,\forall\underline{a}{:}\,\forall\underline{b}{:}\,\mathrm{Ded} \rhd \forall\underline{(v1)}{:}\,\forall\underline{a}{:}\,\forall\underline{b}{:}\,\underline{a} \Rightarrow \underline{b} \vdash \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a} \vdash \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{b} \gg \underline{a} \Rightarrow \underline{b} \Rightarrow \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a} \Rightarrow \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{b}; \underline{a} \Rightarrow \underline{b} \vdash \mathrm{MP} \rhd \underline{a} \Rightarrow \underline{b} \Rightarrow \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a} \Rightarrow \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{b} \rhd \underline{a} \Rightarrow \underline{b} \gg \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{a} \Rightarrow \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\underline{b}\rceil, p_0, c)]$

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

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

$\dot{\neg}(\forall_{obj}\underline{(v2)}\colon \dot{\neg}(\underline{d})n)n; \forall\underline{y}\colon\forall\underline{(v1)}\colon\forall\underline{(v2)}\colon\forall\underline{a}\colon\forall\underline{b}\colon\forall\underline{c}\colon\forall\underline{d}\colon \mathrm{Ded} \rhd$
$\forall\underline{y}\colon\forall\underline{(v1)}\colon\forall\underline{(v2)}\colon\forall\underline{a}\colon\forall\underline{b}\colon\forall\underline{c}\colon\forall\underline{d}\colon \langle\dot{\neg}(\underline{b})n\equiv\dot{\neg}(\underline{d})n|\underline{(v2)}{:=}{=}\underline{y}\rangle_{Me} \Vdash \underline{a}\Rightarrow\underline{b}\vdash\underline{c}\Rightarrow\underline{a}\vdash$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n \vdash \forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n \vdash \dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n \gg$
$\langle\dot{\neg}(\underline{b})n\equiv\dot{\neg}(\underline{d})n|\underline{(v2)}{:=}{=}\underline{y}\rangle_{Me}\Vdash\underline{a}\Rightarrow\underline{b}\Rightarrow\underline{c}\Rightarrow\underline{a}\Rightarrow\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n\Rightarrow$
$\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n\Rightarrow\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{AddExist(Helper2)} \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash$
$\forall\underline{y}\colon\forall\underline{(v1)}\colon\forall\underline{(v2)}\colon\forall\underline{a}\colon\forall\underline{b}\colon\forall\underline{c}\colon\forall\underline{d}\colon\langle\dot{\neg}(\underline{b})n\equiv\dot{\neg}(\underline{d})n|\underline{(v2)}{:=}{=}\underline{y}\rangle_{Me}\Vdash\underline{a}\Rightarrow\underline{b}\vdash\underline{c}\Rightarrow\underline{a}\vdash$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n\vdash \mathrm{AddExist(Helper1)} \unrhd \langle\dot{\neg}(\underline{b})n\equiv\dot{\neg}(\underline{d})n|\underline{(v2)}{:=}{=}\underline{y}\rangle_{Me}\gg$
$\underline{a}\Rightarrow\underline{b}\Rightarrow\underline{c}\Rightarrow\underline{a}\Rightarrow\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n\Rightarrow\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n\Rightarrow$
$\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n; \mathrm{MP3}\rhd\underline{a}\Rightarrow\underline{b}\Rightarrow\underline{c}\Rightarrow\underline{a}\Rightarrow\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n\Rightarrow$
$\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n\Rightarrow\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n\rhd\underline{a}\Rightarrow\underline{b}\rhd\underline{c}\Rightarrow$
$\underline{a}\rhd\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n\gg\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n\Rightarrow$
$\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n; \mathrm{prop\ lemma\ imply\ negation}\rhd\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n\Rightarrow$
$\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n\gg$
$\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n; \mathrm{Repetition}\rhd\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n\gg$
$\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n; \forall\underline{y}\colon\forall\underline{(v1)}\colon\forall\underline{(v2)}\colon\forall\underline{a}\colon\forall\underline{b}\colon\forall\underline{c}\colon\forall\underline{d}\colon\mathrm{Ded}\rhd$
$\forall\underline{y}\colon\forall\underline{(v1)}\colon\forall\underline{(v2)}\colon\forall\underline{a}\colon\forall\underline{b}\colon\forall\underline{c}\colon\forall\underline{d}\colon\langle\dot{\neg}(\underline{b})n\equiv\dot{\neg}(\underline{d})n|\underline{(v2)}{:=}{=}\underline{y}\rangle_{Me}\Vdash\underline{a}\Rightarrow\underline{b}\vdash\underline{c}\Rightarrow\underline{a}\vdash$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n\vdash\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n\gg\langle\dot{\neg}(\underline{b})n\equiv\dot{\neg}(\underline{d})n|\underline{(v2)}{:=}{=}\underline{y}\rangle_{Me}\Vdash$
$\underline{a}\Rightarrow\underline{b}\Rightarrow\underline{c}\Rightarrow\underline{a}\Rightarrow\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n\Rightarrow\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{AddExist} \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash$
$\forall\underline{y}\colon\forall\underline{(v1)}\colon\forall\underline{(v2)}\colon\forall\underline{a}\colon\forall\underline{b}\colon\forall\underline{c}\colon\forall\underline{d}\colon\langle\dot{\neg}(\underline{b})n\equiv\dot{\neg}(\underline{d})n|\underline{(v2)}{:=}{=}\underline{y}\rangle_{Me}\Vdash\underline{a}\Rightarrow\underline{b}\vdash\underline{c}\Rightarrow\underline{a}\vdash$
$\mathrm{AddExist(Helper2)}\unrhd\langle\dot{\neg}(\underline{b})n\equiv\dot{\neg}(\underline{d})n|\underline{(v2)}{:=}{=}\underline{y}\rangle_{Me}\gg\underline{a}\Rightarrow\underline{b}\Rightarrow\underline{c}\Rightarrow\underline{a}\Rightarrow$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n\Rightarrow\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n; \mathrm{MP2}\rhd\underline{a}\Rightarrow\underline{b}\Rightarrow\underline{c}\Rightarrow\underline{a}\Rightarrow$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n\Rightarrow\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n\rhd\underline{a}\Rightarrow\underline{b}\rhd\underline{c}\Rightarrow\underline{a}\gg$
$\dot{\neg}(\forall_{obj}\underline{(v1)}\colon\dot{\neg}(\underline{c})n)n\Rightarrow\dot{\neg}(\forall_{obj}\underline{(v2)}\colon\dot{\neg}(\underline{d})n)n\rceil, p_0, \mathsf{c})]$

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

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

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

$[\mathrm{AddExist(Simple)} \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ}\vdash\forall\underline{(v1)}\colon\forall\underline{(v2)}\colon\forall\underline{a}\colon\forall\underline{b}\colon\underline{a}\Rightarrow\underline{b}\vdash$
$\mathrm{AutoImply}\gg\underline{a}\Rightarrow\underline{a}; \mathrm{AddExist}\,@\,\underline{(v2)}\rhd\underline{a}\Rightarrow\underline{b}\rhd\underline{a}\Rightarrow\underline{a}\gg$

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

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

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

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

$[\mathrm{AddEAE} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall(v1){:}\,\forall(v2){:}\,\forall(v3){:}\,\forall\underline{\mathsf{a}}{:}\,\forall\underline{\mathsf{b}}{:}\,\underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \vdash$
$\mathrm{AddExist(Simple)} \rhd \underline{\mathsf{a}} \Rightarrow \underline{\mathsf{b}} \gg \dot\neg\,(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg\,(\underline{\mathsf{a}})n)n \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg\,(\underline{\mathsf{b}})n)n; \mathrm{AddAll} \rhd \dot\neg\,(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg\,(\underline{\mathsf{a}})n)n \Rightarrow \dot\neg\,(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg\,(\underline{\mathsf{b}})n)n \gg$
$\forall_{\mathrm{obj}}(v2){:}\,\dot\neg\,(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg\,(\underline{\mathsf{a}})n)n \Rightarrow$
$\forall_{\mathrm{obj}}(v2){:}\,\dot\neg\,(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg\,(\underline{\mathsf{b}})n)n; \mathrm{AddExist(Simple)} \rhd$
$\forall_{\mathrm{obj}}(v2){:}\,\dot\neg\,(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg\,(\underline{\mathsf{a}})n)n \Rightarrow \forall_{\mathrm{obj}}(v2){:}\,\dot\neg\,(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg\,(\underline{\mathsf{b}})n)n \gg$
$\dot\neg\,(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg\,(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg\,(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg\,(\underline{\mathsf{a}})n)n)n)n \Rightarrow$
$\dot\neg\,(\forall_{\mathrm{obj}}(v1){:}\,\dot\neg\,(\forall_{\mathrm{obj}}(v2){:}\,\dot\neg\,(\forall_{\mathrm{obj}}(v3){:}\,\dot\neg\,(\underline{\mathsf{b}})n)n)n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{FromNotSameF(Weak)(Helper)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{x}}{:}\,\forall\underline{\mathsf{y}}{:}\,\forall\underline{\mathsf{z}}{:}\,\dot\neg\,(\dot\neg\,(|(\underline{\mathsf{x}} + (-u\underline{\mathsf{y}}))| <= \underline{\mathsf{z}} \Rightarrow \dot\neg\,(\dot\neg\,(|(\underline{\mathsf{x}} + (-u\underline{\mathsf{y}}))| = \underline{\mathsf{z}})n)n)n)n \vdash$

$\dot{\neg}(\underline{x} <= (\underline{y} + (-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x} + (-u\underline{z}))]$

[FromNotSameF(Weak)(Helper) $\stackrel{\text{proof}}{\to}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{z} <= |(\underline{x}+(-u\underline{y}))| \vdash 0 <= (\underline{x}+(-u\underline{y})) \vdash$ NonnegativeNumerical $\rhd 0 <= (\underline{x}+(-u\underline{y})) \gg |(\underline{x}+(-u\underline{y}))| = (\underline{x}+(-u\underline{y}))$; subLeqRight $\rhd |(\underline{x}+(-u\underline{y}))| = (\underline{x}+(-u\underline{y})) \rhd \underline{z} <= |(\underline{x}+(-u\underline{y}))| \gg \underline{z} <= (\underline{x}+(-u\underline{y}))$; negativeToLeft(Leq) $\rhd \underline{z} <= (\underline{x}+(-u\underline{y})) \gg (\underline{z}+\underline{y}) <= \underline{x}$; plusCommutativity $\gg (\underline{z}+\underline{y}) = (\underline{y}+\underline{z})$; subLeqLeft $\rhd (\underline{z}+\underline{y}) = (\underline{y}+\underline{z}) \rhd (\underline{z}+\underline{y}) <= \underline{x} \gg (\underline{y}+\underline{z}) <= \underline{x}$; PositiveToRight(Leq) $\rhd (\underline{y}+\underline{z}) <= \underline{x} \gg \underline{y} <= (\underline{x}+(-u\underline{z}))$; WeakenOr1 $\rhd \underline{y} <= (\underline{x}+(-u\underline{z})) \gg \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z}))$; $\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{z} <= |(\underline{x}+(-u\underline{y}))| \vdash \dot{\neg}(0 <= (\underline{x}+(-u\underline{y})))n \vdash$ ToLess $\rhd \dot{\neg}(0 <= (\underline{x}+(-u\underline{y})))n \gg \dot{\neg}((\underline{x}+(-u\underline{y})) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = 0)n)n)n$; NegativeNumerical $\gg |(\underline{x}+(-u\underline{y}))| = (-u(\underline{x}+(-u\underline{y})))$; MinusNegated $\gg (-u(\underline{x}+(-u\underline{y}))) = (\underline{y}+(-u\underline{x}))$; eqTransitivity $\rhd |(\underline{x}+(-u\underline{y}))| = (-u(\underline{x}+(-u\underline{y}))) \rhd (-u(\underline{x}+(-u\underline{y}))) = (\underline{y}+(-u\underline{x})) \gg |(\underline{x}+(-u\underline{y}))| = (\underline{y}+(-u\underline{x}))$; subLeqRight $\rhd |(\underline{x}+(-u\underline{y}))| = (\underline{y}+(-u\underline{x})) \rhd \underline{z} <= |(\underline{x}+(-u\underline{y}))| \gg \underline{z} <= (\underline{y}+(-u\underline{x}))$; negativeToLeft(Leq) $\rhd \underline{z} <= (\underline{y}+(-u\underline{x})) \gg (\underline{z}+\underline{x}) <= \underline{y}$; plusCommutativity $\gg (\underline{z}+\underline{x}) = (\underline{x}+\underline{z})$; subLeqLeft $\rhd (\underline{z}+\underline{x}) = (\underline{x}+\underline{z}) \rhd (\underline{z}+\underline{x}) <= \underline{y} \gg (\underline{x}+\underline{z}) <= \underline{y}$; PositiveToRight(Leq) $\rhd (\underline{x}+\underline{z}) <= \underline{y} \gg \underline{x} <= (\underline{y}+(-u\underline{z}))$; WeakenOr2 $\rhd \underline{x} <= (\underline{y}+(-u\underline{z})) \gg \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z}))$; $\forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon$ Ded $\rhd \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{z} <= |(\underline{x}+(-u\underline{y}))| \vdash 0 <= (\underline{x}+(-u\underline{y})) \vdash \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z})) \gg \underline{z} <= |(\underline{x}+(-u\underline{y}))| \Rightarrow 0 <= (\underline{x}+(-u\underline{y})) \Rightarrow \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z}))$; Ded $\rhd \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \underline{z} <= |(\underline{x}+(-u\underline{y}))| \vdash \dot{\neg}(0 <= (\underline{x}+(-u\underline{y})))n \vdash \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z})) \gg \underline{z} <= |(\underline{x}+(-u\underline{y}))| \Rightarrow \dot{\neg}(0 <= (\underline{x}+(-u\underline{y})))n \Rightarrow \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z}))$; $\dot{\neg}(\dot{\neg}(|(\underline{x}+(-u\underline{y}))| <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x}+(-u\underline{y}))| = \underline{z})n)n)n)n \vdash$ fromNotLess $\rhd \dot{\neg}(\dot{\neg}(|(\underline{x}+(-u\underline{y}))| <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{x}+(-u\underline{y}))| = \underline{z})n)n)n)n \gg \underline{z} <= |(\underline{x}+(-u\underline{y}))|$; MP $\rhd \underline{z} <= |(\underline{x}+(-u\underline{y}))| \Rightarrow 0 <= (\underline{x}+(-u\underline{y})) \Rightarrow \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z})) \rhd \underline{z} <= |(\underline{x}+(-u\underline{y}))| \gg 0 <= (\underline{x}+(-u\underline{y})) \Rightarrow \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z}))$; MP $\rhd \underline{z} <= |(\underline{x}+(-u\underline{y}))| \Rightarrow \dot{\neg}(0 <= (\underline{x}+(-u\underline{y})))n \Rightarrow \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z})) \rhd \underline{z} <= |(\underline{x}+(-u\underline{y}))| \gg \dot{\neg}(0 <= (\underline{x}+(-u\underline{y})))n \Rightarrow \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z}))$; FromNegations $\rhd 0 <= (\underline{x}+(-u\underline{y})) \Rightarrow \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z})) \rhd \dot{\neg}(0 <= (\underline{x}+(-u\underline{y})))n \Rightarrow \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z})) \gg \dot{\neg}(\underline{x} <= (\underline{y}+(-u\underline{z})))n \Rightarrow \underline{y} <= (\underline{x}+(-u\underline{z}))\rceil, p_0, c)]$

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

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

$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \vdash$
$\mathrm{Repetition} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|((\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n)n; \mathrm{Ded} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})n)n)n)n)n)n; \mathrm{AEA-negated} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})n)n)n)n)n)n \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})n)n)n)n)n)n)n)n; \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})n)n)n)n \vdash$
$\mathrm{FromNegated}(2 * \mathrm{Imply}) \rhd \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})n)n)n)n \gg \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})n)n)n)n)n)n; \mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})n)n)n)n)n)n \gg \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})n)n; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})n)n)n)n)n)n \gg$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})n)n)n)n; \mathrm{FromNotSameF(Weak)(Helper)} \rhd \dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]+(-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})n)n)n)n \gg \dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] +$
$(-\mathrm{u}\underline{(\epsilon)})))n \Rightarrow \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] <= ((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})); \mathrm{JoinConjuncts} \rhd \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})n)n \rhd \dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))n \Rightarrow$
$\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] <= ((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) \gg \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})n)n \Rightarrow \dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))n \Rightarrow \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] <=$
$((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))n)n; \mathrm{Ded} \rhd \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})n)n)n)n \vdash \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})n)n \Rightarrow \dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))n \Rightarrow$
$\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] <= ((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))n)n \gg \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})n)n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}})n)n \Rightarrow \dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))n \Rightarrow$

$(fy)[\underline{m}] <= ((fx)[\underline{m}] + (-u(\epsilon))))n)n; \mathrm{AddEAE} \rhd \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow \dot{\neg}(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| = (\epsilon))n)n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m})n)n \Rightarrow \dot{\neg}(\dot{\neg}((fx)[\underline{m}] <= ((fy)[\underline{m}] + (-u(\epsilon))))n \Rightarrow$
$(fy)[\underline{m}] <= ((fx)[\underline{m}] + (-u(\epsilon))))n)n \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}(\epsilon){:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{n}{:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \underline{n} <=$
$\underline{m} \Rightarrow \dot{\neg}(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| =$
$(\epsilon))n)n)n)n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\epsilon){:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{n}{:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m})n)n \Rightarrow \dot{\neg}(\dot{\neg}((fx)[\underline{m}] <=$
$((fy)[\underline{m}] + (-u(\epsilon))))n \Rightarrow (fy)[\underline{m}] <= ((fx)[\underline{m}] + (-u(\epsilon))))n)n)n)n)n)n; \mathrm{MP} \rhd$
$\dot{\neg}(\forall_{\mathrm{obj}}(\epsilon){:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{n}{:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \underline{n} <=$
$\underline{m} \Rightarrow \dot{\neg}(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| =$
$(\epsilon))n)n)n)n)n)n)n)n \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}(\epsilon){:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{n}{:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m})n)n \Rightarrow \dot{\neg}(\dot{\neg}((fx)[\underline{m}] <=$
$((fy)[\underline{m}] + (-u(\epsilon))))n \Rightarrow (fy)[\underline{m}] <= ((fx)[\underline{m}] + (-u(\epsilon))))n)n)n)n)n)n \rhd$
$\dot{\neg}(\forall_{\mathrm{obj}}(\epsilon){:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{n}{:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \underline{n} <=$
$\underline{m} \Rightarrow \dot{\neg}(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| =$
$(\epsilon))n)n)n)n)n)n)n)n \gg \dot{\neg}(\forall_{\mathrm{obj}}(\epsilon){:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{n}{:}\ \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}{:}\ \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m})n)n \Rightarrow \dot{\neg}(\dot{\neg}((fx)[\underline{m}] <=$
$((fy)[\underline{m}] + (-u(\epsilon))))n \Rightarrow (fy)[\underline{m}] <= ((fx)[\underline{m}] + (-u(\epsilon))))n)n)n)n)n)n\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{FromMax}(1) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}{:}\ \forall\underline{y}{:}\ \underline{y} <= \underline{x} \vdash \mathrm{Max} \gg \dot{\neg}(\dot{\neg}(\underline{y} <=$
$\underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) =$
$\underline{y})n)n; \mathrm{AddDoubleNeg} \rhd \underline{y} <= \underline{x} \gg \dot{\neg}(\dot{\neg}(\underline{y} <=$
$\underline{x})n)n; \mathrm{ToNegatedAnd}(1) \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})n)n \gg \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <=$
$\underline{x}, \underline{x}, \underline{y}) = \underline{y})n)n)n; \mathrm{NegateDisjunct2} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) =$
$\underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y})n)n \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})n \Rightarrow$
$\dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y})n)n)n \gg \dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) =$
$\underline{x})n)n; \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x})n)n \gg \mathrm{if}(\underline{y} <=$
$\underline{x}, \underline{x}, \underline{y}) = \underline{x}\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{FromMax}(2) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}{:}\ \forall\underline{y}{:}\ \dot{\neg}(\underline{y} <= \underline{x})n \vdash \mathrm{Max} \gg$
$\dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <=$
$\underline{x}, \underline{x}, \underline{y}) = \underline{y})n)n; \mathrm{ToNegatedAnd}(1) \rhd \dot{\neg}(\underline{y} <= \underline{x})n \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <=$
$\underline{x}, \underline{x}, \underline{y}) = \underline{x})n)n)n; \mathrm{NegateDisjunct1} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) =$
$\underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y})n)n \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x} \Rightarrow$
$\dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x})n)n)n \gg \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) =$
$\underline{y})n)n; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(\underline{y} <= \underline{x})n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y})n)n \gg$
$\mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{y}\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{MaxLeq}(1) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}{:}\ \forall\underline{y}{:}\ \underline{y} <= \underline{x} \vdash \mathrm{FromMax}(1) \rhd \underline{y} <=$
$\underline{x} \gg \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x}; \mathrm{eqSymmetry} \rhd \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) = \underline{x} \gg \underline{x} = \mathrm{if}(\underline{y} <=$
$\underline{x}, \underline{x}, \underline{y}); \mathrm{eqLeq} \rhd \underline{x} = \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}); \forall\underline{x}{:}\ \forall\underline{y}{:}\ \dot{\neg}(\underline{y} <=$

$\underline{x})n \vdash \mathrm{FromMax}(2) \rhd \dot{\neg}(\underline{y} <= \underline{x})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})n \gg \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n; \mathrm{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}; \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})n \vdash \underline{x} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \dot{\neg}(\underline{y} <= \underline{x})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})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, p_0, \mathsf{c})]$

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

$[\mathrm{MaxLeq}(2) \stackrel{\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})n \vdash \mathrm{FromMax}(2) \rhd \dot{\neg}(\underline{y} <= \underline{x})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})n \vdash \underline{y} <= \mathrm{if}(\underline{y} <= \underline{x}, \underline{x}, \underline{y}) \gg \dot{\neg}(\underline{y} <= \underline{x})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})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, p_0, \mathsf{c})]$

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

$[\mathrm{lemma\ negativeToRight(Leq)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon (\underline{x} + (-u\underline{y})) <= \underline{z} \vdash \mathrm{leqAddition} \rhd (\underline{x} + (-u\underline{y})) <= \underline{z} \gg ((\underline{x} + (-u\underline{y})) + \underline{y}) <= (\underline{z} + \underline{y}); \mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y} \gg \underline{x} = ((\underline{x} + \underline{y}) + (-u\underline{y})); \mathrm{Three2threeTerms} \gg ((\underline{x} + \underline{y}) + (-u\underline{y})) = ((\underline{x} + (-u\underline{y})) + \underline{y}); \mathrm{eqTransitivity} \rhd \underline{x} = ((\underline{x} + \underline{y}) + (-u\underline{y})) \rhd ((\underline{x} + \underline{y}) + (-u\underline{y})) = ((\underline{x} + (-u\underline{y})) + \underline{y}) \gg \underline{x} = ((\underline{x} + (-u\underline{y})) + \underline{y}); \mathrm{eqSymmetry} \rhd \underline{x} = ((\underline{x} + (-u\underline{y})) + \underline{y}) \gg ((\underline{x} + (-u\underline{y})) + \underline{y}) = \underline{x}; \mathrm{subLeqLeft} \rhd ((\underline{x} + (-u\underline{y})) + \underline{y}) = \underline{x} \rhd ((\underline{x} + (-u\underline{y})) + \underline{y}) <= (\underline{z} + \underline{y}) \gg \underline{x} <= (\underline{z} + \underline{y})\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{LessThanMax} \stackrel{\mathrm{proof}}{\rightarrow} \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}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{a} \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{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}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Ded} \rhd \forall \underline{a}\colon \forall \underline{x}\colon \forall \underline{y}\colon \forall \underline{z}\colon \dot{\neg}(\underline{a})\mathrm{n} \Rightarrow \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\underline{a})\mathrm{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}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{a})\mathrm{n} \Rightarrow \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{a})\mathrm{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}))\mathrm{n})\mathrm{n})\mathrm{n}; \underline{a} \Rightarrow \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{a})\mathrm{n} \Rightarrow \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{MP} \rhd \underline{a} \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{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}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \underline{a} \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})\mathrm{n})\mathrm{n})\mathrm{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}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MP} \rhd \dot{\neg}(\underline{a})\mathrm{n} \Rightarrow \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{a})\mathrm{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}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\underline{a})\mathrm{n} \Rightarrow \dot{\neg}(\underline{x} <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{z})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{a})\mathrm{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}))\mathrm{n})\mathrm{n})\mathrm{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}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\underline{a})\mathrm{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}))\mathrm{n})\mathrm{n})\mathrm{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}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

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

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

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

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

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

$[\mathrm{PlusTimesMinus} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \mathrm{Times}(-1)\mathrm{Left} \gg ((-\mathrm{u}1) * \underline{y}) = (-\mathrm{u}\underline{y}); \mathrm{lemma\ eqMultiplicationLeft} \rhd ((-\mathrm{u}1) * \underline{y}) = (-\mathrm{u}\underline{y}) \gg (\underline{x} * ((-\mathrm{u}1) * \underline{y})) = (\underline{x} * (-\mathrm{u}\underline{y})); \mathrm{timesAssociativity} \gg ((\underline{x} * (-\mathrm{u}1)) * \underline{y}) = (\underline{x} * ((-\mathrm{u}1) * \underline{y})); \mathrm{timesCommutativity} \gg (\underline{x} * (-\mathrm{u}1)) = ((-\mathrm{u}1) * \underline{x}); \mathrm{eqMultiplication} \rhd (\underline{x} * (-\mathrm{u}1)) = ((-\mathrm{u}1) * \underline{x}) \gg ((\underline{x} * (-\mathrm{u}1)) * \underline{y}) =$

$(((-u1)*\underline{x})*\underline{y});$ timesAssociativity $\gg (((-u1)*\underline{x})*\underline{y}) = ((-u1)*(\underline{x}*\underline{y}));$ Times(-1)Left $\gg ((-u1)*(\underline{x}*\underline{y})) = (-u(\underline{x}*\underline{y}));$ eqTransitivity4 $\rhd ((\underline{x}*(-u1))*\underline{y}) = (((-u1)*\underline{x})*\underline{y}) \rhd (((-u1)*\underline{x})*\underline{y}) = ((-u1)*(\underline{x}*\underline{y})) \rhd ((-u1)*(\underline{x}*\underline{y})) = (-u(\underline{x}*\underline{y})) \gg ((\underline{x}*(-u1))*\underline{y}) = (-u(\underline{x}*\underline{y}));$ Equality $\rhd ((\underline{x}*(-u1))*\underline{y}) = (-u(\underline{x}*\underline{y})) \rhd ((\underline{x}*(-u1))*\underline{y}) = (\underline{x}*((-u1)*\underline{y})) \gg (-u(\underline{x}*\underline{y})) = (\underline{x}*((-u1)*\underline{y}));$ eqTransitivity $\rhd (-u(\underline{x}*\underline{y})) = (\underline{x}*((-u1)*\underline{y})) \rhd (\underline{x}*((-u1)*\underline{y})) = (\underline{x}*(-u\underline{y})) \gg (-u(\underline{x}*\underline{y})) = (\underline{x}*(-u\underline{y}));$ eqSymmetry $\rhd (-u(\underline{x}*\underline{y})) = (\underline{x}*(-u\underline{y})) \gg (\underline{x}*(-u\underline{y})) = (-u(\underline{x}*\underline{y}))\rceil, p_0, \mathsf{c})]$

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

[SplitNumericalProduct$(++) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon 0 <= \underline{x} \vdash 0 <= \underline{y} \vdash$ NonnegativeFactors $\rhd 0 <= \underline{x} \rhd 0 <= \underline{y} \gg 0 <= (\underline{x}*\underline{y});$ NonnegativeNumerical $\rhd 0 <= (\underline{x}*\underline{y}) \gg |(\underline{x}*\underline{y})| = (\underline{x}*\underline{y});$ NonnegativeNumerical $\rhd 0 <= \underline{x} \gg |\underline{x}| = \underline{x};$ NonnegativeNumerical $\rhd 0 <= \underline{y} \gg |\underline{y}| = \underline{y};$ MultiplyEquations $\rhd |\underline{x}| = \underline{x} \rhd |\underline{y}| = \underline{y} \gg (|\underline{x}|*|\underline{y}|) = (\underline{x}*\underline{y});$ eqSymmetry $\rhd (|\underline{x}|*|\underline{y}|) = (\underline{x}*\underline{y}) \gg (\underline{x}*\underline{y}) = (|\underline{x}|*|\underline{y}|);$ eqTransitivity $\rhd |(\underline{x}*\underline{y})| = (\underline{x}*\underline{y}) \rhd (\underline{x}*\underline{y}) = (|\underline{x}|*|\underline{y}|) \gg |(\underline{x}*\underline{y})| = (|\underline{x}|*|\underline{y}|)\rceil, p_0, \mathsf{c})]$

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

[SplitNumericalProduct$(+-) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash$ SignNumerical $\gg |(\underline{x}*\underline{y})| = |(-u(\underline{x}*\underline{y}))|;$ eqSymmetry $\rhd |(\underline{x}*\underline{y})| = |(-u(\underline{x}*\underline{y}))| \gg |(-u(\underline{x}*\underline{y}))| = |(\underline{x}*\underline{y})|;$ PlusTimesMinus $\gg (\underline{x}*(-u\underline{y})) = (-u(\underline{x}*\underline{y}));$ SameNumerical $\rhd (\underline{x}*(-u\underline{y})) = (-u(\underline{x}*\underline{y})) \gg |(\underline{x}*(-u\underline{y}))| = |(-u(\underline{x}*\underline{y}))|;$ eqTransitivity $\rhd |(\underline{x}*(-u\underline{y}))| = |(-u(\underline{x}*\underline{y}))| \rhd |(-u(\underline{x}*\underline{y}))| = |(\underline{x}*\underline{y})| \gg |(\underline{x}*(-u\underline{y}))| = |(\underline{x}*\underline{y})|;$ SignNumerical $\gg |\underline{y}| = |(-u\underline{y})|;$ eqSymmetry $\rhd |\underline{y}| = |(-u\underline{y})| \gg |(-u\underline{y})| = |\underline{y}|;$ lemma eqMultiplicationLeft $\rhd |(-u\underline{y})| = |\underline{y}| \gg (|\underline{x}|*|(-u\underline{y})|) = (|\underline{x}|*|\underline{y}|);$ NonpositiveNegated $\rhd \underline{y} <= 0 \gg 0 <= (-u\underline{y});$ SplitNumericalProduct$(++) \rhd 0 <= \underline{x} \rhd 0 <= (-u\underline{y}) \gg |(\underline{x}*(-u\underline{y}))| = (|\underline{x}|*|(-u\underline{y})|);$ eqTransitivity $\rhd |(\underline{x}*(-u\underline{y}))| = (|\underline{x}|*|(-u\underline{y})|) \rhd (|\underline{x}|*|(-u\underline{y})|) = (|\underline{x}|*|\underline{y}|) \gg |(\underline{x}*(-u\underline{y}))| = (|\underline{x}|*|\underline{y}|);$ Equality $\rhd |(\underline{x}*(-u\underline{y}))| = |(\underline{x}*\underline{y})| \rhd |(\underline{x}*(-u\underline{y}))| = (|\underline{x}|*|\underline{y}|) \gg |(\underline{x}*\underline{y})| = (|\underline{x}|*|\underline{y}|)\rceil, p_0, \mathsf{c})]$

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

[SplitNumericalProduct $\overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon \forall\underline{y}\colon 0 <= \underline{x} \vdash 0 <= \underline{y} \vdash$ SplitNumericalProduct$(++) \rhd 0 <= \underline{x} \rhd 0 <= \underline{y} \gg |(\underline{x}*\underline{y})| = (|\underline{x}|*|\underline{y}|); \forall\underline{x}\colon \forall\underline{y}\colon 0 <= \underline{x} \vdash \underline{y} <= 0 \vdash$ SplitNumericalProduct$(+-) \rhd 0 <= \underline{x} \rhd \underline{y} <= 0 \gg |(\underline{x}*\underline{y})| = (|\underline{x}|*|\underline{y}|); \forall\underline{x}\colon \forall\underline{y}\colon \underline{x} <= 0 \vdash 0 <= \underline{y} \vdash$ SplitNumericalProduct$(+-) \rhd 0 <= \underline{y} \rhd \underline{x} <= 0 \gg |(\underline{y}*\underline{x})| = (|\underline{y}|*|\underline{x}|);$ timesCommutativity $\gg (\underline{x}*\underline{y}) = (\underline{y}*\underline{x});$ SameNumerical $\rhd (\underline{x}*\underline{y}) = (\underline{y}*\underline{x}) \gg |(\underline{x}*\underline{y})| = |(\underline{y}*\underline{x})|;$ timesCommutativity $\gg (|\underline{y}|*|\underline{x}|) = (|\underline{x}|*|\underline{y}|);$ eqTransitivity4 $\rhd |(\underline{x}*\underline{y})| = |(\underline{y}*\underline{x})| \rhd |(\underline{y}*\underline{x})| = (|\underline{y}|*|\underline{x}|) \rhd (|\underline{y}|*|\underline{x}|) = (|\underline{x}|*|\underline{y}|) \gg |(\underline{x}*\underline{y})| = (|\underline{x}|*|\underline{y}|); \forall\underline{x}\colon \forall\underline{y}\colon \underline{x} <= 0 \vdash \underline{y} <= 0 \vdash$ NonpositiveNegated $\rhd \underline{x} <= 0 \gg 0 <= (-u\underline{x});$ NonpositiveNegated $\rhd \underline{y} <=$

$0 \gg 0 <= (-\mathrm{u}\underline{y}); \mathrm{SplitNumericalProduct}(++) \rhd 0 <= (-\mathrm{u}\underline{x}) \rhd 0 <= (-\mathrm{u}\underline{y}) \gg |((-\mathrm{u}\underline{x}) * (-\mathrm{u}\underline{y}))| = (|(-\mathrm{u}\underline{x})| * |(-\mathrm{u}\underline{y})|); \mathrm{MinusTimesMinus} \gg ((-\mathrm{u}\underline{x}) * (-\mathrm{u}\underline{y})) = (\underline{x} * \underline{y}); \mathrm{SameNumerical} \rhd ((-\mathrm{u}\underline{x}) * (-\mathrm{u}\underline{y})) = (\underline{x} * \underline{y}) \gg |((-\mathrm{u}\underline{x}) * (-\mathrm{u}\underline{y}))| = |(\underline{x} * \underline{y})|; \mathrm{eqSymmetry} \rhd |((-\mathrm{u}\underline{x}) * (-\mathrm{u}\underline{y}))| = |(\underline{x} * \underline{y})| \gg |(\underline{x} * \underline{y})| = |((-\mathrm{u}\underline{x}) * (-\mathrm{u}\underline{y}))|; \mathrm{SignNumerical} \gg |\underline{x}| = |(-\mathrm{u}\underline{x})|; \mathrm{SignNumerical} \gg |\underline{y}| = |(-\mathrm{u}\underline{y})|; \mathrm{MultiplyEquations} \rhd |\underline{x}| = |(-\mathrm{u}\underline{x})| \rhd |\underline{y}| = |(-\mathrm{u}\underline{y})| \gg (|\underline{x}| * |\underline{y}|) = (|(-\mathrm{u}\underline{x})| * |(-\mathrm{u}\underline{y})|); \mathrm{eqSymmetry} \rhd (|\underline{x}| * |\underline{y}|) = (|(-\mathrm{u}\underline{x})| * |(-\mathrm{u}\underline{y})|) \gg (|(-\mathrm{u}\underline{x})| * |(-\mathrm{u}\underline{y})|) = (|\underline{x}| * |\underline{y}|); \mathrm{eqTransitivity4} \rhd |(\underline{x} * \underline{y})| = |((-\mathrm{u}\underline{x}) * (-\mathrm{u}\underline{y}))| \rhd |((-\mathrm{u}\underline{x}) * (-\mathrm{u}\underline{y}))| = (|(-\mathrm{u}\underline{x})| * |(-\mathrm{u}\underline{y})|) \rhd (|(-\mathrm{u}\underline{x})| * |(-\mathrm{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})]$

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

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

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

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

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

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

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

$[\mathrm{PositiveFactors} \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}(0 <= \underline{\mathsf{x}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{x}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <= \underline{\mathsf{y}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{y}})\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{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{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}; \mathrm{Repetition} \rhd \dot{\neg}(0 <= \underline{\mathsf{y}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= \underline{\mathsf{y}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(0 <= \underline{\mathsf{y}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{\mathsf{y}}; \mathrm{SecondConjunct} \rhd \dot{\neg}(0 <= \underline{\mathsf{y}} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{\mathsf{y}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 = \underline{\mathsf{y}})\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot{\neg}(0 = \underline{\mathsf{y}})\mathrm{n} \gg \dot{\neg}(\underline{\mathsf{y}} = 0)\mathrm{n}; \mathrm{NonnegativeFactors} \rhd 0 <= \underline{\mathsf{x}} \rhd 0 <= \underline{\mathsf{y}} \gg 0 <= (\underline{\mathsf{x}} * \underline{\mathsf{y}}); \mathrm{NonzeroFactors} \rhd \dot{\neg}(\underline{\mathsf{x}} = 0)\mathrm{n} \rhd \dot{\neg}(\underline{\mathsf{y}} = 0)\mathrm{n} \gg \dot{\neg}((\underline{\mathsf{x}} * \underline{\mathsf{y}}) = 0)\mathrm{n}; \mathrm{NeqSymmetry} \rhd \dot{\neg}((\underline{\mathsf{x}} * \underline{\mathsf{y}}) = 0)\mathrm{n} \gg \dot{\neg}(0 = (\underline{\mathsf{x}} * \underline{\mathsf{y}}))\mathrm{n}; \mathrm{JoinConjuncts} \rhd 0 <= (\underline{\mathsf{x}} * \underline{\mathsf{y}}) \rhd \dot{\neg}(0 = (\underline{\mathsf{x}} * \underline{\mathsf{y}}))\mathrm{n} \gg \dot{\neg}(0 <= (\underline{\mathsf{x}} * \underline{\mathsf{y}}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{\mathsf{x}} * \underline{\mathsf{y}}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd \dot{\neg}(0 <= (\underline{\mathsf{x}} * \underline{\mathsf{y}}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{\mathsf{x}} * \underline{\mathsf{y}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= (\underline{\mathsf{x}} * \underline{\mathsf{y}}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{\mathsf{x}} * \underline{\mathsf{y}}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SeriesSubsetCP} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{sy})}\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 \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} \vdash \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}\}]$

$[\mathrm{SeriesSubsetCP} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{sy})}\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 \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} \vdash \overline{(\mathrm{s1})} \in \underline{(\mathrm{fx})} \vdash \mathrm{FromSeries} \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})\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})\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$

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

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

$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \Rightarrow \forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \{ph \in P(P(Union(\{N,\underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}; \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in$
$\underline{(sy)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \vdash MP \rhd \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \Rightarrow \forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \{ph \in P(P(Union(\{N,\underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \rhd \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\underline{(fx)} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in$
$\underline{(sy)})n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \{ph \in P(P(Union(\{N,\underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}; Repetition \rhd$
$\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in \underline{(fx)} \Rightarrow \overline{(s1)} \in \{ph \in P(P(Union(\{N,\underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \gg \forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in$
$\underline{(fx)} \Rightarrow \overline{(s1)} \in \{ph \in P(P(Union(\{N,\underline{(sy)}\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy)})n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\rceil, p_0, \mathsf{c})]$
$[FromCartProd \overset{stmt}{\rightarrow} SystemQ \vdash$
$\forall\underline{(sx)}\colon \forall\underline{(sx1)}\colon \forall\underline{(sy)}\colon \forall\underline{(sy1)}\colon \{\{\underline{(sx)},\underline{(sx)}\},\{\underline{(sx)},\underline{(sy)}\}\} \in \{ph \in$
$P(P(Union(\{\underline{(sx1)},\underline{(sy1)}\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$\underline{(sx1)} \Rightarrow \dot{\neg}(\overline{(op2)} \in \underline{(sy1)})n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$

$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \dot{\neg}(\underline{(\mathrm{sx})} \in \underline{(\mathrm{sx1})} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})})\mathrm{n})\mathrm{n}]$

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

$\mathrm{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}(\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 \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$

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

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

$[\mathrm{FromCartProd}(1) \stackrel{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{\mathrm{(sx)}}\colon\forall\underline{\mathrm{(sx1)}}\colon\forall\underline{\mathrm{(sy)}}\colon\forall\underline{\mathrm{(sy1)}}\colon \{\{\underline{\mathrm{(sx)}},\underline{\mathrm{(sx)}}\},\{\underline{\mathrm{(sx)}},\underline{\mathrm{(sy)}}\}\} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{\mathrm{(sx1)}},\underline{\mathrm{(sy1)}}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathrm{(op1)}}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathrm{(op2)}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{\mathrm{(op1)}} \in$
$\underline{\mathrm{(sx1)}} \Rightarrow \dot{\neg}(\overline{\mathrm{(op2)}} \in \underline{\mathrm{(sy1)}})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{\mathrm{(op1)}},\overline{\mathrm{(op1)}}\},\{\overline{\mathrm{(op1)}},\overline{\mathrm{(op2)}}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \mathrm{FromCartProd} \rhd$
$\{\{\underline{\mathrm{(sx)}},\underline{\mathrm{(sx)}}\},\{\underline{\mathrm{(sx)}},\underline{\mathrm{(sy)}}\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\underline{\mathrm{(sx1)}},\underline{\mathrm{(sy1)}}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathrm{(op1)}}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathrm{(op2)}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{\mathrm{(op1)}} \in \underline{\mathrm{(sx1)}} \Rightarrow \dot{\neg}(\overline{\mathrm{(op2)}} \in \underline{\mathrm{(sy1)}})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{\mathrm{(op1)}},\overline{\mathrm{(op1)}}\},\{\overline{\mathrm{(op1)}},\overline{\mathrm{(op2)}}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \dot{\neg}(\underline{\mathrm{(sx)}} \in \underline{\mathrm{(sx1)}} \Rightarrow$
$\dot{\neg}(\underline{\mathrm{(sy)}} \in \underline{\mathrm{(sy1)}})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\underline{\mathrm{(sx)}} \in \underline{\mathrm{(sx1)}} \Rightarrow \dot{\neg}(\underline{\mathrm{(sy)}} \in \underline{\mathrm{(sy1)}})\mathrm{n})\mathrm{n} \gg$
$\underline{\mathrm{(sx)}} \in \underline{\mathrm{(sx1)}}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \underline{(\mathrm{sy})} \in \underline{(\mathrm{sy1})}]$

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

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

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

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

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

$[productIsFunction \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil SystemQ \vdash \forall\underline{(m1)}\colon \forall\underline{(m2)}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \overline{(f1)} =$
$\overline{(f3)} \vdash \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}])\}\} \vdash \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{(m2)}, \underline{(m2)}\}, \{\underline{(m2)}, (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}])\}\} \vdash FromOrderedPair(1) \rhd$
$\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}])\}\} \gg$
$\overline{(f1)} = \underline{(m1)}; eqSymmetry \rhd \overline{(f1)} = \underline{(m1)} \gg \underline{(m1)} = \overline{(f1)}; FromOrderedPair(1) \rhd$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{(m2)}, \underline{(m2)}\}, \{\underline{(m2)}, (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}])\}\} \gg$
$\overline{(f3)} = \underline{(m2)}; eqTransitivity4 \rhd \underline{(m1)} = \overline{(f1)} \rhd \overline{(f1)} = \overline{(f3)} \rhd \overline{(f3)} = \underline{(m2)} \gg \underline{(m1)} =$
$\underline{(m2)}; SameSeries \rhd \underline{(m1)} = \underline{(m2)} \gg \underline{(fx)}[\underline{(m1)}] = \underline{(fx)}[\underline{(m2)}]; SameSeries \rhd \underline{(m1)} =$
$\underline{(m2)} \gg \underline{(fy)}[\underline{(m1)}] = \underline{(fy)}[\underline{(m2)}]; MultiplyEquations \rhd \underline{(fx)}[\underline{(m1)}] =$
$\underline{(fx)}[\underline{(m2)}] \rhd \underline{(fy)}[\underline{(m1)}] = \underline{(fy)}[\underline{(m2)}] \gg (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}]) =$
$(\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}]); FromOrderedPair(2) \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, (\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}])\}\} \gg \overline{(f2)} =$
$(\underline{(fx)}[\underline{(m1)}] * \underline{(fy)}[\underline{(m1)}]); FromOrderedPair(2) \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{(m2)}, \underline{(m2)}\}, \{\underline{(m2)}, (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}])\}\} \gg \overline{(f4)} =$
$(\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}]); eqSymmetry \rhd \overline{(f4)} = (\underline{(fx)}[\underline{(m2)}] * \underline{(fy)}[\underline{(m2)}]) \gg$

$(\underline{(\mathrm{fx})}[\underline{(\mathrm{m2})}] * \underline{(\mathrm{fy})}[\underline{(\mathrm{m2})}]) = \overline{(\mathrm{f4})}; \mathrm{eqTransitivity4} \rhd \overline{(\mathrm{f2})} =$
$(\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}] * \underline{(\mathrm{fy})}[\underline{(\mathrm{m1})}]) \rhd (\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}] * \underline{(\mathrm{fy})}[\underline{(\mathrm{m1})}]) =$
$(\underline{(\mathrm{fx})}[\underline{(\mathrm{m2})}] * \underline{(\mathrm{fy})}[\underline{(\mathrm{m2})}]) \rhd (\underline{(\mathrm{fx})}[\underline{(\mathrm{m2})}] * \underline{(\mathrm{fy})}[\underline{(\mathrm{m2})}]) = \overline{(\mathrm{f4})} \gg \overline{(\mathrm{f2})} =$
$\overline{(\mathrm{f4})}; \forall \underline{(\mathrm{m1})}\colon \forall \underline{(\mathrm{m2})}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \mathrm{Ded} \rhd \forall \underline{(\mathrm{m1})}\colon \forall \underline{(\mathrm{m2})}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \vdash$
$\{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} = \{\{\underline{(\mathrm{m1})}, \underline{(\mathrm{m1})}\}, \{\underline{(\mathrm{m1})}, (\underline{(\mathrm{fx})}[\underline{(\mathrm{m1})}] * \underline{(\mathrm{fy})}[\underline{(\mathrm{m1})}])\}\} \vdash$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} = \{\{\underline{(\mathrm{m2})}, \underline{(\mathrm{m2})}\}, \{\underline{(\mathrm{m2})}, (\underline{(\mathrm{fx})}[\underline{(\mathrm{m2})}] * \underline{(\mathrm{fy})}[\underline{(\mathrm{m2})}])\}\} \vdash$
$\overline{(\mathrm{f2})} = \overline{(\mathrm{f4})} \gg \forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

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

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

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

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

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

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

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

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

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

$\dot\neg(\forall_{\mathrm{obj}}\overline{(\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 \overline{(\mathrm{fy})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{fy})}[\underline{\mathsf{m}}] \in \mathrm{Q}; \mathrm{Qclosed}(\mathrm{Multiplication}) \rhd \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] \in \mathrm{Q} \rhd \overline{(\mathrm{fy})}[\underline{\mathsf{m}}] \in \mathrm{Q} \gg (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}]) \in \mathrm{Q}; \mathrm{ToCartProd} \rhd \underline{\mathsf{m}} \in \mathrm{N} \rhd (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}]) \in \mathrm{Q} \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\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 \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\}; \mathrm{IntroExist} \mathbin{@} \underline{\mathsf{m}} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\} \gg \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}; \mathrm{Formula2Sep} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\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(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n} \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\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}}\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{fy})}[\underline{\mathsf{m}}])\}\})\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}}\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{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} \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(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\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}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \overline{(\mathrm{fy})}[\underline{\mathsf{m}}])\}\})\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}}\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{fy})}[\underline{\mathsf{m}}])\}\})\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}}\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{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\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\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}\} \rhd \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * (\underline{\mathrm{fy}})[\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}}\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}\} \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{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\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}\}[\underline{\mathsf{m}}] = ((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] * (\underline{\mathrm{fy}})[\underline{\mathsf{m}}])\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{sameOrderedPair} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{sx})}\colon \forall\overline{(\mathrm{sx1})}\colon \forall\underline{(\mathrm{sy})}\colon \forall\overline{(\mathrm{sy1})}\colon \underline{(\mathrm{sx})} = \overline{(\mathrm{sx1})} \vdash \underline{(\mathrm{sy})} = \overline{(\mathrm{sy1})} \vdash \mathrm{SameSingleton} \rhd \underline{(\mathrm{sx})} = \overline{(\mathrm{sx1})} \gg \{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\} = \{\overline{(\mathrm{sx1})},\overline{(\mathrm{sx1})}\}; \mathrm{SamePair} \rhd \underline{(\mathrm{sx})} = \overline{(\mathrm{sx1})} \rhd \underline{(\mathrm{sy})} = \overline{(\mathrm{sy1})} \gg \{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\} = \{\overline{(\mathrm{sx1})},\overline{(\mathrm{sy1})}\}; \mathrm{SamePair} \rhd \{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\} = \{\overline{(\mathrm{sx1})},\overline{(\mathrm{sx1})}\} \rhd \{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\} = \{\overline{(\mathrm{sx1})},\overline{(\mathrm{sy1})}\} \gg \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{sx1})},\overline{(\mathrm{sx1})}\},\{\overline{(\mathrm{sx1})},\overline{(\mathrm{sy1})}\}\}; \mathrm{Repetition} \rhd \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{sx1})},\overline{(\mathrm{sx1})}\},\{\overline{(\mathrm{sx1})},\overline{(\mathrm{sy1})}\}\} \gg \{\{\underline{(\mathrm{sx})},\underline{(\mathrm{sx})}\},\{\underline{(\mathrm{sx})},\underline{(\mathrm{sy})}\}\} = \{\{\overline{(\mathrm{sx1})},\overline{(\mathrm{sx1})}\},\{\overline{(\mathrm{sx1})},\overline{(\mathrm{sy1})}\}\}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{InSeriesHelper} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \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})} \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}]$

$[\mathrm{InSeriesHelper} \stackrel{\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{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 \mathrm{FirstConjunct} \rhd \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} \gg \dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$

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

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

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

$[\text{InSeries} \overset{\text{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\text{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}: \forall\underline{(fx)}: \forall\underline{(sx)}: \forall\underline{(sy)}: \lambda\mathsf{c}.\text{Typeseries0}(\lceil\underline{(fx)}\rceil, \lceil\underline{(sx)}\rceil) \Vdash \underline{(sy)} \in \underline{(fx)} \vdash$
$\text{SeriesType} \rhd\!\!\rhd \lambda\mathsf{c}.\text{Typeseries0}(\lceil\underline{(fx)}\rceil, \lceil\underline{(sx)}\rceil) \gg \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n; \text{Repetition} \rhd \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n; \text{FirstConjunct} \rhd \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fx)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}: \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fx)})n)n)n)n \gg \dot\neg(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \underline{(fx)} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}: \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}: \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in \underline{(sx)})n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fx)} \Rightarrow$

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

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\underline{(\mathrm{sy})} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n}; \mathrm{MP2} \rhd \underline{(\mathrm{sy})} \in \underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\underline{(\mathrm{sy})} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n} \rhd \underline{(\mathrm{sy})} \in \underline{(\mathrm{fx})} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\underline{(\mathrm{sy})} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n}; \mathrm{TwiceExistMP} \rhd \dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in$
$\underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{sy})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\underline{(\mathrm{sy})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n} \rhd$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \underline{(\mathrm{sx})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\underline{(\mathrm{sy})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\underline{(\mathrm{sy})} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{To} = \mathrm{f}(\mathrm{Subset})(\mathrm{Helper}) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$

$\forall \underline{\mathsf{m}}\colon \forall \underline{(fx)}\colon \forall \underline{(fy)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \vdash \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \vdash$
$\mathrm{eqReflexivity} \gg \underline{\mathsf{m}} = \underline{\mathsf{m}}; \mathrm{A4} \mathbin{@} \underline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \gg \underline{(fx)}[\underline{\mathsf{m}}] =$
$\underline{(fy)}[\underline{\mathsf{m}}]; \mathrm{sameOrderedPair} \rhd \underline{\mathsf{m}} = \underline{\mathsf{m}} \rhd \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \gg$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\}; \mathrm{eqTransitivity} \rhd \overline{(s1)} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\} \gg$
$\overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\}; \mathrm{eqSymmetry} \rhd \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\} \gg$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\} = \overline{(s1)}; \mathrm{NatType} \gg \underline{\mathsf{m}} \in \mathrm{N}; \mathrm{MemberOfSeries} \rhd \underline{\mathsf{m}} \in \mathrm{N} \rhd$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\} \in$
$\underline{(fy)}; \mathrm{SameMember} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\} = \overline{(s1)} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fy)}[\underline{\mathsf{m}}]\}\} \in$
$\underline{(fy)} \gg \overline{(s1)} \in \underline{(fy)}; \forall \underline{\mathsf{m}}\colon \forall \underline{(fx)}\colon \forall \underline{(fy)}\colon \mathrm{Ded} \rhd \forall \underline{\mathsf{m}}\colon \forall \underline{(fx)}\colon \forall \underline{(fy)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\underline{(fy)} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \vdash \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \vdash \overline{(s1)} \in$
$\underline{(fy)} \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \underline{(fy)} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \underline{(fy)} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \underline{(fy)} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\underline{(fy)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}] \Rightarrow \overline{(s1)} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(fx)}[\underline{\mathsf{m}}]\}\} \Rightarrow$
$\overline{(s1)} \in \underline{(fy)}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{To} = \mathrm{f}(\mathrm{Subset}) \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\underline{(\mathrm{fx})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fy})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fy})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] \vdash \overline{(\mathrm{s1})} \in \underline{(\mathrm{fx})} \vdash \mathrm{InSeries} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\overline{(\mathrm{s1})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n}; \mathrm{To} = \mathrm{f}(\mathrm{Subset})(\mathrm{Helper}) \gg$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fy})} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fy})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] \Rightarrow \overline{(\mathrm{s1})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\} \Rightarrow$
$\overline{(\mathrm{s1})} \in \underline{(\mathrm{fy})}; \mathrm{MP2} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fy})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fy})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] \Rightarrow \overline{(\mathrm{s1})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\} \Rightarrow$
$\overline{(\mathrm{s1})} \in \underline{(\mathrm{fy})} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fy})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fy})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fy})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \underline{(\mathrm{fy})}[\underline{\mathsf{m}}] \gg \overline{(\mathrm{s1})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\} \Rightarrow$
$\overline{(\mathrm{s1})} \in \underline{(\mathrm{fy})}; \mathrm{ExistMP} \rhd \overline{(\mathrm{s1})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\} \Rightarrow \overline{(\mathrm{s1})} \in$
$\underline{(\mathrm{fy})} \rhd \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}(\overline{(\mathrm{s1})} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n} \gg \overline{(\mathrm{s1})} \in$
$\underline{(\mathrm{fy})}; \forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \mathrm{Ded} \rhd \forall \underline{\mathsf{m}}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

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

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

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

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

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

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

[PositiveNonzero $\stackrel{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall \underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \vdash \dot{\neg}(\underline{x} = 0)n$]

[PositiveNonzero $\stackrel{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \vdash \text{Repetition} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \gg \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n; \text{SecondConjunct} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \gg \dot{\neg}(0 = \underline{x})n; \text{NeqSymmetry} \rhd \dot{\neg}(0 = \underline{x})n \gg \dot{\neg}(\underline{x} = 0)n\rceil, p_0, c)$]

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

[reciprocalToLeft(Less) $\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}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})n)n)n \vdash \dot{\neg}(\underline{x} <= (\underline{y} * \text{rec}\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} * \text{rec}\underline{z}))n)n)n \vdash \text{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} * \text{rec}\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} * \text{rec}\underline{z}))n)n)n \gg \dot{\neg}((\underline{x} * \underline{z}) <= ((\underline{y} * \text{rec}\underline{z}) * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = ((\underline{y} * \text{rec}\underline{z}) * \underline{z}))n)n)n; \text{Three2threeFactors} \gg ((\underline{y} * \text{rec}\underline{z}) * \underline{z}) = ((\underline{y} * \underline{z}) * \text{rec}\underline{z}); \text{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; \mathrm{x} = \mathrm{x} * \mathrm{y} * (1/\mathrm{y}) \rhd \dot{\neg}(\underline{z} = 0)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{eqTransitivity} \rhd ((\underline{y} * \text{rec}\underline{z}) * \underline{z}) = ((\underline{y} * \underline{z}) * \text{rec}\underline{z}) \rhd ((\underline{y} * \underline{z}) * \text{rec}\underline{z}) = \underline{y} \gg ((\underline{y} * \text{rec}\underline{z}) * \underline{z}) = \underline{y}; \text{SubLessRight} \rhd ((\underline{y} * \text{rec}\underline{z}) * \underline{z}) = \underline{y} \rhd \dot{\neg}((\underline{x} * \underline{z}) <= ((\underline{y} * \text{rec}\underline{z}) * \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = ((\underline{y} * \text{rec}\underline{z}) * \underline{z}))n)n)n \gg \dot{\neg}((\underline{x} * \underline{z}) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} * \underline{z}) = \underline{y})n)n)n\rceil, p_0, c)$]

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

[PositiveInverted $\stackrel{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \vdash \text{FirstConjunct} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \gg 0 <= \underline{x}; \text{SecondConjunct} \rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \gg \dot{\neg}(0 = \underline{x})n; \text{NeqSymmetry} \rhd \dot{\neg}(0 = \underline{x})n \gg \dot{\neg}(\underline{x} = 0)n; 0 < 1 \gg \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)n)n)n; \mathrm{x} * 0 = 0 \gg (\underline{x} * 0) = 0; \mathrm{x} * \mathrm{y} = \text{zBackwards} \rhd (\underline{x} * 0) = 0 \gg 0 = (0 * \underline{x}); \text{SubLessLeft} \rhd 0 = (0 * \underline{x}) \rhd \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)n)n)n \gg \dot{\neg}((0 * \underline{x}) <= 1 \Rightarrow \dot{\neg}(\dot{\neg}((0 * \underline{x}) = 1)n)n)n; \text{Reciprocal} \rhd \dot{\neg}(\underline{x} = 0)n \gg (\underline{x} * \text{rec}\underline{x}) = 1; \mathrm{x} * \mathrm{y} = \text{zBackwards} \rhd (\underline{x} * \text{rec}\underline{x}) = 1 \gg 1 = (\text{rec}\underline{x} * \underline{x}); \text{SubLessRight} \rhd 1 = (\text{rec}\underline{x} * \underline{x}) \rhd \dot{\neg}((0 * \underline{x}) <= 1 \Rightarrow \dot{\neg}(\dot{\neg}((0 * \underline{x}) = 1)n)n)n \gg \dot{\neg}((0 * \underline{x}) <= (\text{rec}\underline{x} * \underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((0 * \underline{x}) = (\text{rec}\underline{x} * \underline{x}))n)n)n; \text{LessDivision} \rhd 0 <= \underline{x} \rhd \dot{\neg}((0 * \underline{x}) <= (\text{rec}\underline{x} * \underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((0 * \underline{x}) = (\text{rec}\underline{x} * \underline{x}))n)n)n \gg \dot{\neg}(0 <= \text{rec}\underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \text{rec}\underline{x})n)n)n\rceil, p_0, c)$]

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

[ToNumericalLess $\stackrel{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \vdash 0 <= \underline{x} \vdash \text{NonnegativeNumerical} \rhd 0 <= \underline{x} \gg |\underline{x}| = \underline{x}; \text{eqSymmetry} \rhd |\underline{x}| = \underline{x} \gg \underline{x} = |\underline{x}|; \text{SubLessLeft} \rhd \underline{x} = |\underline{x}| \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n; \forall \underline{x}\colon \forall \underline{y}\colon \dot{\neg}((-\mathrm{u}\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{y}) = \underline{x})n)n)n \vdash \underline{x} <= 0 \vdash \text{LessNegated} \rhd \dot{\neg}((-\mathrm{u}\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{y}) = \underline{x})n)n)n \gg \dot{\neg}((-\mathrm{u}\underline{x}) <= (-\mathrm{u}(-\mathrm{u}\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{x}) = (-\mathrm{u}(-\mathrm{u}\underline{y})))n)n)n; \text{lemma nonpositiveNumerical} \rhd \underline{x} <= 0 \gg |\underline{x}| =$

$(-u\underline{x}); \text{eqSymmetry} \rhd |\underline{x}| = (-u\underline{x}) \gg (-u\underline{x}) = |\underline{x}|; \text{SubLessLeft} \rhd (-u\underline{x}) = |\underline{x}| \rhd \dot{\neg}((-u\underline{x}) <= (-u(-u\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{x}) = (-u(-u\underline{y})))n)n)n \gg \dot{\neg}(|\underline{x}| <= (-u(-u\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = (-u(-u\underline{y})))n)n)n; \text{DoubleMinus} \gg (-u(-u\underline{y})) = \underline{y}; \text{SubLessRight} \rhd (-u(-u\underline{y})) = \underline{y} \rhd \dot{\neg}(|\underline{x}| <= (-u(-u\underline{y})) \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = (-u(-u\underline{y})))n)n)n \gg \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n; \forall\underline{x}\colon \forall\underline{y}\colon \text{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})n)n)n \vdash 0 <= \underline{x} \vdash \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} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \Rightarrow 0 <= \underline{x} \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n; \text{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}((-u\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{y}) = \underline{x})n)n)n \vdash \underline{x} <= 0 \vdash \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n \gg \dot{\neg}((-u\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{y}) = \underline{x})n)n)n \Rightarrow \underline{x} <= 0 \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n; \dot{\neg}((-u\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{y}) = \underline{x})n)n)n \vdash \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \vdash \text{MP} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \Rightarrow 0 <= \underline{x} \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg 0 <= \underline{x} \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n; \text{MP} \rhd \dot{\neg}((-u\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{y}) = \underline{x})n)n)n \Rightarrow \underline{x} <= 0 \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n \rhd \dot{\neg}((-u\underline{y}) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{y}) = \underline{x})n)n)n \gg \underline{x} <= 0 \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n; \text{FromLeqGeq} \rhd 0 <= \underline{x} \Rightarrow \dot{\neg}(|\underline{x}| <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n \rhd \underline{x} <= 0 \Rightarrow \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} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{x}| = \underline{y})n)n)n\rceil, p_0, c)]$

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

$[x <= |x| \stackrel{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall\underline{x}\colon 0 <= \underline{x} \vdash \text{NonnegativeNumerical} \gg |\underline{x}| = \underline{x}; \text{eqSymmetry} \rhd |\underline{x}| = \underline{x} \gg \underline{x} = |\underline{x}|; \text{eqLeq} \rhd \underline{x} = |\underline{x}| \gg \underline{x} <= |\underline{x}|; \forall\underline{x}\colon \underline{x} <= 0 \vdash 0 <= |x| \gg 0 <= |\underline{x}|; \text{leqTransitivity} \rhd \underline{x} <= 0 \rhd 0 <= |\underline{x}| \gg \underline{x} <= |\underline{x}|; \forall\underline{x}\colon \text{Ded} \rhd \forall\underline{x}\colon 0 <= \underline{x} \vdash \underline{x} <= |\underline{x}| \gg 0 <= \underline{x} \Rightarrow \underline{x} <= |\underline{x}|; \text{Ded} \rhd \forall\underline{x}\colon \underline{x} <= 0 \vdash \underline{x} <= |\underline{x}| \gg \underline{x} <= 0 \Rightarrow \underline{x} <= |\underline{x}|; \text{FromLeqGeq} \rhd 0 <= \underline{x} \Rightarrow \underline{x} <= |\underline{x}| \rhd \underline{x} <= 0 \Rightarrow \underline{x} <= |\underline{x}| \gg \underline{x} <= |\underline{x}|\rceil, p_0, c)]$

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

$[\text{PositiveToLeft(Less)} \stackrel{\text{proof}}{\rightarrow} \lambda c.\lambda x.\mathcal{P}(\lceil \text{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} + \underline{z}))n)n)n \vdash \text{LessAddition} \rhd \dot{\neg}(\underline{x} <= (\underline{y} + \underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y} + \underline{z}))n)n)n \gg \dot{\neg}((\underline{x} + (-u\underline{z})) <= ((\underline{y} + \underline{z}) + (-u\underline{z})) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) = ((\underline{y} + \underline{z}) + (-u\underline{z})))n)n)n; x = x + y - y \gg \underline{y} = ((\underline{y} + \underline{z}) + (-u\underline{z})); \text{eqSymmetry} \rhd \underline{y} = ((\underline{y} + \underline{z}) + (-u\underline{z})) \gg ((\underline{y} + \underline{z}) + (-u\underline{z})) = \underline{y}; \text{SubLessRight} \rhd ((\underline{y} + \underline{z}) + (-u\underline{z})) = \underline{y} \rhd \dot{\neg}((\underline{x} + (-u\underline{z})) <= ((\underline{y} + \underline{z}) + (-u\underline{z})) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) = ((\underline{y} + \underline{z}) + (-u\underline{z})))n)n)n \gg \dot{\neg}((\underline{x} + (-u\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x} + (-u\underline{z})) = \underline{y})n)n)n\rceil, p_0, c)]$

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

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

$(\underline{z}+\underline{y}))n)n)n \gg \dot{\neg}(\underline{x} <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{z}+\underline{y}))n)n)n\rceil, p_0, \mathsf{c})]$

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

[NumericalDifferenceLess(Helper) $\overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon 0 <= (\underline{x}+(-u\underline{y})) \vdash \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})n)n)n \vdash$ leqLessTransitivity $\rhd 0 <= (\underline{x}+(-u\underline{y})) \rhd \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})n)n)n \gg \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})n)n)n;$ PositiveNegated $\rhd \dot{\neg}(0 <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{z})n)n)n \gg \dot{\neg}((-u\underline{z}) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{z}) = 0)n)n)n;$ LessAdditionLeft $\rhd \dot{\neg}((-u\underline{z}) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-u\underline{z}) = 0)n)n)n \gg \dot{\neg}((\underline{y}+(-u\underline{z})) <= (\underline{y}+0) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = (\underline{y}+0))n)n)n;$ plus0 $\gg (\underline{y}+0) = \underline{y};$ SubLessRight $\rhd (\underline{y}+0) = \underline{y} \rhd \dot{\neg}((\underline{y}+(-u\underline{z})) <= (\underline{y}+0) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = (\underline{y}+0))n)n)n \gg \dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{y})n)n)n;$ negativeToLeft(Leq)(1term) $\rhd 0 <= (\underline{x}+(-u\underline{y})) \gg \underline{y} <= \underline{x};$ LessLeqTransitivity $\rhd \dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{y})n)n)n \rhd \underline{y} <= \underline{x} \gg \dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})n)n)n;$ NegativeToRight(Less) $\rhd \dot{\neg}((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{x}+(-u\underline{y})) = \underline{z})n)n)n \gg \dot{\neg}(\underline{x} <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{z}+\underline{y}))n)n)n;$ plusCommutativity $\gg (\underline{z}+\underline{y}) = (\underline{y}+\underline{z});$ SubLessRight $\rhd (\underline{z}+\underline{y}) = (\underline{y}+\underline{z}) \rhd \dot{\neg}(\underline{x} <= (\underline{z}+\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{z}+\underline{y}))n)n)n \gg \dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))n)n)n;$ JoinConjuncts $\rhd \dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})n)n)n \rhd \dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))n)n)n \gg \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))n)n)n)n)n\rceil, p_0, \mathsf{c})]$

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

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

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

$\underline{x})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (\underline{y}+\underline{z}))n)n)n)n)n\rceil, p_0, \mathsf{c})]$

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

$[F - \mathrm{Bounded(Helper)} \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 \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{NumericalDifferenceLess} \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; \mathrm{FirstConjunct} \rhd \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{y}+(-u\underline{z})) <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{y}+(-u\underline{z})) = \underline{x})n)n)n; \mathrm{NegativeToRight(Less)} \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 \gg \dot{\neg}(\underline{y} <= (\underline{x}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (\underline{x}+\underline{z}))n)n)n; x <= |x| \gg (\underline{x}+\underline{z}) <= |(\underline{x}+\underline{z})|; \mathrm{LessLeqTransitivity} \rhd \dot{\neg}(\underline{y} <= (\underline{x}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (\underline{x}+\underline{z}))n)n)n \rhd (\underline{x}+\underline{z}) <= |(\underline{x}+\underline{z})| \gg \dot{\neg}(\underline{y} <= |(\underline{x}+\underline{z})| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = |(\underline{x}+\underline{z})|)n)n)n; \mathrm{MaxLeq(1)} \gg |(\underline{x}+\underline{z})| <= \mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|); \mathrm{LessLeqTransitivity} \rhd \dot{\neg}(\underline{y} <= |(\underline{x}+\underline{z})| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = |(\underline{x}+\underline{z})|)n)n)n \rhd |(\underline{x}+\underline{z})| <= \mathrm{if}(|(\underline{x}+(-u\underline{z}))| <= |(\underline{x}+\underline{z})|, |(\underline{x}+\underline{z})|, |(\underline{x}+(-u\underline{z}))|) \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; \mathrm{SecondConjunct} \rhd \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} <= (\underline{y}+\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{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$

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

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

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

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): $\forall_{\mathrm{obj}}$(v2): (v2) <=
n ⇒ ∸(|(fx)[(v2)]| <= (v1) ⇒ ∸(∸(|(fx)[(v2)]| = (v1))n)n)n ⊢ ∸(n <=
(v2))n ⊢ ∸(|(fx)[(v2)]| <= (v1) ⇒ ∸(∸(|(fx)[(v2)]| = (v1))n)n)n ≫
$\forall_{\mathrm{obj}}$(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 ≫ $\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$n: ∸($\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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 ⊳ $\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$n: ∸($\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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 ≫ ∸($\forall_{\mathrm{obj}}$n: ∸($\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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 ≫
∸($\forall_{\mathrm{obj}}$(v1): ∸($\forall_{\mathrm{obj}}$(v2): (v2) <= n ⇒ ∸(|(fx)[(v2)]| <= (v1) ⇒
∸(∸(|(fx)[(v2)]| = (v1))n)n)n)n)n; ExistMP ⊳ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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 ⊳
∸($\forall_{\mathrm{obj}}$n: ∸($\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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)]

[Fpart − Bounded(Base) $\stackrel{\mathrm{stmt}}{\rightarrow}$ SystemQ ⊢ ∀(v1): ∀(v2n): ∀(fx): ∸ ($\forall_{\mathrm{obj}}$(v1): ∸ ($\forall_{\mathrm{obj}}$(v2n): (v2n) <= 0 ⇒ ∸ (|(fx)[(v2n)]| <= (v1) ⇒ ∸ (∸ (|(fx)[(v2n)]| = (v1))n)n)n)n)n]

[Fpart − Bounded(Base) $\stackrel{\mathrm{proof}}{\rightarrow}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢ ∀(v1): ∀(v2n): ∀(fx): (v2n) <= 0 ⊢ LeqLessEq ⊳ (v2n) <= 0 ≫ ∸ (∸ ((v2n) <= 0 ⇒ ∸ (∸ ((v2n) = 0)n)n)n)n ⇒ (v2n) = 0; Nonnegative(N) ≫ 0 <= (v2n); toNotLess ⊳ 0 <= (v2n) ≫ ∸ (∸ ((v2n) <= 0 ⇒ ∸ (∸ ((v2n) = 0)n)n)n)n; NegateDisjunct1 ⊳ ∸ (∸ ((v2n) <= 0 ⇒ ∸ (∸ ((v2n) = 0)n)n)n)n ⇒ (v2n) = 0 ⊳ ∸ (∸ ((v2n) <= 0 ⇒ ∸ (∸ ((v2n) = 0)n)n)n)n ≫ (v2n) = 0; SameSeries ⊳ (v2n) = 0 ≫ (fx)[(v2n)] = (fx)[0]; SameNumerical ⊳ (fx)[(v2n)] = (fx)[0] ≫ |(fx)[(v2n)]| = |(fx)[0]|; eqAddition ⊳ |(fx)[(v2n)]| = |(fx)[0]| ≫ (|(fx)[(v2n)]| + 1) = (|(fx)[0]| + 1); leqReflexivity ≫ |(fx)[(v2n)]| <= |(fx)[(v2n)]|; Leq + 1 ⊳ |(fx)[(v2n)]| <= |(fx)[(v2n)]| ≫ ∸ (|(fx)[(v2n)]| <= (|(fx)[(v2n)]| + 1) ⇒ ∸ (∸ (|(fx)[(v2n)]| = (|(fx)[(v2n)]| + 1))n)n)n; SubLessRight ⊳ (|(fx)[(v2n)]| + 1) = (|(fx)[0]| + 1) ⊳ ∸ (|(fx)[(v2n)]| <= (|(fx)[(v2n)]| + 1) ⇒ ∸ (∸ (|(fx)[(v2n)]| = (|(fx)[(v2n)]| + 1))n)n)n ≫ ∸ (|(fx)[(v2n)]| <= (|(fx)[0]| + 1) ⇒ ∸ (∸ (|(fx)[(v2n)]| = (|(fx)[0]| + 1))n)n)n; ∀(v1): ∀(v2n): ∀(fx): Ded ⊳ ∀(v1): ∀(v2n): ∀(fx): (v2n) <= 0 ⊢ ∸ (|(fx)[(v2n)]| <= (|(fx)[0]| + 1) ⇒ ∸ (∸ (|(fx)[(v2n)]| = (|(fx)[0]| + 1))n)n)n ≫ (v2n) <= 0 ⇒ ∸ (|(fx)[(v2n)]| <= (|(fx)[0]| + 1) ⇒ ∸ (∸ (|(fx)[(v2n)]| = (|(fx)[0]| + 1))n)n)n; Gen ⊳ (v2n) <= 0 ⇒ ∸ (|(fx)[(v2n)]| <= (|(fx)[0]| + 1) ⇒ ∸ (∸ (|(fx)[(v2n)]| = (|(fx)[0]| + 1))n)n)n ≫ $\forall_{\mathrm{obj}}$(v2n): (v2n) <= 0 ⇒ ∸ (|(fx)[(v2n)]| <= (|(fx)[0]| + 1) ⇒ ∸ (∸ (|(fx)[(v2n)]| = (|(fx)[0]| + 1))n)n)n; IntroExist @(|(fx)[0]| + 1) ⊳ $\forall_{\mathrm{obj}}$(v2n): (v2n) <= 0 ⇒ ∸ (|(fx)[(v2n)]| <= (|(fx)[0]| + 1) ⇒

$\dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (|(fx)[0]| + 1))n)n)n \gg \dot{\neg}(\forall_{obj}(v1){:}\, \dot{\neg}(\forall_{obj}(v2n){:}\, (v2n) <= 0 \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n)n)n\rceil, p_0, \mathsf{c})]$

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

$[\mathrm{Fpart} - \mathrm{Bounded}(\mathrm{InduHelper}) \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall(v1){:}\, \forall(v2n){:}\, \forall \underline{n}{:}\, \forall(fx){:}\, (v2n) <= \underline{n} \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n \vdash (v2n) <= (\underline{n}+1) \vdash \mathrm{LeqLessEq} \triangleright (v2n) <= (\underline{n}+1) \gg \dot{\neg}(\dot{\neg}((v2n) <= (\underline{n}+1) \Rightarrow \dot{\neg}(\dot{\neg}((v2n) = (\underline{n}+1))n)n)n)n \Rightarrow (v2n) = (\underline{n}+1); \forall(v1){:}\, \forall(v2n){:}\, \forall \underline{n}{:}\, \forall(fx){:}\, (v2n) <= \underline{n} \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n \vdash \dot{\neg}((v2n) <= (\underline{n}+1) \Rightarrow \dot{\neg}(\dot{\neg}((v2n) = (\underline{n}+1))n)n)n \vdash \mathrm{LessMinus1}(N) \triangleright \dot{\neg}((v2n) <= (\underline{n}+1) \Rightarrow \dot{\neg}(\dot{\neg}((v2n) = (\underline{n}+1))n)n)n \gg (v2n) <= \underline{n}; \mathrm{MP} \triangleright (v2n) <= \underline{n} \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n \triangleright (v2n) <= \underline{n} \gg \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n; \mathrm{MaxLeq}(1) \gg (v1) <= \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)); \mathrm{LessLeqTransitivity} \triangleright \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n \triangleright (v1) <= \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)) \gg \dot{\neg}(|(fx)[(v2n)]| <= \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)))n)n)n; \forall(v1){:}\, \forall(v2n){:}\, \forall \underline{n}{:}\, \forall(fx){:}\, (v2n) = (\underline{n}+1) \vdash \mathrm{SameSeries} \triangleright (v2n) = (\underline{n}+1) \gg (fx)[(v2n)] = (fx)[(\underline{n}+1)]; \mathrm{SameNumerical} \triangleright (fx)[(v2n)] = (fx)[(\underline{n}+1)] \gg |(fx)[(v2n)]| = |(fx)[(\underline{n}+1)]|; \mathrm{eqLeq} \triangleright |(fx)[(v2n)]| = |(fx)[(\underline{n}+1)]| \gg |(fx)[(v2n)]| <= |(fx)[(\underline{n}+1)]|; \mathrm{Leq}+1 \triangleright |(fx)[(v2n)]| <= |(fx)[(\underline{n}+1)]| \gg \dot{\neg}(|(fx)[(v2n)]| <= (|(fx)[(\underline{n}+1)]|+1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (|(fx)[(\underline{n}+1)]|+1))n)n)n; \mathrm{MaxLeq}(2) \gg (|(fx)[(\underline{n}+1)]|+1) <= \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)); \mathrm{LessLeqTransitivity} \triangleright \dot{\neg}(|(fx)[(v2n)]| <= (|(fx)[(\underline{n}+1)]|+1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (|(fx)[(\underline{n}+1)]|+1))n)n)n \triangleright (|(fx)[(\underline{n}+1)]|+1) <= \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)) \gg \dot{\neg}(|(fx)[(v2n)]| <= \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)))n)n)n; \mathrm{Ded} \triangleright \forall(v1){:}\, \forall(v2n){:}\, \forall \underline{n}{:}\, \forall(fx){:}\, (v2n) <= \underline{n} \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n \vdash \dot{\neg}((v2n) <= (\underline{n}+1) \Rightarrow \dot{\neg}(\dot{\neg}((v2n) = (\underline{n}+1))n)n)n \vdash \dot{\neg}(|(fx)[(v2n)]| <= \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)))n)n)n \gg (v2n) <= \underline{n} \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n \Rightarrow \dot{\neg}((v2n) <= (\underline{n}+1) \Rightarrow \dot{\neg}(\dot{\neg}((v2n) = (\underline{n}+1))n)n)n \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)))n)n)n; \mathrm{MP} \triangleright (v2n) <= \underline{n} \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= (v1) \Rightarrow \dot{\neg}(\dot{\neg}(|(fx)[(v2n)]| = (v1))n)n)n \Rightarrow \dot{\neg}((v2n) <= (\underline{n}+1) \Rightarrow \dot{\neg}(\dot{\neg}((v2n) = (\underline{n}+1))n)n)n \Rightarrow \dot{\neg}(|(fx)[(v2n)]| <= \mathrm{if}((|(fx)[(\underline{n}+1)]|+1) <= (v1), (v1), (|(fx)[(\underline{n}+1)]|+1)) \Rightarrow \dot{\neg}(\dot{\neg}(|(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) $\stackrel{\text{stmt}}{\to}$ SystemQ ⊢ ∀(v1): ∀(v2n): ∀n: ∀(fx): ∸($\forall_{obj}$(v1): ∸($\forall_{obj}$(v2n): (v2n) <= n ⇒ ∸(|(fx)[(v2n)]| <= (v1) ⇒ ∸(∸(|(fx)[(v2n)]| = (v1))n)n)n)n)n ⇒ ∸($\forall_{obj}$(v1): ∸($\forall_{obj}$(v2n): (v2n) <= (n + 1) ⇒ ∸(|(fx)[(v2n)]| <= (v1) ⇒ ∸(∸(|(fx)[(v2n)]| = (v1))n)n)n)n)n]

[Fpart − Bounded(Indu) $\stackrel{\text{proof}}{\to}$ 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 ≫ $\forall_{obj}$(v2n): (v2n) <= n ⇒ ∸(|(fx)[(v2n)]| <= (v1) ⇒ ∸(∸(|(fx)[(v2n)]| = (v1))n)n)n ⇒

$\forall_{obj}$(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)) ⊳ $\forall_{obj}$(v2n): (v2n) <= n ⇒ ¬̇ (|(fx)[(v2n)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n ⇒ $\forall_{obj}$(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 ≫ ¬̇ ($\forall_{obj}$(v1): ¬̇ ($\forall_{obj}$(v2n): (v2n) <= n ⇒ ¬̇ (|(fx)[(v2n)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n)n)n ⇒ ¬̇ ($\forall_{obj}$(v1): ¬̇ ($\forall_{obj}$(v2n): (v2n) <= (n + 1) ⇒ ¬̇ (|(fx)[(v2n)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2n)]| = (v1))n)n)n)n)n⌉, p_0, c)]

[Fpart − Bounded $\stackrel{stmt}{\rightarrow}$ SystemQ ⊢ ∀(v1): ∀(v2): ∀n: ∀(fx): ¬̇ ($\forall_{obj}$(v1): ¬̇ ($\forall_{obj}$(v2): (v2) <= n ⇒ ¬̇ (|(fx)[(v2)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2)]| = (v1))n)n)n)n)n]

[Fpart − Bounded $\stackrel{proof}{\rightarrow}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(v1): ∀(v2): ∀n: ∀(fx): Fpart − Bounded(Base) ≫ ¬̇ ($\forall_{obj}$(v1): ¬̇ ($\forall_{obj}$(v2): (v2) <= 0 ⇒ ¬̇ (|(fx)[(v2)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2)]| = (v1))n)n)n)n)n; Fpart − Bounded(Indu) ≫ ¬̇ ($\forall_{obj}$(v1): ¬̇ ($\forall_{obj}$(v2): (v2) <= n ⇒ ¬̇ (|(fx)[(v2)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2)]| = (v1))n)n)n)n)n ⇒ ¬̇ ($\forall_{obj}$(v1): ¬̇ ($\forall_{obj}$(v2): (v2) <= (n + 1) ⇒ ¬̇ (|(fx)[(v2)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2)]| = (v1))n)n)n)n)n; Induction ⊳ ¬̇ ($\forall_{obj}$(v1): ¬̇ ($\forall_{obj}$(v2): (v2) <= 0 ⇒ ¬̇ (|(fx)[(v2)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2)]| = (v1))n)n)n)n)n ⊳ ¬̇ ($\forall_{obj}$(v1): ¬̇ ($\forall_{obj}$(v2): (v2) <= n ⇒ ¬̇ (|(fx)[(v2)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2)]| = (v1))n)n)n)n)n ⇒ ¬̇ ($\forall_{obj}$(v1): ¬̇ ($\forall_{obj}$(v2): (v2) <= (n + 1) ⇒ ¬̇ (|(fx)[(v2)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2)]| = (v1))n)n)n)n)n ≫ ¬̇ ($\forall_{obj}$(v1): ¬̇ ($\forall_{obj}$(v2): (v2) <= n ⇒ ¬̇ (|(fx)[(v2)]| <= (v1) ⇒ ¬̇ (¬̇ (|(fx)[(v2)]| = (v1))n)n)n)n)n⌉, p_0, c)]

[negativeToLeft(Leq)(1term) $\stackrel{stmt}{\rightarrow}$ SystemQ ⊢ ∀y: ∀z: 0 <= (y + (−uz)) ⊢ z <= y]

[negativeToLeft(Leq)(1term) $\stackrel{proof}{\rightarrow}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀y: ∀z: 0 <= (y + (−uz)) ⊢ negativeToLeft(Leq) ⊳ 0 <= (y + (−uz)) ≫ (0 + z) <= y; lemma plus0Left ≫ (0 + z) = z; subLeqLeft ⊳ (0 + z) = z ≫ z <= y⌉, p_0, c)]

[NegativeToLeft(Less) $\stackrel{stmt}{\rightarrow}$ SystemQ ⊢ ∀x: ∀y: ∀z: ¬̇ (x <= (y + (−uz)) ⇒ ¬̇ (¬̇ (x = (y + (−uz)))n)n)n ⊢ ¬̇ ((x + z) <= y ⇒ ¬̇ (¬̇ ((x + z) = y)n)n)n]

[NegativeToLeft(Less) $\stackrel{proof}{\rightarrow}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀x: ∀y: ∀z: ¬̇ (x <= (y + (−uz)) ⇒ ¬̇ (¬̇ (x = (y + (−uz)))n)n)n ⊢ LessAddition ⊳ ¬̇ (x <= (y + (−uz)) ⇒ ¬̇ (¬̇ (x = (y + (−uz)))n)n)n ≫ ¬̇ ((x + z) <= ((y + (−uz)) + z) ⇒ ¬̇ (¬̇ ((x + z) = ((y + (−uz)) + z))n)n)n; Three2threeTerms ≫ ((y + (−uz)) + z) = ((y + z) + (−uz)); x = x + y − y ≫ y = ((y + z) + (−uz)); eqSymmetry ⊳ y = ((y + z) + (−uz)) ≫ ((y + z) + (−uz)) = y; eqTransitivity ⊳ ((y + (−uz)) + z) = ((y + z) + (−uz)) ⊳ ((y + z) + (−uz)) = y ≫ ((y + (−uz)) + z) = y; SubLessRight ⊳ ((y + (−uz)) + z) = y ⊳ ¬̇ ((x + z) <= ((y + (−uz)) + z) ⇒ ¬̇ (¬̇ ((x + z) = ((y + (−uz)) + z))n)n)n ≫ ¬̇ ((x + z) <= y ⇒ ¬̇ (¬̇ ((x + z) = y)n)n)n⌉, p_0, c)]

[PositiveTripled $\stackrel{stmt}{\rightarrow}$ SystemQ ⊢ ∀x: ¬̇ (0 <= (rec((1 + 1) + 1) ∗ x) ⇒ ¬̇ (¬̇ (0 =

$(\mathrm{rec}((1+1)+1) * \underline{x}))n)n)n \vdash \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n]$

$[\mathrm{PositiveTripled} \stackrel{\mathrm{proof}}{\rightarrow} \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}))n)n)n \vdash 0 < 3 \gg \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))n)n)n; \mathrm{PositiveFactors} \rhd \dot{\neg}(0 <= ((1+1)+1) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((1+1)+1))n)n)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}))n)n)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})))n)n)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))n)n)n \gg \dot{\neg}(((1+1)+1) = 0)n; \mathrm{Reciprocal} \rhd \dot{\neg}(((1+1)+1) = 0)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{lemma\ 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})))n)n)n \gg \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

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

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

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

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

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

$\dot\neg(\dot\neg(\mathrm{rec}((1+1)+1) = ((1+1)*\mathrm{rec}((1+1)+1)))\mathrm{n})\mathrm{n})\mathrm{n}]$

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

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

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

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

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

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

$[(2/3)\mathrm{x} + (1/3)\mathrm{x} = \mathrm{x} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathrm{x}}\colon \mathrm{TwoWholes} \gg ((\mathrm{rec}((1+1)+1)*\underline{\mathrm{x}}) + (\mathrm{rec}((1+1)+1)*\underline{\mathrm{x}})) =$

$((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x}));\mathrm{timesAssociativity} \gg (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x}));\mathrm{eqSymmetry} \rhd (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) \gg ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) = (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x});\mathrm{eqTransitivity} \rhd ((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) \rhd ((1+1)*(\mathrm{rec}((1+1)+1)*\underline{x})) = (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) \gg ((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x});\mathrm{eqAddition} \rhd ((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) \gg (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = ((((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}));\mathrm{ThreeThirds} \gg (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x};\mathrm{Equality} \rhd (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = ((((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) \rhd (((\mathrm{rec}((1+1)+1)*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}))+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x} \gg ((((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = \underline{x}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[-\mathrm{x}+(1/3)\mathrm{x} = -(2/3)\mathrm{x} \stackrel{\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}+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{x})));\mathrm{EqNegated} \rhd (((1+1)*\mathrm{rec}((1+1)+1))*\underline{x}) = (\underline{x}+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{x}))) \gg (-\mathrm{u}(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})) = (-\mathrm{u}(\underline{x}+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{x}))));\mathrm{MinusNegated} \gg (-\mathrm{u}(\underline{x}+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{x})))) = ((\mathrm{rec}((1+1)+1)*\underline{x})+(-\mathrm{u}\underline{x}));\mathrm{plusCommutativity} \gg ((\mathrm{rec}((1+1)+1)*\underline{x})+(-\mathrm{u}\underline{x})) = ((-\mathrm{u}\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}));\mathrm{eqTransitivity4} \rhd (-\mathrm{u}(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})) = (-\mathrm{u}(\underline{x}+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{x})))) \rhd (-\mathrm{u}(\underline{x}+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{x})))) = ((\mathrm{rec}((1+1)+1)*\underline{x})+(-\mathrm{u}\underline{x})) \rhd ((\mathrm{rec}((1+1)+1)*\underline{x})+(-\mathrm{u}\underline{x})) = ((-\mathrm{u}\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) \gg (-\mathrm{u}(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})) = ((-\mathrm{u}\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x}));\mathrm{eqSymmetry} \rhd (-\mathrm{u}(((1+1)*\mathrm{rec}((1+1)+1))*\underline{x})) = ((-\mathrm{u}\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) \gg ((-\mathrm{u}\underline{x})+(\mathrm{rec}((1+1)+1)*\underline{x})) = (-\mathrm{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

$[\mathrm{PreserveLessGreater} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{x1})}\colon \forall\underline{(\mathrm{x2})}\colon \forall\underline{(\mathrm{y1})}\colon \forall\underline{(\mathrm{y2})}\colon \forall\underline{z}\colon \underline{(\mathrm{x1})} <= ((\underline{\mathrm{y1}})+(-\mathrm{u}\underline{z})) \vdash \dot{\neg}(|((\underline{\mathrm{x1}})+(-\mathrm{u}(\underline{\mathrm{x2}})))| <= (\mathrm{rec}((1+1)+1)*\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{\mathrm{x1}})+(-\mathrm{u}(\underline{\mathrm{x2}})))| = (\mathrm{rec}((1+1)+1)*\underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(|((\underline{\mathrm{y1}})+(-\mathrm{u}(\underline{\mathrm{y2}})))| <= (\mathrm{rec}((1+1)+1)*\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{\mathrm{y1}})+(-\mathrm{u}(\underline{\mathrm{y2}})))| = (\mathrm{rec}((1+1)+1)*\underline{z}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{(\mathrm{x2})} <= ((\underline{\mathrm{y2}})+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{z})))]$

$[\mathrm{PreserveLessGreater} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{x1})}\colon \forall\underline{(\mathrm{x2})}\colon \forall\underline{(\mathrm{y1})}\colon \forall\underline{(\mathrm{y2})}\colon \forall\underline{z}\colon \underline{(\mathrm{x1})} <= ((\underline{\mathrm{y1}})+(-\mathrm{u}\underline{z})) \vdash \dot{\neg}(|((\underline{\mathrm{x1}})+(-\mathrm{u}(\underline{\mathrm{x2}})))| <= (\mathrm{rec}((1+1)+1)*\underline{z}) \Rightarrow \dot{\neg}(\dot{\neg}(|((\underline{\mathrm{x1}})+(-\mathrm{u}(\underline{\mathrm{x2}})))| =$

(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)); lemma 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 $\stackrel{\text{stmt}}{\rightarrow}$ 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 $\stackrel{\text{proof}}{\rightarrow}$ 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) ⇒ ¬̇ (¬̇ (|((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; |x − x| = 0 ≫ |(y + (−uy))| = 0; eqSymmetry ⊳ |(y + (−uy))| = 0 ≫ 0 = |(y + (−uy))|; SubLessLeft ⊳ 0 = |(y + (−uy))| ⊳ ¬̇ (0 <= (rec((1 + 1) + 1) ∗ z) ⇒ ¬̇ (¬̇ (0 = (rec((1 + 1) + 1) ∗ z))n)n)n ≫ ¬̇ (|(y + (−uy))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ¬̇ (¬̇ (|(y + (−uy))| = (rec((1 + 1) + 1) ∗ z))n)n)n; PreserveLessGreater ⊳ (x1) <= (y + (−uz)) ⊳ ¬̇ (|((x1) + (−u(x2)))| <= (rec((1 + 1) + 1) ∗ z) ⇒ ¬̇ (¬̇ (|((x1) + (−u(x2)))| = (rec((1 + 1) + 1) ∗ z))n)n)n ⊳ ¬̇ (|(y + (−uy))| <=

$(\mathrm{rec}((1+1)+1)*\underline{\mathsf{z}}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{y}}+(-\mathrm{u}\underline{\mathsf{y}}))| = (\mathrm{rec}((1+1)+1)*\underline{\mathsf{z}}))\mathrm{n})\mathrm{n} \gg$
$\underline{(\mathrm{x2})} <= (\underline{\mathsf{y}}+(-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{\mathsf{z}})))\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

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

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

$\overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))); \mathrm{TwiceExistMP} \rhd \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n} \Rightarrow$
$\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+$
$1) * \overline{(\epsilon)}))) \rhd \dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{n2})}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{n2})} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+$
$1) * \overline{(\epsilon)}))); \mathrm{JoinConjuncts} \rhd \dot\neg(0 <= \underline{(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)})} \Rightarrow \dot\neg(\dot\neg(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))) \gg \dot\neg(\dot\neg(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot\neg(\dot\neg(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <=$
$\overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n}; \mathrm{Gen} \rhd \dot\neg(\dot\neg(0 <=$
$\underline{(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)})} \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathrm{if}(\overline{(\mathrm{n2})} <=$
$\overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \underline{(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)})} \Rightarrow \dot\neg(\dot\neg(0 =$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow$
$\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n}; \mathrm{IntroExist} @ \mathrm{if}(\overline{(\mathrm{n2})} <=$
$\overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) \rhd \forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \underline{(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)})} \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}((1+$
$1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathrm{if}(\overline{(\mathrm{n2})} <= \overline{(\mathrm{n1})}, \overline{(\mathrm{n1})}, \overline{(\mathrm{n2})}) <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n} \gg \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <=$
$(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{IntroExist} @(\mathrm{rec}((1+$
$1)+1) * \overline{(\epsilon)}) \rhd \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot\neg(\dot\neg(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <=$
$(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Repetition} \rhd$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fy})}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SubLessLeft(R)} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

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

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

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

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

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

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

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

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

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

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

$\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= ((\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n};$ IntroExist $@(\mathrm{rec}((1+$
$1)+1) * \overline{(\epsilon)}) \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <=$
$((\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \overline{(\epsilon)}))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= ((\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n};$ Repetition $\rhd$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= ((\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fz})}[\overline{\mathsf{m}}] <= ((\underline{(\mathrm{fy})}[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{SubLessRight(R)} \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$
$\mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

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

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

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

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

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

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

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

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

$[\mathrm{SameFmultiplication(Helper)} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall(\mathrm{v1})\colon\forall(\mathrm{v2})\colon\forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall(\epsilon)\colon\forall(\mathrm{fx})\colon\forall(\mathrm{fy})\colon\forall(\mathrm{fz})\colon\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <= (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <=$
$(\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}(\mathrm{v2})\colon \dot{\neg}(|(\mathrm{fz})[(\mathrm{v2})]| <= (\mathrm{v1}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\mathrm{fz})[(\mathrm{v2})]| = (\mathrm{v1}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash \mathrm{A4} @ (\mathrm{v2}) \rhd \forall_{\mathrm{obj}}(\mathrm{v2})\colon \dot{\neg}(|(\mathrm{fz})[(\mathrm{v2})]| <=$
$(\mathrm{v1}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\mathrm{fz})[(\mathrm{v2})]| = (\mathrm{v1}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(|(\mathrm{fz})[(\mathrm{v2})]| <= (\mathrm{v1}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\mathrm{fz})[(\mathrm{v2})]| = (\mathrm{v1}))\mathrm{n})\mathrm{n})\mathrm{n}; 0 <= |\mathrm{x}| \gg 0 <=$
$|(\mathrm{fz})[(\mathrm{v2})]|; \mathrm{leqLessTransitivity} \rhd 0 <= |(\mathrm{fz})[(\mathrm{v2})]| \rhd \dot{\neg}(|(\mathrm{fz})[(\mathrm{v2})]| <= (\mathrm{v1}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\mathrm{fz})[(\mathrm{v2})]| = (\mathrm{v1}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= (\mathrm{v1}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{v1}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveInverted} \rhd \dot{\neg}(0 <= (\mathrm{v1}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{v1}))\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(0 <= \mathrm{rec}(\mathrm{v1}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}(\mathrm{v1}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveFactors} \rhd \dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(0 <= \mathrm{rec}(\mathrm{v1}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \mathrm{rec}(\mathrm{v1}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$(\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{A4} @ \underline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$(\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$(\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}]+(-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\underline{(\epsilon)}*\mathrm{rec}(\mathrm{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}]+(-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| =$
$(\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MP2} \rhd \dot{\neg}(0 <= (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <=$
$(\underline{(\epsilon)}*\mathrm{rec}(\mathrm{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}]+(-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\underline{(\epsilon)}*\mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(0 <=$
$(\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \gg$
$\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}]+(-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\underline{(\epsilon)}*\mathrm{rec}(\mathrm{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}]+(-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| =$
$(\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{reciprocalToLeft(Less)} \rhd \dot{\neg}(0 <= (\mathrm{v1}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\mathrm{v1}))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| <= (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| = (\underline{(\epsilon)} * \mathrm{rec}(\mathrm{v1})))\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}((|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| * (\mathrm{v1})) <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}((|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| * (\mathrm{v1})) = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{TimesF} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] =$
$((\mathrm{fx})[\underline{\mathsf{m}}] * (\mathrm{fz})[\underline{\mathsf{m}}]); \mathrm{TimesF} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$

{{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m] =
((fy)[m] ∗ (fz)[m]); EqNegated ⊳ {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: ∸(e_{Ph} =
{{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m] = ((fy)[m] ∗ (fz)[m]) ≫ (−u{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: ∸(e_{Ph} =
{{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m]) = (−u((fy)[m] ∗ (fz)[m])); −x ∗ y =
−(x ∗ y) ≫ ((−u(fy)[m]) ∗ (fz)[m]) = (−u((fy)[m] ∗ (fz)[m])); eqSymmetry ⊳
((−u(fy)[m]) ∗ (fz)[m]) = (−u((fy)[m] ∗ (fz)[m])) ≫ (−u((fy)[m] ∗ (fz)[m])) =
((−u(fy)[m]) ∗ (fz)[m]); eqTransitivity ⊳ (−u{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: ∸(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m]) = (−u((fy)[m] ∗
(fz)[m])) ⊳ (−u((fy)[m] ∗ (fz)[m])) = ((−u(fy)[m]) ∗ (fz)[m]) ≫ (−u{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: ∸(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m]) =
((−u(fy)[m]) ∗ (fz)[m]); AddEquations ⊳ {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: ∸(e_{Ph} =
{{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] = ((fx)[m] ∗ (fz)[m]) ⊳ (−u{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: ∸(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m]) =
((−u(fy)[m]) ∗ (fz)[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: ∸(e_{Ph} =
{{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{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: ∸(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m])) =
(((fx)[m] ∗ (fz)[m]) + ((−u(fy)[m]) ∗ (fz)[m])); DistributionOutLeft ≫
(((fx)[m] ∗ (fz)[m]) + ((−u(fy)[m]) ∗ (fz)[m])) =
((fz)[m] ∗ ((fx)[m] + (−u(fy)[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: ∸(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{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: ∸(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m])) =

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

P(P(Union({N, Q}))) | $\dot\neg$($\forall_{obj}$(op1): $\dot\neg$($\dot\neg$($\forall_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒
$\dot\neg$((op2) ∈ Q)n)n ⇒ $\dot\neg$(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
$\dot\neg$($\forall_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{ph ∈ {ph ∈
P(P(Union({N, Q}))) | $\dot\neg$($\forall_{obj}$(op1): $\dot\neg$($\dot\neg$($\forall_{obj}$(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} |
$\dot\neg$($\forall_{obj}$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}))) | $\dot\neg$($\forall_{obj}$(op1): $\dot\neg$($\dot\neg$($\forall_{obj}$(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} |
$\dot\neg$($\forall_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{ph ∈ {ph ∈
P(P(Union({N, Q}))) | $\dot\neg$($\forall_{obj}$(op1): $\dot\neg$($\dot\neg$($\forall_{obj}$(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} |
$\dot\neg$($\forall_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m]))|; A4 @ (fz)[m] ⊳
$\forall_{obj}$(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}))) | $\dot\neg$($\forall_{obj}$(op1): $\dot\neg$($\dot\neg$($\forall_{obj}$(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} |
$\dot\neg$($\forall_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{ph ∈ {ph ∈
P(P(Union({N, Q}))) | $\dot\neg$($\forall_{obj}$(op1): $\dot\neg$($\dot\neg$($\forall_{obj}$(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} |
$\dot\neg$($\forall_{obj}$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}))) | $\dot\neg$($\forall_{obj}$(op1): $\dot\neg$($\dot\neg$($\forall_{obj}$(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} |
$\dot\neg$($\forall_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{ph ∈ {ph ∈
P(P(Union({N, Q}))) | $\dot\neg$($\forall_{obj}$(op1): $\dot\neg$($\dot\neg$($\forall_{obj}$(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} |
$\dot\neg$($\forall_{obj}$m: $\dot\neg$(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m]))| <= (ϵ) ⇒
$\dot\neg$($\dot\neg$(|({ph ∈ {ph ∈ P(P(Union({N, Q}))) |
$\dot\neg$($\forall_{obj}$(op1): $\dot\neg$($\dot\neg$($\forall_{obj}$(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} | $\dot\neg$($\forall_{obj}$m: $\dot\neg$(e_{Ph} =
{{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−u{ph ∈ {ph ∈
P(P(Union({N, Q}))) | $\dot\neg$($\forall_{obj}$(op1): $\dot\neg$($\dot\neg$($\forall_{obj}$(op2): $\dot\neg$($\dot\neg$($\dot\neg$((op1) ∈ N ⇒

$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \mathrm{Ded} \rhd$
$\forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <= (\underline{(\epsilon)} * \mathrm{rec}\underline{(\mathrm{v1})}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)} * \mathrm{rec}\underline{(\mathrm{v1})}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <=$
$(\underline{(\epsilon)} * \mathrm{rec}\underline{(\mathrm{v1})}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = (\underline{(\epsilon)} * \mathrm{rec}\underline{(\mathrm{v1})}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}\overline{(\mathrm{v2})}\colon \dot{\neg}(|\underline{(\mathrm{fz})}[\overline{(\mathrm{v2})}]| <= \underline{(\mathrm{v1})} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{(\mathrm{fz})}[\overline{(\mathrm{v2})}]| = \underline{(\mathrm{v1})})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(0 <= (\underline{(\epsilon)} * \mathrm{rec}\underline{(\mathrm{v1})}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\underline{(\epsilon)} * \mathrm{rec}\underline{(\mathrm{v1})}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| <= (\underline{(\epsilon)} * \mathrm{rec}\underline{(\mathrm{v1})}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = (\underline{(\epsilon)} * \mathrm{rec}\underline{(\mathrm{v1})}))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\overline{(\mathrm{v2})}\colon \dot{\neg}(|\underline{(\mathrm{fz})}[\overline{(\mathrm{v2})}]| <= \underline{(\mathrm{v1})} \Rightarrow \dot{\neg}(\dot{\neg}(|\underline{(\mathrm{fz})}[\overline{(\mathrm{v2})}]| = \underline{(\mathrm{v1})})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))| <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] * \underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]))| =$
$\underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SameFmultiplication} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$

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

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

$\dot{\neg}(\dot{\neg}(|((\overline{fx})[\underline{m}] + (-u(\overline{fy})[\underline{m}]))| = ((\overline{\epsilon}) * rec(v1)))n)n)n \Rightarrow \forall_{obj}(\overline{v2}): \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{n} <= \underline{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}, ((\overline{fx})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\underline{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}(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}, ((\overline{fy})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\underline{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}, ((\overline{fx})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\underline{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}(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}, ((\overline{fy})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\underline{m}]))| = (\overline{\epsilon}))n)n)n; ExistMP2 \rhd \forall_{obj}\underline{m}: \dot{\neg}(0 <= ((\overline{\epsilon}) * rec(\overline{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((\overline{\epsilon}) * rec(\overline{v1})))n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow \dot{\neg}(|((\overline{fx})[\underline{m}] + (-u(\overline{fy})[\underline{m}]))| <= ((\overline{\epsilon}) * rec(\overline{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(|((\overline{fx})[\underline{m}] + (-u(\overline{fy})[\underline{m}]))| = ((\overline{\epsilon}) * rec(\overline{v1})))n)n)n \Rightarrow \forall_{obj}(\overline{v2}): \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{n} <= \underline{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}, ((\overline{fx})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\underline{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}(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}, ((\overline{fy})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\underline{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}, ((\overline{fx})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\underline{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}(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}, ((\overline{fy})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\underline{m}]))| = (\overline{\epsilon}))n)n)n \rhd \dot{\neg}(\forall_{obj}\underline{n}: \dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(0 <= ((\overline{\epsilon}) * rec(\overline{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(0 = ((\overline{\epsilon}) * rec(\overline{v1})))n)n)n \Rightarrow \underline{n} <= \underline{m} \Rightarrow \dot{\neg}(|((\overline{fx})[\underline{m}] + (-u(\overline{fy})[\underline{m}]))| <= ((\overline{\epsilon}) * rec(\overline{v1})) \Rightarrow \dot{\neg}(\dot{\neg}(|((\overline{fx})[\underline{m}] + (-u(\overline{fy})[\underline{m}]))| = ((\overline{\epsilon}) * rec(\overline{v1})))n)n)n)n)n \rhd \dot{\neg}(\forall_{obj}(\overline{v1}): \dot{\neg}(\forall_{obj}(\overline{v2}): \dot{\neg}(|(\overline{fz})[(\overline{v2})]| <= (\overline{v1}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\overline{fz})[(\overline{v2})]| = (\overline{v1}))n)n)n)n)n \gg \dot{\neg}(0 <= (\overline{\epsilon}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\overline{\epsilon}))n)n)n \Rightarrow \underline{n} <= \underline{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}, ((\overline{fx})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\underline{m}] + (-u\{ph \in \{ph \in$

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

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

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

$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}]))| =$
$\overline{(\epsilon)})n)n)n)n)n; \mathrm{Repetition} \rhd \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{n}\colon \dot\neg(\forall_{obj}\overline{m}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{n} <= \overline{m} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}]))| =$
$\overline{(\epsilon)})n)n)n)n)n \gg \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{n}\colon \dot\neg(\forall_{obj}\overline{m}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{n} <= \overline{m} \Rightarrow \dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}\colon \dot\neg(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\overline{m}]))| =$
$\overline{(\epsilon)})n)n)n)n)n], p_0, c)]$
$[EqMultiplication(R) \overset{stmt}{\rightarrow} SystemQ \vdash \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \forall\underline{(fz)}\colon \{ph \in P(\{ph \in$
$P(\{ph \in P(P(Union(\{N, Q\})))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in$
$N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in f_{Ph} \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in f_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in f_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot\neg(\forall_{obj}\overline{(s2)}\colon \dot\neg(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$

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

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

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

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

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

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

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

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

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

$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((\overline{fx})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((\overline{fx})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{Ph}[\overline{m}]))| = \overline{(\epsilon)})n)n)n)n)n\} =$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) | \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) | \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{n}: \dot{\neg}(\forall_{obj}\overline{m}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n \Rightarrow$
$\overline{n} <= \overline{m} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((\overline{fy})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{Ph}[\overline{m}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((\overline{fy})[\underline{m}] * (\overline{fz})[\underline{m}])\}\})n)n\}[\overline{m}] + (-\mathsf{ud}_{Ph}[\overline{m}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}\rceil, p_0, \mathsf{c})]$

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

$[x * 0 = 0(F) \overset{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil SystemQ \vdash \forall\underline{m}: \forall\underline{(fx)}: TimesF \gg \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} |$
$\dot{\neg}(\forall_{obj}\underline{m}: \dot{\neg}(\mathsf{e}_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, ((\underline{fx})[\underline{m}] * \{ph \in \{ph \in P(P(Union(\{N, Q\}))) |$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} | \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}])\}\})n)n\}[\underline{m}] = ((\underline{fx})[\underline{m}] * \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) | \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$

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

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

$\dot{-}(\forall_{obj}\overline{(crs1)}\colon \dot{-}(\mathsf{c}_{Ph} = \{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},0\}\})n)n\}\rceil, p_0, \mathsf{c})]$

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

$[x * 0 = 0(R) \overset{proof}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil SystemQ \vdash \forall\underline{(fx)}\colon x * 0 = 0(F) \gg \{ph \in \{ph \in$

$P(P(\text{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\text{obj}}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{\text{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\text{fx})}[\underline{\mathsf{m}}] * \{\text{ph} \in \{\text{ph} \in P(P(\text{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow \dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\text{obj}}\overline{(\text{crs1})}: \dot\neg(\mathsf{c}_{\text{Ph}} =$
$\{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\} = \{\text{ph} \in \{\text{ph} \in$
$P(P(\text{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\text{obj}}\overline{(\text{crs1})}: \dot\neg(\mathsf{c}_{\text{Ph}} =$
$\{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})n)n\}; \text{lemma} =\text{f to sameF} \rhd \{\text{ph} \in \{\text{ph} \in$
$P(P(\text{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\text{obj}}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{\text{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\text{fx})}[\underline{\mathsf{m}}] * \{\text{ph} \in \{\text{ph} \in P(P(\text{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow \dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\text{obj}}\overline{(\text{crs1})}: \dot\neg(\mathsf{c}_{\text{Ph}} =$
$\{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\} = \{\text{ph} \in \{\text{ph} \in$
$P(P(\text{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\text{obj}}\overline{(\text{crs1})}: \dot\neg(\mathsf{c}_{\text{Ph}} = \{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})n)n\} \gg$
$\forall_{\text{obj}}\overline{(\epsilon)}: \dot\neg(\forall_{\text{obj}}\overline{\mathsf{n}}: \dot\neg(\forall_{\text{obj}}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot\neg(|(\{\text{ph} \in \{\text{ph} \in P(P(\text{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow \dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\text{obj}}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{\text{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\text{fx})}[\underline{\mathsf{m}}] * \{\text{ph} \in \{\text{ph} \in P(P(\text{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow \dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\text{obj}}\overline{(\text{crs1})}: \dot\neg(\mathsf{c}_{\text{Ph}} =$
$\{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\text{u}\{\text{ph} \in \{\text{ph} \in$
$P(P(\text{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\text{obj}}\overline{(\text{crs1})}: \dot\neg(\mathsf{c}_{\text{Ph}} = \{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\{\text{ph} \in \{\text{ph} \in P(P(\text{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow \dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\text{obj}}\underline{\mathsf{m}}: \dot\neg(\mathsf{e}_{\text{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\text{fx})}[\underline{\mathsf{m}}] * \{\text{ph} \in \{\text{ph} \in P(P(\text{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow \dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{\text{obj}}\overline{(\text{crs1})}: \dot\neg(\mathsf{c}_{\text{Ph}} =$
$\{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})n)n\}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\text{u}\{\text{ph} \in \{\text{ph} \in$
$P(P(\text{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{\text{obj}}\overline{(\text{op1})}: \dot\neg(\dot\neg(\forall_{\text{obj}}\overline{(\text{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\text{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\text{op2})} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{\text{Ph}} = \{\{\overline{(\text{op1})}, \overline{(\text{op1})}\}, \{\overline{(\text{op1})}, \overline{(\text{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{\text{obj}}\overline{(\text{crs1})}: \dot\neg(\mathsf{c}_{\text{Ph}} = \{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})n)n\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n; \text{To} == \rhd\forall_{\text{obj}}\overline{(\epsilon)}: \dot\neg(\forall_{\text{obj}}\overline{\mathsf{n}}: \dot\neg(\forall_{\text{obj}}\overline{\mathsf{m}}: \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\{\text{ph} \in \{\text{ph} \in P(P(\text{Union}(\{N, Q\}))) \mid$

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

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

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

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

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

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

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

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

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

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

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

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

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

$[\mathrm{LessMultiplication(F)(Helper2)} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{x}}\colon \forall\underline{\mathsf{y}}\colon \forall\underline{\mathsf{z}}\colon \forall\underline{\mathsf{u}}\colon \forall\underline{\mathsf{v}}\colon \dot\neg(0 <= \underline{\mathsf{u}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{u}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(0 <= \underline{\mathsf{v}} \Rightarrow \dot\neg(\dot\neg(0 =$
$\underline{\mathsf{v}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{x}} <= (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}})) \vdash 0 <= (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{v}})) \vdash \mathrm{negativeToLeft(Leq)} \rhd \underline{\mathsf{x}} <=$
$(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}})) \gg (\underline{\mathsf{x}} + \underline{\mathsf{u}}) <= \underline{\mathsf{y}}; \mathrm{plusCommutativity} \gg (\underline{\mathsf{x}} + \underline{\mathsf{u}}) =$
$(\underline{\mathsf{u}} + \underline{\mathsf{x}}); \mathrm{subLeqLeft} \rhd (\underline{\mathsf{x}} + \underline{\mathsf{u}}) = (\underline{\mathsf{u}} + \underline{\mathsf{x}}) \rhd (\underline{\mathsf{x}} + \underline{\mathsf{u}}) <= \underline{\mathsf{y}} \gg (\underline{\mathsf{u}} + \underline{\mathsf{x}}) <=$
$\underline{\mathsf{y}}; \mathrm{PositiveToRight(Leq)} \rhd (\underline{\mathsf{u}} + \underline{\mathsf{x}}) <= \underline{\mathsf{y}} \gg \underline{\mathsf{u}} <=$
$(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})); \mathrm{negativeToLeft(Leq)(1term)} \rhd 0 <= (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{v}})) \gg \underline{\mathsf{v}} <=$
$\underline{\mathsf{z}}; \mathrm{LessLeq} \rhd \dot\neg(0 <= \underline{\mathsf{u}} \Rightarrow \dot\neg(\dot\neg(0 = \underline{\mathsf{u}})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{\mathsf{u}}; \mathrm{LessLeq} \rhd \dot\neg(0 <= \underline{\mathsf{v}} \Rightarrow$
$\dot\neg(\dot\neg(0 = \underline{\mathsf{v}})\mathrm{n})\mathrm{n})\mathrm{n} \gg 0 <= \underline{\mathsf{v}}; \mathrm{MultiplyEquations(Leq)} \rhd 0 <= \underline{\mathsf{u}} \rhd 0 <= \underline{\mathsf{v}} \rhd \underline{\mathsf{u}} <=$
$(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})) \rhd \underline{\mathsf{v}} <= \underline{\mathsf{z}} \gg (\underline{\mathsf{u}} * \underline{\mathsf{v}}) <= ((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})) * \underline{\mathsf{z}}); \mathrm{timesCommutativity} \gg$
$((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})) * \underline{\mathsf{z}}) = (\underline{\mathsf{z}} * (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))); \mathrm{DistributionLeft} \gg (\underline{\mathsf{z}} * (\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))) =$
$((\underline{\mathsf{y}} * \underline{\mathsf{z}}) + ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{z}})); -\mathrm{x} * \mathrm{y} = -(\mathrm{x} * \mathrm{y}) \gg ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{z}}) =$
$(-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{z}})); \mathrm{lemma\ eqAdditionLeft} \rhd ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{z}}) = (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{z}})) \gg$
$((\underline{\mathsf{y}} * \underline{\mathsf{z}}) + ((-\mathrm{u}\underline{\mathsf{x}}) * \underline{\mathsf{z}})) = ((\underline{\mathsf{y}} * \underline{\mathsf{z}}) + (-\mathrm{u}(\underline{\mathsf{x}} * \underline{\mathsf{z}}))); \mathrm{eqTransitivity4} \rhd ((\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}})) * \underline{\mathsf{z}}) =$

(z∗(y+(−ux)))▷(z∗(y+(−ux))) = ((y∗z)+((−ux)∗z))▷((y∗z)+((−ux)∗z)) = ((y∗z)+(−u(x∗z))) ≫ ((y+(−ux))∗z) = ((y∗z)+(−u(x∗z))); subLeqRight ▷ ((y+(−ux))∗z) = ((y∗z)+(−u(x∗z)))▷(u∗v) <= ((y+(−ux))∗z) ≫ (u∗v) <= ((y∗z)+(−u(x∗z))); negativeToLeft(Leq) ▷ (u∗v) <= ((y∗z)+(−u(x∗z))) ≫ ((u∗v)+(x∗z)) <= (y∗z); plusCommutativity ≫ ((u∗v)+(x∗z)) = ((x∗z)+(u∗v)); subLeqLeft▷((u∗v)+(x∗z)) = ((x∗z)+(u∗v))▷((u∗v)+(x∗z)) <= (y∗z) ≫ ((x∗z)+(u∗v)) <= (y∗z); PositiveToRight(Leq)▷((x∗z)+(u∗v)) <= (y∗z) ≫ (x∗z) <= ((y∗z)+(−u(u∗v)))⌉, p_0, c)]

[LessMultiplication(F)(Helper) $\overset{\text{stmt}}{\to}$ SystemQ ⊢ ∀m: ∀n: ∀$(\epsilon)_1$: ∀(ϵ2): ∀(fx): ∀(fy): ∀(fz): $\forall_{\text{obj}}$m: ∸(∸(0 <= $(\epsilon)_1$ ⇒ ∸(∸(0 = $(\epsilon)_1$)n)n)n ⇒ ∸(n <= m ⇒ (fx)[m] <= ((fy)[m] + (−u$(\epsilon)_1$)))n)n ⇒ $\forall_{\text{obj}}$m: ∸(∸(0 <= (ϵ2) ⇒ ∸(∸(0 = (ϵ2))n)n)n ⇒ ∸(n <= m ⇒ {ph ∈ {ph ∈ P(P(Union({N, Q}))) | ∸($\forall_{\text{obj}}$(op1): ∸(∸($\forall_{\text{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{\text{obj}}$(crs1): ∸(c_{Ph} = {{(crs1), (crs1)}, {(crs1), 0}})n)n}[m] <= ((fz)[m] + (−u(ϵ2))))n)n ⇒ ∸(∸(0 <= ($(\epsilon)_1$ ∗ (ϵ2)) ⇒ ∸(∸(0 = ($(\epsilon)_1$ ∗ (ϵ2)))n)n)n ⇒ ∸(n <= m ⇒ {ph ∈ {ph ∈ P(P(Union({N, Q}))) | ∸($\forall_{\text{obj}}$(op1): ∸(∸($\forall_{\text{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{\text{obj}}$m: ∸(e_{Ph} = {{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] <= ({ph ∈ {ph ∈ P(P(Union({N, Q}))) | ∸($\forall_{\text{obj}}$(op1): ∸(∸($\forall_{\text{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{\text{obj}}$m: ∸(e_{Ph} = {{m, m}, {m, ((fy)[m] ∗ (fz)[m])}})n)n}[m] + (−u(($(\epsilon)_1$ ∗ (ϵ2)))))n)n]

[LessMultiplication(F)(Helper) $\overset{\text{proof}}{\to}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢ ∀m: ∀n: ∀$(\epsilon)_1$: ∀(ϵ2): ∀(fx): ∀(fy): ∀(fz): $\forall_{\text{obj}}$m: ∸(∸(0 <= $(\epsilon)_1$ ⇒ ∸(∸(0 = $(\epsilon)_1$)n)n)n ⇒ ∸(n <= m ⇒ (fx)[m] <= ((fy)[m] + (−u$(\epsilon)_1$)))n)n ⊢ $\forall_{\text{obj}}$m: ∸(∸(0 <= (ϵ2) ⇒ ∸(∸(0 = (ϵ2))n)n)n ⇒ ∸(n <= m ⇒ {ph ∈ {ph ∈ P(P(Union({N, Q}))) | ∸($\forall_{\text{obj}}$(op1): ∸(∸($\forall_{\text{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{\text{obj}}$(crs1): ∸(c_{Ph} = {{(crs1), (crs1)}, {(crs1), 0}})n)n}[m] <= ((fz)[m] + (−u(ϵ2))))n)n ⊢ A4 @ m ▷ $\forall_{\text{obj}}$m: ∸(∸(0 <= $(\epsilon)_1$ ⇒ ∸(∸(0 = $(\epsilon)_1$)n)n)n ⇒ ∸(n <= m ⇒ (fx)[m] <= ((fy)[m] + (−u$(\epsilon)_1$)))n)n ≫ ∸(∸(0 <= $(\epsilon)_1$ ⇒ ∸(∸(0 = $(\epsilon)_1$)n)n)n ⇒ ∸(n <= m ⇒ (fx)[m] <= ((fy)[m] + (−u$(\epsilon)_1$)))n)n; A4 @ m ▷ $\forall_{\text{obj}}$m: ∸(∸(0 <= (ϵ2) ⇒ ∸(∸(0 = (ϵ2))n)n)n ⇒ ∸(n <= m ⇒ {ph ∈ {ph ∈ P(P(Union({N, Q}))) | ∸($\forall_{\text{obj}}$(op1): ∸(∸($\forall_{\text{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸($\forall_{\text{obj}}$(crs1): ∸(c_{Ph} = {{(crs1), (crs1)}, {(crs1), 0}})n)n}[m] <= ((fz)[m] + (−u(ϵ2))))n)n ≫ ∸(∸(0 <= (ϵ2) ⇒ ∸(∸(0 = (ϵ2))n)n)n ⇒ ∸(n <= m ⇒ {ph ∈ {ph ∈ P(P(Union({N, Q}))) | ∸($\forall_{\text{obj}}$(op1): ∸(∸($\forall_{\text{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon2)})))\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})))\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$\overline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon2)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\overline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon2)})))\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$\overline{(\epsilon2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon2)})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{PositiveFactors} \rhd \dot{\neg}(0 <= \overline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(0 <= \overline{(\epsilon2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon2)})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <= (\overline{(\epsilon)_1} * \overline{(\epsilon2)}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)_1} *$
$\overline{(\epsilon2)}))\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\overline{(\epsilon)_1}\colon \forall\overline{(\epsilon2)}\colon \forall\overline{(\mathrm{fx})}\colon \forall\overline{(\mathrm{fy})}\colon \forall\overline{(\mathrm{fz})}\colon \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)_1} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})))\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon2)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon2)})))\mathrm{n})\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash \mathrm{A4} @ \underline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)_1} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})))\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})))\mathrm{n})\mathrm{n}; \mathrm{A4} @ \underline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon2)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\overline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon2)})))\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon2)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon2)})))\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})))\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$\overline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon2)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] <= (\overline{(\mathrm{fz})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon2)})))\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$\overline{(\epsilon2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon2)})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)_1} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)_1})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})))\mathrm{n})\mathrm{n} \gg \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= (\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})); \mathrm{MP} \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})) \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \gg \overline{(\mathrm{fx})}[\underline{\mathsf{m}}] <=$
$(\overline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)_1})); \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon2)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}{:}\, \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}] <= ((\underline{(fz)}[\underline{m}] + (-u\underline{(\epsilon 2)})))n)n \gg \underline{n} <=$
$\underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}{:}\, \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}] <= ((\underline{(fz)}[\underline{m}] + (-u\underline{(\epsilon 2)})); MP \rhd \underline{n} <=$
$\underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}{:}\, \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}] <= ((\underline{(fz)}[\underline{m}] + (-u\underline{(\epsilon 2)})) \rhd \underline{n} <= \underline{m} \gg$
$\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}{:}\, \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}] <= ((\underline{(fz)}[\underline{m}] + (-u\underline{(\epsilon 2)})); NatType \gg \underline{m} \in$
$N; 0f \rhd \underline{m} \in N \gg \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}{:}\, \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}] = 0; subLeqLeft \rhd \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\overline{(crs1)}{:}\, \dot{\neg}(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}] = 0 \rhd \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\overline{(crs1)}{:}\, \dot{\neg}(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\underline{m}] <=$
$((\underline{(fz)}[\underline{m}] + (-u\underline{(\epsilon 2)})) \gg 0 <=$
$((\underline{(fz)}[\underline{m}] + (-u\underline{(\epsilon 2)})); LessMultiplication(F)(Helper2) \rhd \dot{\neg}(0 <= \underline{(\epsilon)_1} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)_1})n)n)n \rhd \dot{\neg}(0 <= \underline{(\epsilon 2)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon 2)})n)n)n \rhd \underline{(fx)}[\underline{m}] <=$
$((\underline{(fy)}[\underline{m}] + (-u\underline{(\epsilon)_1})) \rhd 0 <= ((\underline{(fz)}[\underline{m}] + (-u\underline{(\epsilon 2)})) \gg (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}]) <=$
$(((\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}]) + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))); lemma\ timesF(Sym) \gg$
$(\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}]) = \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}{:}\, \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}]; subLeqLeft \rhd (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}]) =$
$\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}{:}\, \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] \rhd (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}]) <=$
$(((\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}]) + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))) \gg \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}{:}\, \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}{:}\, \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}{:}\, \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\underline{(fx)}[\underline{m}] * \underline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <=$
$(((\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}]) + (-u(\underline{(\epsilon)_1} * \underline{(\epsilon 2)}))); lemma\ timesF(Sym) \gg$
$(\underline{(fy)}[\underline{m}] * \underline{(fz)}[\underline{m}]) = \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$

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

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

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

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

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

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

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

$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fy)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u(\overline{(\epsilon)_1} *$
$\overline{(\epsilon 2)}))))n)n; IntroExist\ @\ \underline{n} \rhd \forall_{obj}\underline{m}\colon \dot{\neg}(\dot{\neg}(0 <= (\overline{(\epsilon)_1} * \overline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\overline{(\epsilon)_1} * \overline{(\epsilon 2)}))n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fy)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u(\overline{(\epsilon)_1} *$
$\overline{(\epsilon 2)}))))n)n \gg \dot{\neg}(\forall_{obj}\underline{n}\colon \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(\dot{\neg}(0 <= (\overline{(\epsilon)_1} * \overline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\overline{(\epsilon)_1} * \overline{(\epsilon 2)}))n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fy)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u(\overline{(\epsilon)_1} *$
$\overline{(\epsilon 2)}))))n)n)n)n; IntroExist\ @(\overline{(\epsilon)_1} * \overline{(\epsilon 2)}) \rhd \dot{\neg}(\forall_{obj}\underline{n}\colon \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(\dot{\neg}(0 <=$
$(\overline{(\epsilon)_1} * \overline{(\epsilon 2)}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\overline{(\epsilon)_1} * \overline{(\epsilon 2)}))n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fy)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] + (-u(\overline{(\epsilon)_1} *$
$\overline{(\epsilon 2)}))))n)n)n)n \gg \dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\underline{n}\colon \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fy)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] +$
$(-u(\overline{(\epsilon)})))n)n)n)n)n)n; Ded \rhd \dot{\neg}(\forall_{obj}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\underline{n}\colon \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{m}\colon \dot{\neg}(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(fx)}[\underline{m}] * \overline{(fz)}[\underline{m}])\}\})n)n\}[\underline{m}] <= (\{ph \in \{ph \in$
$P(P(Union(\{N,Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(a_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$

$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\underline{\mathsf{m}}]+$
$(-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n\gg\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})n)n)n\Rightarrow\dot{\neg}(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]<=(\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+$
$(-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n;\mathrm{Repetition}\rhd\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(0<=$
$\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})n)n)n\Rightarrow\dot{\neg}(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]<=(\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+$
$(-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n\gg\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})n)n)n\Rightarrow\dot{\neg}(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]<=(\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n\rceil,\mathrm{p}_0,\mathsf{c})]$
$[\mathrm{LessMultiplication}(\mathrm{R})\overset{\mathrm{stmt}}{\rightarrow}\mathrm{SystemQ}\vdash$
$\forall\underline{(\mathrm{fx})}\colon\forall\underline{(\mathrm{fy})}\colon\forall\underline{(\mathrm{fz})}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=$
$\overline{(\epsilon)})n)n)n\Rightarrow\dot{\neg}(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})n)n\}[\overline{\mathsf{m}}]<=(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}]+(-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n\vdash$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]<=(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]+(-\mathrm{u}\overline{(\epsilon)})))n)n)n)n)n)n\vdash$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{\neg}(\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow\dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\underline{(\mathrm{fz})}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]<=(\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})n)n\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\}\mid$

$\dot\neg(\forall_{\text{obj}}\underline{\mathsf{m}}\colon\dot\neg(\mathsf{e}_{\text{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\text{fy})}[\underline{\mathsf{m}}] * \underline{(\text{fz})}[\underline{\mathsf{m}}])\}\})\text{n})\text{n}\}[\overline{\mathsf{m}}] + (-\text{u}\overline{(\epsilon)}))))\text{n})\text{n})\text{n})\text{n})\text{n})\text{n}]$

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

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

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

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

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

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

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

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

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

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

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

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

∸(∸(|({ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(aPh = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀obj m: ∸(ePh =
{{m, m}, {m, ((fz)[m] ∗ (fy)[m])}})n)n}[m] + (−udPh[m]))| =
(ϵ))n)n)n)n)n}; == Transitivity ▷ {ph ∈ P({ph ∈ P({ph ∈
P(P(Union({N, Q}))) | ∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(aPh = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n}) |
∸(∸(∀obj(r1): (r1) ∈ fPh ⇒ ∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⇒
∸(∀obj(f1): ∀obj(f2): ∀obj(f3): ∀obj(f4): {{(f1), (f1)}, {(f1), (f2)}} ∈ fPh ⇒
{{(f3), (f3)}, {(f3), (f4)}} ∈ fPh ⇒ (f1) = (f3) ⇒ (f2) = (f4))n)n ⇒
∸(∀obj(s1): (s1) ∈ N ⇒ ∸(∀obj(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈
fPh)n)n)n)n}) | ∀obj(ϵ): ∸(∀obj n: ∸(∀obj m: ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒
n <= m ⇒ ∸(|({ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(aPh = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀obj m: ∸(ePh =
{{m, m}, {m, ((fz)[m] ∗ (fx)[m])}})n)n}[m] + (−udPh[m]))| <= (ϵ) ⇒
∸(∸(|({ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(aPh = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀obj m: ∸(ePh =
{{m, m}, {m, ((fz)[m] ∗ (fx)[m])}})n)n}[m] + (−udPh[m]))| = (ϵ))n)n)n)n)n} =
{ph ∈ P({ph ∈ P({ph ∈ P(P(Union({N, Q}))) |
∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(aPh = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n}) | ∸(∸(∀obj(r1): (r1) ∈
fPh ⇒ ∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⇒
∸(∀obj(f1): ∀obj(f2): ∀obj(f3): ∀obj(f4): {{(f1), (f1)}, {(f1), (f2)}} ∈ fPh ⇒
{{(f3), (f3)}, {(f3), (f4)}} ∈ fPh ⇒ (f1) = (f3) ⇒ (f2) = (f4))n)n ⇒
∸(∀obj(s1): (s1) ∈ N ⇒ ∸(∀obj(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈
fPh)n)n)n)n}) | ∀obj(ϵ): ∸(∀obj n: ∸(∀obj m: ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒
n <= m ⇒ ∸(|({ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(aPh = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀obj m: ∸(ePh =
{{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−udPh[m]))| <= (ϵ) ⇒
∸(∸(|({ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(aPh = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀obj m: ∸(ePh =
{{m, m}, {m, ((fx)[m] ∗ (fz)[m])}})n)n}[m] + (−udPh[m]))| =
(ϵ))n)n)n)n)n} ▷ {ph ∈ P({ph ∈ P({ph ∈ P(P(Union({N, Q}))) |
∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(aPh = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n}) | ∸(∸(∀obj(r1): (r1) ∈
fPh ⇒ ∸(∀obj(op1): ∸(∸(∀obj(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸((r1) = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n ⇒

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

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

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

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fz})[\underline{\mathsf{m}}] * (\mathrm{fy})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fz})[\underline{\mathsf{m}}] * (\mathrm{fx})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fz})[\underline{\mathsf{m}}] * (\mathrm{fx})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} =$
$\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fz})[\underline{\mathsf{m}}] * (\mathrm{fy})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\mathrm{fz})[\underline{\mathsf{m}}] * (\mathrm{fy})[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\rceil, \mathrm{p}_0, \mathsf{c})]$
$[\mathrm{LeqMultiplication}(\mathrm{R}) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \forall\underline{(\mathrm{fz})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] <= (\underline{(\mathrm{fz})}[\overline{\mathsf{m}}] + (-\mathsf{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}=$
$\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{-}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon\overline{(\mathrm{r1})}\in$
$\mathsf{f}_{\mathrm{Ph}}\Rightarrow\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{-}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\overline{(\mathrm{r1})}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon\{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\overline{(\mathrm{f1})}=\overline{(\mathrm{f3})}\Rightarrow\overline{(\mathrm{f2})}=\overline{(\mathrm{f4})})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon\overline{(\mathrm{s1})}\in\mathrm{N}\Rightarrow\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon\dot{-}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{-}(0<=\overline{(\epsilon)}\Rightarrow\dot{-}(\dot{-}(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot{-}(|(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{-}(\dot{-}(|(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n}\Rightarrow\dot{-}(\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon\overline{(\mathrm{r1})}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{-}(\overline{(\mathrm{r1})}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon\{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\overline{(\mathrm{f1})}=\overline{(\mathrm{f3})}\Rightarrow\overline{(\mathrm{f2})}=\overline{(\mathrm{f4})})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon\overline{(\mathrm{s1})}\in\mathrm{N}\Rightarrow\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon\dot{-}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{-}(0<=\overline{(\epsilon)}\Rightarrow\dot{-}(\dot{-}(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{-}(\dot{-}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}=\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon\overline{(\mathrm{r1})}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{-}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{-}(\overline{(\mathrm{r1})}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon\forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon\{\{\overline{(\mathrm{f1})},\overline{(\mathrm{f1})}\},\{\overline{(\mathrm{f1})},\overline{(\mathrm{f2})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(\mathrm{f3})},\overline{(\mathrm{f3})}\},\{\overline{(\mathrm{f3})},\overline{(\mathrm{f4})}\}\}\in\mathsf{f}_{\mathrm{Ph}}\Rightarrow\overline{(\mathrm{f1})}=\overline{(\mathrm{f3})}\Rightarrow\overline{(\mathrm{f2})}=\overline{(\mathrm{f4})})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon\overline{(\mathrm{s1})}\in\mathrm{N}\Rightarrow\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon\dot{-}(\{\{\overline{(\mathrm{s1})},\overline{(\mathrm{s1})}\},\{\overline{(\mathrm{s1})},\overline{(\mathrm{s2})}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mid\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{-}(0<=\overline{(\epsilon)}\Rightarrow\dot{-}(\dot{-}(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot{-}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{-}(\dot{-}(|(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n}\Rightarrow$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{-}(\dot{-}(0<=\overline{(\epsilon)}\Rightarrow\dot{-}(\dot{-}(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{-}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot{-}(\mathsf{c}_{\mathrm{Ph}}=$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]<=(\underline{(\mathrm{fz})}[\overline{\mathsf{m}}]+(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon\dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon\dot{-}(\dot{-}(0<=\overline{(\epsilon)}\Rightarrow\dot{-}(\dot{-}(0=\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{-}(\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\underline{(\mathrm{fx})}[\overline{\mathsf{m}}]<=(\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]+$
$(-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n};\mathrm{From3Disjuncts}\rhd\dot{-}(\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in\mathrm{P}(\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{-}(\dot{-}(\dot{-}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$

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

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

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

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

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

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

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

$[\mathrm{Cauchy}(2)(\mathrm{Helper}) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall(\mathrm{v1})\colon \forall(\mathrm{v2})\colon \forall(\mathrm{n1})\colon \forall(\mathrm{n2})\colon \forall(\epsilon)\colon \forall(\mathrm{fx})\colon \forall(\mathrm{fy})\colon \forall_{\mathrm{obj}}(\mathrm{v1})\colon \forall_{\mathrm{obj}}(\mathrm{v2})\colon \dot{\neg}\,(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow (\mathrm{n1}) <= (\mathrm{v1}) \Rightarrow (\mathrm{n1}) <= (\mathrm{v2}) \Rightarrow$
$\dot{\neg}\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}(\mathrm{v1})\colon \forall_{\mathrm{obj}}(\mathrm{v2})\colon \dot{\neg}\,(0 <= (\epsilon) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow (\mathrm{n2}) <=$
$(\mathrm{v1}) \Rightarrow (\mathrm{n2}) <= (\mathrm{v2}) \Rightarrow \dot{\neg}\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(0 <= (\epsilon) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= (\mathrm{v1}) \Rightarrow \mathrm{if}((\mathrm{n2}) <=$
$(\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= (\mathrm{v2}) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\mathrm{fy})[(\mathrm{v1})] +$
$(-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{Cauchy}(2)(\mathrm{Helper}) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall(\mathrm{v1})\colon \forall(\mathrm{v2})\colon \forall(\mathrm{n1})\colon \forall(\mathrm{n2})\colon \forall(\epsilon)\colon \forall(\mathrm{fx})\colon \forall(\mathrm{fy})\colon \forall_{\mathrm{obj}}(\mathrm{v1})\colon \forall_{\mathrm{obj}}(\mathrm{v2})\colon \dot{\neg}\,(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow (\mathrm{n1}) <= (\mathrm{v1}) \Rightarrow (\mathrm{n1}) <= (\mathrm{v2}) \Rightarrow$
$\dot{\neg}\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}}(\mathrm{v1})\colon \forall_{\mathrm{obj}}(\mathrm{v2})\colon \dot{\neg}\,(0 <= (\epsilon) \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow (\mathrm{n2}) <=$
$(\mathrm{v1}) \Rightarrow (\mathrm{n2}) <= (\mathrm{v2}) \Rightarrow \dot{\neg}\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow$

¬̇(¬̇(|((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) ⊢ MaxLeq(1) ≫ (n1) <= if((n2) <= (n1), (n1), (n2)); leqTransitivity ▷ (n1) <= if((n2) <= (n1), (n1), (n2)) ▷ if((n2) <= (n1), (n1), (n2)) <= (v1) ≫ (n1) <= (v1); leqTransitivity ▷ (n1) <= if((n2) <= (n1), (n1), (n2)) ▷ if((n2) <= (n1), (n1), (n2)) <= (v2) ≫ (n1) <= (v2); MaxLeq(2) ≫ (n2) <= if((n2) <= (n1), (n1), (n2)); leqTransitivity ▷ (n2) <= if((n2) <= (n1), (n1), (n2)) ▷ if((n2) <= (n1), (n1), (n2)) <= (v1) ≫ (n2) <= (v1); leqTransitivity ▷ (n2) <= if((n2) <= (n1), (n1), (n2)) ▷ if((n2) <= (n1), (n1), (n2)) <= (v2) ≫ (n2) <= (v2); A4 @ (v1) ▷ $\forall_{\text{obj}}$(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 ≫ $\forall_{\text{obj}}$(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; A4 @ (v2) ▷ $\forall_{\text{obj}}$(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 ≫ ¬̇(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; MP3 ▷ ¬̇(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 ▷ ¬̇(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; A4 @ (v1) ▷ $\forall_{\text{obj}}$(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 ≫ $\forall_{\text{obj}}$(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; A4 @ (v2) ▷ $\forall_{\text{obj}}$(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 ⇒ (n2) <= (v1) ⇒ (n2) <= (v2) ⇒ ¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (ε) ⇒ ¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (ε))n)n)n; MP3 ▷ ¬̇(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 ▷ (n2) <= (v1) ▷ (n2) <= (v2) ≫ ¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (ε) ⇒ ¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| = (ε))n)n)n; JoinConjuncts ▷ ¬̇(|((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 ≫ ¬̇(¬̇(|((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; ∀(v1): ∀(v2): ∀(n1): ∀(n2): ∀(ε): ∀(fx): ∀(fy): Ded ▷

$\forall(v1)\colon\forall(v2)\colon\forall(n1)\colon\forall(n2)\colon\forall(\epsilon)\colon\forall(fx)\colon\forall(fy)\colon\forall_{obj}(v1)\colon\forall_{obj}(v2)\colon\dot\neg(0 <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow$
$\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n \vdash \forall_{obj}(v1)\colon\forall_{obj}(v2)\colon\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow (n2) <=$
$(v1) \Rightarrow (n2) <= (v2) \Rightarrow \dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n \vdash \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))n)n)n \vdash \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \vdash \mathrm{if}((n2) <=$
$(n1), (n1), (n2)) <= (v2) \vdash \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] +$
$(-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(\epsilon))n)n)n)n)n \gg \forall_{obj}(v1)\colon\forall_{obj}(v2)\colon\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow$
$(n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow \dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow \forall_{obj}(v1)\colon\forall_{obj}(v2)\colon\dot\neg(0 <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow (n2) <= (v1) \Rightarrow (n2) <= (v2) \Rightarrow \dot\neg(|((fy)[(v1)] +$
$(-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n \Rightarrow$
$\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow \mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v1) \Rightarrow$
$\mathrm{if}((n2) <= (n1), (n1), (n2)) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{Cauchy}(2) \stackrel{stmt}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall(v1)\colon\forall(v2)\colon\forall\underline{\mathsf{n}}\colon\forall(n1)\colon\forall(n2)\colon\forall(\epsilon)\colon\forall(fx)\colon\forall(fy)\colon\forall_{obj}(\epsilon)\colon\dot\neg(\forall_{obj}\underline{\mathsf{n}}\colon\dot\neg(\forall_{obj}(v1)\colon\forall_{obj}(v2$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow \underline{\mathsf{n}} <= (v1) \Rightarrow \underline{\mathsf{n}} <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] +$
$(-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\epsilon))n)n)n \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\epsilon))n)n)n)n)n)n)n]$

$[\mathrm{Cauchy}(2) \stackrel{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall(v1)\colon\forall(v2)\colon\forall\underline{\mathsf{n}}\colon\forall(n1)\colon\forall(n2)\colon\forall(\epsilon)\colon\forall(fx)\colon\forall(fy)\colon \mathrm{Cauchy} \gg$
$\forall_{obj}(\epsilon)\colon\dot\neg(\forall_{obj}(n1)\colon\dot\neg(\forall_{obj}(v1)\colon\forall_{obj}(v2)\colon\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow$
$(n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow \dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n)n)n; \mathrm{A4} @ (\epsilon) \rhd \forall_{obj}(\epsilon)\colon\dot\neg(\forall_{obj}(n1)\colon\dot\neg(\forall_{obj}(v1)\colon\forall_{obj}(v2)\colon\dot\neg(0 <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow$
$\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n)n)n \gg \dot\neg(\forall_{obj}(n1)\colon\dot\neg(\forall_{obj}(v1)\colon\forall_{obj}(v2)\colon\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow$
$\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(\epsilon))n)n)n)n)n; \mathrm{Cauchy} \gg \forall_{obj}(\epsilon)\colon\dot\neg(\forall_{obj}(n2)\colon\dot\neg(\forall_{obj}(v1)\colon\forall_{obj}(v2)\colon\dot\neg(0 <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow (n2) <= (v1) \Rightarrow (n2) <= (v2) \Rightarrow$
$\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(\epsilon))n)n)n)n)n; \mathrm{A4} @ (\epsilon) \rhd \forall_{obj}(\epsilon)\colon\dot\neg(\forall_{obj}(n2)\colon\dot\neg(\forall_{obj}(v1)\colon\forall_{obj}(v2)\colon\dot\neg(0 <=$
$(\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow (n2) <= (v1) \Rightarrow (n2) <= (v2) \Rightarrow$
$\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(\epsilon))n)n)n)n)n \gg \dot\neg(\forall_{obj}(n2)\colon\dot\neg(\forall_{obj}(v1)\colon\forall_{obj}(v2)\colon\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))n)n)n \Rightarrow (n2) <= (v1) \Rightarrow (n2) <= (v2) \Rightarrow$

¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| <= (ε) ⇒ ¬̇(¬̇(|((fy)[(v1)] + (−u(fy)[(v2)]))| =
(ε))n)n)n)n)n; Cauchy(2)(Helper) ≫ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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 ⇒ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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; ExistMP2 ⊳ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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 ⇒ $\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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 ⊳ ¬̇($\forall_{\mathrm{obj}}$(n1): ¬̇($\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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 ⊳ ¬̇($\forall_{\mathrm{obj}}$(n2): ¬̇($\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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 ≫ ¬̇(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; Gen ⊳ ¬̇(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 ≫ $\forall_{\mathrm{obj}}$(v2): ¬̇(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; Gen ⊳ $\forall_{\mathrm{obj}}$(v2): ¬̇(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)]))| =

$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}(\mathrm{v1}){:}\, \forall_{\mathrm{obj}}(\mathrm{v2}){:}\, \dot\neg\,(0 <= (\epsilon) \Rightarrow \dot\neg\,(\dot\neg\,(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= (\mathrm{v1}) \Rightarrow \mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= (\mathrm{v2}) \Rightarrow$
$\dot\neg\,(\dot\neg\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow \dot\neg\,(\dot\neg\,(|((\mathrm{fx})[(\mathrm{v1})] +$
$(-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\dot\neg\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow$
$\dot\neg\,(\dot\neg\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{IntroExist} @ \mathrm{if}((\mathrm{n2}) <=$
$(\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) \rhd \forall_{\mathrm{obj}}(\mathrm{v1}){:}\, \forall_{\mathrm{obj}}(\mathrm{v2}){:}\, \dot\neg\,(0 <= (\epsilon) \Rightarrow \dot\neg\,(\dot\neg\,(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= (\mathrm{v1}) \Rightarrow \mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= (\mathrm{v2}) \Rightarrow$
$\dot\neg\,(\dot\neg\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow \dot\neg\,(\dot\neg\,(|((\mathrm{fx})[(\mathrm{v1})] +$
$(-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\dot\neg\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow$
$\dot\neg\,(\dot\neg\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{n}}{:}\, \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{v1}){:}\, \forall_{\mathrm{obj}}(\mathrm{v2}){:}\, \dot\neg\,(0 <= (\epsilon) \Rightarrow \dot\neg\,(\dot\neg\,(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <=$
$(\mathrm{v1}) \Rightarrow \underline{\mathsf{n}} <= (\mathrm{v2}) \Rightarrow \dot\neg\,(\dot\neg\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow$
$\dot\neg\,(\dot\neg\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg\,(\dot\neg\,(|((\mathrm{fy})[(\mathrm{v1})] +$
$(-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow \dot\neg\,(\dot\neg\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Gen} \rhd \dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{n}}{:}\, \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{v1}){:}\, \forall_{\mathrm{obj}}(\mathrm{v2}){:}\, \dot\neg\,(0 <= (\epsilon) \Rightarrow \dot\neg\,(\dot\neg\,(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= (\mathrm{v1}) \Rightarrow \underline{\mathsf{n}} <= (\mathrm{v2}) \Rightarrow \dot\neg\,(\dot\neg\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <=$
$(\epsilon) \Rightarrow \dot\neg\,(\dot\neg\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\dot\neg\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow$
$\dot\neg\,(\dot\neg\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}(\epsilon){:}\, \dot\neg\,(\forall_{\mathrm{obj}}\underline{\mathsf{n}}{:}\, \dot\neg\,(\forall_{\mathrm{obj}}(\mathrm{v1}){:}\, \forall_{\mathrm{obj}}(\mathrm{v2}){:}\, \dot\neg\,(0 <= (\epsilon) \Rightarrow \dot\neg\,(\dot\neg\,(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\underline{\mathsf{n}} <= (\mathrm{v1}) \Rightarrow \underline{\mathsf{n}} <= (\mathrm{v2}) \Rightarrow \dot\neg\,(\dot\neg\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow$
$\dot\neg\,(\dot\neg\,(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg\,(\dot\neg\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\epsilon) \Rightarrow$
$\dot\neg\,(\dot\neg\,(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

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

$[\mathrm{AddEquations}(\mathrm{LeqLess}) \overset{\mathrm{proof}}{\to} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}{:}\, \forall\underline{\mathsf{y}}{:}\, \forall\underline{\mathsf{z}}{:}\, \forall\underline{\mathsf{u}}{:}\, \underline{\mathsf{x}} <= \underline{\mathsf{y}} \vdash$
$\dot\neg\,(\underline{\mathsf{z}} <= \underline{\mathsf{u}} \Rightarrow \dot\neg\,(\dot\neg\,(\underline{\mathsf{z}} = \underline{\mathsf{u}})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{leqAddition} \rhd \underline{\mathsf{x}} <= \underline{\mathsf{y}} \gg (\underline{\mathsf{x}} + \underline{\mathsf{z}}) <=$
$(\underline{\mathsf{y}} + \underline{\mathsf{z}}); \mathrm{LessAdditionLeft} \rhd \dot\neg\,(\underline{\mathsf{z}} <= \underline{\mathsf{u}} \Rightarrow \dot\neg\,(\dot\neg\,(\underline{\mathsf{z}} = \underline{\mathsf{u}})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg\,((\underline{\mathsf{y}} + \underline{\mathsf{z}}) <=$
$(\underline{\mathsf{y}} + \underline{\mathsf{u}}) \Rightarrow \dot\neg\,(\dot\neg\,((\underline{\mathsf{y}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{leqLessTransitivity} \rhd (\underline{\mathsf{x}} + \underline{\mathsf{z}}) <=$
$(\underline{\mathsf{y}} + \underline{\mathsf{z}}) \rhd \dot\neg\,((\underline{\mathsf{y}} + \underline{\mathsf{z}}) <= (\underline{\mathsf{y}} + \underline{\mathsf{u}}) \Rightarrow \dot\neg\,(\dot\neg\,((\underline{\mathsf{y}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg\,((\underline{\mathsf{x}} + \underline{\mathsf{z}}) <=$
$(\underline{\mathsf{y}} + \underline{\mathsf{u}}) \Rightarrow \dot\neg\,(\dot\neg\,((\underline{\mathsf{x}} + \underline{\mathsf{z}}) = (\underline{\mathsf{y}} + \underline{\mathsf{u}}))\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{insertTwoMiddleTerms}(\mathrm{Numerical}) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{x}}{:}\, \forall\underline{\mathsf{y}}{:}\, \forall\underline{\mathsf{z}}{:}\, \forall\underline{\mathsf{u}}{:}\, |(\underline{\mathsf{x}} + \underline{\mathsf{y}})| <=$

$(((|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+(-u\underline{u}))|)+|(\underline{u}+\underline{y})|)]$

[insertTwoMiddleTerms(Numerical) $\overset{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon\forall\underline{u}\colon$ insertMiddleTerm(Numerical) $\gg |(\underline{x}+\underline{y})| <= (|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+\underline{y})|)$; insertMiddleTerm(Numerical) $\gg |(\underline{z}+\underline{y})| <= (|(\underline{z}+(-u\underline{u}))|+|(\underline{u}+\underline{y})|)$; LeqAdditionLeft $\rhd |(\underline{z}+\underline{y})| <= (|(\underline{z}+(-u\underline{u}))|+|(\underline{u}+\underline{y})|) \gg (|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+\underline{y})|) <= (|(\underline{x}+(-u\underline{z}))|+(|(\underline{z}+(-u\underline{u}))|+|(\underline{u}+\underline{y})|))$; leqTransitivity $\rhd |(\underline{x}+\underline{y})| <= (|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+\underline{y})|) \rhd (|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+\underline{y})|) <= (|(\underline{x}+(-u\underline{z}))|+(|(\underline{z}+(-u\underline{u}))|+|(\underline{u}+\underline{y})|)) \gg |(\underline{x}+\underline{y})| <= (|(\underline{x}+(-u\underline{z}))|+(|(\underline{z}+(-u\underline{u}))|+|(\underline{u}+\underline{y})|))$; plusAssociativity $\gg (((|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+(-u\underline{u}))|)+|(\underline{u}+\underline{y})|) = (|(\underline{x}+(-u\underline{z}))|+(|(\underline{z}+(-u\underline{u}))|+|(\underline{u}+\underline{y})|))$; eqSymmetry $\rhd (((|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+(-u\underline{u}))|)+|(\underline{u}+\underline{y})|) = (|(\underline{x}+(-u\underline{z}))|+(|(\underline{z}+(-u\underline{u}))|+|(\underline{u}+\underline{y})|)) \gg (|(\underline{x}+(-u\underline{z}))|+(|(\underline{z}+(-u\underline{u}))|+|(\underline{u}+\underline{y})|)) = (((|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+(-u\underline{u}))|)+|(\underline{u}+\underline{y})|)$; subLeqRight $\rhd (|(\underline{x}+(-u\underline{z}))|+(|(\underline{z}+(-u\underline{u}))|+|(\underline{u}+\underline{y})|)) = (((|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+(-u\underline{u}))|)+|(\underline{u}+\underline{y})|) \rhd |(\underline{x}+\underline{y})| <= (|(\underline{x}+(-u\underline{z}))|+(|(\underline{z}+(-u\underline{u}))|+|(\underline{u}+\underline{y})|)) \gg |(\underline{x}+\underline{y})| <= (((|(\underline{x}+(-u\underline{z}))|+|(\underline{z}+(-u\underline{u}))|)+|(\underline{u}+\underline{y})|)\rceil, p_0, c)]$

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

[FromPositiveNumerical $\overset{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon 0 <= \underline{x} \vdash \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \vdash$ NonnegativeNumerical $\rhd 0 <= \underline{x} \gg |\underline{x}| = \underline{x}$; SubLessRight $\rhd |\underline{x}| = \underline{x} \rhd \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \gg \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n$; LessNeq $\rhd \dot{\neg}(0 <= \underline{x} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{x})n)n)n \gg \dot{\neg}(0 = \underline{x})n$; NeqSymmetry $\rhd \dot{\neg}(0 = \underline{x})n \gg \dot{\neg}(\underline{x} = 0)n$; $\forall\underline{x}\colon \underline{x} <= 0 \vdash \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \vdash$ lemma nonpositiveNumerical $\rhd \underline{x} <= 0 \gg |\underline{x}| = (-u\underline{x})$; SubLessRight $\rhd |\underline{x}| = (-u\underline{x}) \rhd \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \gg \dot{\neg}(0 <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (-u\underline{x}))n)n)n$; PositiveNegated $\rhd \dot{\neg}(0 <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (-u\underline{x}))n)n)n \gg \dot{\neg}((-u(-u\underline{x})) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-u(-u\underline{x})) = 0)n)n)n$; DoubleMinus $\gg (-u(-u\underline{x})) = \underline{x}$; SubLessLeft $\rhd (-u(-u\underline{x})) = \underline{x} \rhd \dot{\neg}((-u(-u\underline{x})) <= 0 \Rightarrow \dot{\neg}(\dot{\neg}((-u(-u\underline{x})) = 0)n)n)n \gg \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)n)n)n$; LessNeq $\rhd \dot{\neg}(\underline{x} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = 0)n)n)n \gg \dot{\neg}(\underline{x} = 0)n$; $\forall\underline{x}\colon$ Ded $\rhd \forall\underline{x}\colon 0 <= \underline{x} \vdash \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \vdash \dot{\neg}(\underline{x} = 0)n \gg 0 <= \underline{x} \Rightarrow \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \Rightarrow \dot{\neg}(\underline{x} = 0)n$; Ded $\rhd \forall\underline{x}\colon \underline{x} <= 0 \vdash \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \vdash \dot{\neg}(\underline{x} = 0)n \gg \underline{x} <= 0 \Rightarrow \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \Rightarrow \dot{\neg}(\underline{x} = 0)n$; $\dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \vdash$ FromLeqGeq $\rhd 0 <= \underline{x} \Rightarrow \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \Rightarrow \dot{\neg}(\underline{x} = 0)n \rhd \underline{x} <= 0 \Rightarrow \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \Rightarrow \dot{\neg}(\underline{x} = 0)n \gg \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \Rightarrow \dot{\neg}(\underline{x} = 0)n$; MP $\rhd \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \Rightarrow \dot{\neg}(\underline{x} = 0)n \rhd \dot{\neg}(0 <= |\underline{x}| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |\underline{x}|)n)n)n \gg \dot{\neg}(\underline{x} = 0)n\rceil, p_0, c)]$

[NegativeToRight(Neq)(1term) $\overset{\text{stmt}}{\rightarrow}$ SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon \dot{\neg}((\underline{x}+(-u\underline{y})) = 0)n \vdash \dot{\neg}(\underline{x} = \underline{y})n]$

[NegativeToRight(Neq)(1term) $\overset{\text{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil$SystemQ $\vdash \forall\underline{x}\colon\forall\underline{y}\colon \underline{x} = \underline{y} \vdash$ PositiveToLeft(Eq)(1term) $\rhd \underline{x} = \underline{y} \gg (\underline{x}+(-u\underline{y})) = 0$; $\forall\underline{x}\colon\forall\underline{y}\colon$ Ded $\rhd \forall\underline{x}\colon\forall\underline{y}\colon \underline{x} = \underline{y} \vdash (\underline{x}+(-u\underline{y})) = 0 \gg \underline{x} = \underline{y} \Rightarrow (\underline{x}+(-u\underline{y})) = 0$; $\dot{\neg}((\underline{x}+(-u\underline{y})) = 0)n \vdash$

$\mathrm{MT} \rhd \underline{x} = \underline{y} \Rightarrow (\underline{x} + (-u\underline{y})) = 0 \rhd \dot{\neg}((\underline{x} + (-u\underline{y})) = 0)n \gg \dot{\neg}(\underline{x} = \underline{y})n\rceil, p_0, c)]$

$[\mathrm{NonzeroProduct}(2) \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}((\underline{x} * \underline{y}) = 0)n \vdash \dot{\neg}(\underline{y} = 0)n]$

$[\mathrm{NonzeroProduct}(2) \overset{\mathrm{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \underline{y} = 0 \vdash$ lemma eqMultiplicationLeft $\rhd \underline{y} = 0 \gg (\underline{x} * \underline{y}) = (\underline{x} * 0); x * 0 = 0 \gg (\underline{x} * 0) = 0; \mathrm{eqTransitivity} \rhd (\underline{x} * \underline{y}) = (\underline{x} * 0) \rhd (\underline{x} * 0) = 0 \gg (\underline{x} * \underline{y}) = 0; \forall\underline{x}\colon \forall\underline{y}\colon \mathrm{Ded} \rhd \forall\underline{x}\colon \forall\underline{y}\colon \underline{y} = 0 \vdash (\underline{x} * \underline{y}) = 0 \gg \underline{y} = 0 \Rightarrow (\underline{x} * \underline{y}) = 0; \dot{\neg}((\underline{x} * \underline{y}) = 0)n \vdash \mathrm{MT} \rhd \underline{y} = 0 \Rightarrow (\underline{x} * \underline{y}) = 0 \rhd \dot{\neg}((\underline{x} * \underline{y}) = 0)n \gg \dot{\neg}(\underline{y} = 0)n\rceil, p_0, c)]$

$[\mathrm{NonreciprocalToRight(Eq)(1term)} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon (\underline{x} * \underline{y}) = 1 \vdash \underline{x} = \mathrm{rec}\underline{y}]$

$[\mathrm{NonreciprocalToRight(Eq)(1term)} \overset{\mathrm{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon (\underline{x} * \underline{y}) = 1 \vdash \mathrm{eqMultiplication} \rhd (\underline{x} * \underline{y}) = 1 \gg ((\underline{x} * \underline{y}) * \mathrm{rec}\underline{y}) = (1 * \mathrm{rec}\underline{y}); 0 < 1 \gg \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)n)n)n; \mathrm{PositiveNonzero} \rhd \dot{\neg}(0 <= 1 \Rightarrow \dot{\neg}(\dot{\neg}(0 = 1)n)n)n \gg \dot{\neg}(1 = 0)n; \mathrm{eqSymmetry} \rhd (\underline{x} * \underline{y}) = 1 \gg 1 = (\underline{x} * \underline{y}); \mathrm{SubNeqLeft} \rhd 1 = (\underline{x} * \underline{y}) \rhd \dot{\neg}(1 = 0)n \gg \dot{\neg}((\underline{x} * \underline{y}) = 0)n; \mathrm{NonzeroProduct}(2) \rhd \dot{\neg}((\underline{x} * \underline{y}) = 0)n \gg \dot{\neg}(\underline{y} = 0)n; x = x * y * (1/y) \rhd \dot{\neg}(\underline{y} = 0)n \gg \underline{x} = ((\underline{x} * \underline{y}) * \mathrm{rec}\underline{y});$ lemma times1Left $\gg (1 * \mathrm{rec}\underline{y}) = \mathrm{rec}\underline{y}; \mathrm{eqTransitivity4} \rhd \underline{x} = ((\underline{x} * \underline{y}) * \mathrm{rec}\underline{y}) \rhd ((\underline{x} * \underline{y}) * \mathrm{rec}\underline{y}) = (1 * \mathrm{rec}\underline{y}) \rhd (1 * \mathrm{rec}\underline{y}) = \mathrm{rec}\underline{y} \gg \underline{x} = \mathrm{rec}\underline{y}\rceil, p_0, c)]$

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

$[\mathrm{NonreciprocalToRight(Eq)} \overset{\mathrm{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \forall\underline{z}\colon \dot{\neg}(\underline{y} = 0)n \vdash (\underline{x} * \underline{y}) = \underline{z} \vdash \mathrm{eqMultiplication} \rhd (\underline{x} * \underline{y}) = \underline{z} \gg ((\underline{x} * \underline{y}) * \mathrm{rec}\underline{y}) = (\underline{z} * \mathrm{rec}\underline{y}); x = x * y * (1/y) \rhd \dot{\neg}(\underline{y} = 0)n \gg \underline{x} = ((\underline{x} * \underline{y}) * \mathrm{rec}\underline{y}); \mathrm{eqTransitivity} \rhd \underline{x} = ((\underline{x} * \underline{y}) * \mathrm{rec}\underline{y}) \rhd ((\underline{x} * \underline{y}) * \mathrm{rec}\underline{y}) = (\underline{z} * \mathrm{rec}\underline{y}) \gg \underline{x} = (\underline{z} * \mathrm{rec}\underline{y})\rceil, p_0, c)]$

$[\mathrm{NonreciprocalToLeft(Eq)(1term)} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon 1 = (\underline{x} * \underline{y}) \vdash \mathrm{rec}\underline{y} = \underline{x}]$

$[\mathrm{NonreciprocalToLeft(Eq)(1term)} \overset{\mathrm{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon 1 = (\underline{x} * \underline{y}) \vdash \mathrm{eqSymmetry} \rhd 1 = (\underline{x} * \underline{y}) \gg (\underline{x} * \underline{y}) = 1; \mathrm{NonreciprocalToRight(Eq)(1term)} \rhd (\underline{x} * \underline{y}) = 1 \gg \underline{x} = \mathrm{rec}\underline{y}; \mathrm{eqSymmetry} \rhd \underline{x} = \mathrm{rec}\underline{y} \gg \mathrm{rec}\underline{y} = \underline{x}\rceil, p_0, c)]$

$[\mathrm{SameReciprocal} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} = 0)n \vdash \underline{x} = \underline{y} \vdash \mathrm{rec}\underline{x} = \mathrm{rec}\underline{y}]$

$[\mathrm{SameReciprocal} \overset{\mathrm{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} = 0)n \vdash \underline{x} = \underline{y} \vdash$ lemma times1Left $\gg (1 * \underline{x}) = \underline{x}; \mathrm{eqTransitivity} \rhd (1 * \underline{x}) = \underline{x} \rhd \underline{x} = \underline{y} \gg (1 * \underline{x}) = \underline{y}; \mathrm{NonreciprocalToRight(Eq)} \rhd \dot{\neg}(\underline{x} = 0)n \rhd (1 * \underline{x}) = \underline{y} \gg 1 = (\underline{y} * \mathrm{rec}\underline{x}); \mathrm{timesCommutativity} \gg (\underline{y} * \mathrm{rec}\underline{x}) = (\mathrm{rec}\underline{x} * \underline{y}); \mathrm{eqTransitivity} \rhd 1 = (\underline{y} * \mathrm{rec}\underline{x}) \rhd (\underline{y} * \mathrm{rec}\underline{x}) = (\mathrm{rec}\underline{x} * \underline{y}) \gg 1 = (\mathrm{rec}\underline{x} * \underline{y}); \mathrm{NonreciprocalToLeft(Eq)(1term)} \rhd 1 = (\mathrm{rec}\underline{x} * \underline{y}) \gg \mathrm{rec}\underline{y} = \mathrm{rec}\underline{x}; \mathrm{eqSymmetry} \rhd \mathrm{rec}\underline{y} = \mathrm{rec}\underline{x} \gg \mathrm{rec}\underline{x} = \mathrm{rec}\underline{y}\rceil, p_0, c)]$

$[\mathrm{OrderedPairEquality} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(sx)}\colon \forall\underline{(sx1)}\colon \forall\underline{(sy)}\colon \forall\underline{(sy1)}\colon \forall\underline{(sz)}\colon \forall\underline{(sz1)}\colon \forall\underline{(su)}\colon \forall\underline{(su1)}\colon \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sx1)}\}\} = \{\{\underline{(sy)}, \underline{(sy)}\}, \{\underline{(sy)}, \underline{(sy1)}\}\} \vdash \{\{\underline{(sz)}, \underline{(sz)}\}, \{\underline{(sz)}, \underline{(sz1)}\}\} = \{\{\underline{(su)}, \underline{(su)}\}, \{\underline{(su)}, \underline{(su1)}\}\} \vdash \underline{(sx)} = \underline{(sz)} \vdash \underline{(sy)} = \underline{(su)}]$

$[\mathrm{OrderedPairEquality} \overset{\mathrm{proof}}{\to} \lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{(sx)}\colon \forall\underline{(sx1)}\colon \forall\underline{(sy)}\colon \forall\underline{(sy1)}\colon \forall\underline{(sz)}\colon \forall\underline{(sz1)}\colon \forall\underline{(su)}\colon \forall\underline{(su1)}\colon \{\{\underline{(sx)}, \underline{(sx)}\}, \{\underline{(sx)}, \underline{(sx1)}\}\} = \{\{\underline{(sy)}, \underline{(sy)}\}, \{\underline{(sy)}, \underline{(sy1)}\}\} \vdash \{\{\underline{(sz)}, \underline{(sz)}\}, \{\underline{(sz)}, \underline{(sz1)}\}\} =$

$\{\{\underline{(su)},\underline{(su)}\},\{\underline{(su)},\underline{(su1)}\}\} \vdash \underline{(sx)} = \underline{(sz)} \vdash$
$\mathrm{FromOrderedPair}(1) \rhd \{\{\overline{(sx)},\overline{(sx)}\},\{\overline{(sx)},\overline{(sx1)}\}\} =$
$\{\{\overline{(sy)},\overline{(sy)}\},\{\overline{(sy)},\overline{(sy1)}\}\} \gg \overline{(sx)} = \overline{(sy)}; \mathrm{eqSymmetry} \rhd \underline{(sx)} = \underline{(sy)} \gg \underline{(sy)} =$
$\underline{(sx)}; \mathrm{FromOrderedPair}(1) \rhd \{\{\overline{(sz)},\overline{(sz)}\},\{\overline{(sz)},\overline{(sz1)}\}\} =$
$\{\{\overline{(su)},\overline{(su)}\},\{\overline{(su)},\overline{(su1)}\}\} \gg \overline{(sz)} = \overline{(su)}; \mathrm{eqTransitivity4} \rhd \underline{(sy)} =$
$\underline{(sx)} \rhd \underline{(sx)} = \underline{(sz)} \rhd \underline{(sz)} = \underline{(su)} \gg \underline{(sy)} = \underline{(su)}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ReciprocalIsFunction} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash$
$\forall \underline{\mathsf{m}}: \forall \underline{\mathsf{m}}: \forall \underline{(fx)}: \forall_{\mathrm{obj}} \overline{(f1)}: \forall_{\mathrm{obj}} \overline{(f2)}: \forall_{\mathrm{obj}} \overline{(f3)}: \forall_{\mathrm{obj}} \overline{(f4)}: \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)}]$

$[\mathrm{ReciprocalIsFunction} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall \underline{\mathsf{m}}: \forall \underline{\mathsf{m}}: \forall \underline{(fx)}: \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \vdash \overline{(f1)} = \overline{(f3)} \vdash$
$\mathrm{Repetition} \rhd \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Separation2formula}(2) \rhd \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in$

$\{ph \in \{\underline{ph} \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n; \mathrm{Repetition} \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \gg \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\}; \mathrm{Separation2formula}(2) \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in$
$\{ph \in \{\underline{ph} \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n\} \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n; \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \vdash$
$\mathrm{FirstConjunct} \rhd \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \gg \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \gg \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n \gg$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\}; \mathrm{FromOrderedPair}(1) \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\} \gg \overline{(f1)} = \underline{\mathsf{m}}; \mathrm{eqSymmetry} \rhd \overline{(f1)} = \underline{\mathsf{m}} \gg \underline{\mathsf{m}} =$
$\overline{(f1)}; \mathrm{FromOrderedPair}(1) \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\} \gg \overline{(f3)} = \underline{\mathsf{m}}; \mathrm{eqTransitivity4} \rhd \underline{\mathsf{m}} = \overline{(f1)} \rhd \overline{(f1)} =$

$\overline{(f3)} \rhd \overline{(f3)} = \underline{m} \gg \underline{m} = \underline{m}; \text{SameSeries} \rhd \underline{m} = \underline{m} \gg \underline{(fx)}[\underline{m}] =$
$\underline{(fx)}[\underline{m}]; \text{SameReciprocal} \rhd \dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0)n \rhd \underline{(fx)}[\underline{m}] = \underline{(fx)}[\underline{m}] \gg \text{rec}\underline{(fx)}[\underline{m}] =$
$\text{rec}\underline{(fx)}[\underline{m}]; \text{FromOrderedPair}(2) \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\} \gg \overline{(f2)} = \text{rec}\underline{(fx)}[\underline{m}]; \text{FromOrderedPair}(2) \rhd$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\} \gg \overline{(f4)} =$
$\text{rec}\underline{(fx)}[\underline{m}]; \text{eqSymmetry} \rhd \overline{(f4)} = \text{rec}\underline{(fx)}[\underline{m}] \gg \text{rec}\underline{(fx)}[\underline{m}] =$
$\overline{(f4)}; \text{eqTransitivity4} \rhd \overline{(f2)} = \text{rec}\underline{(fx)}[\underline{m}] \rhd \text{rec}\underline{(fx)}[\underline{m}] = \text{rec}\underline{(fx)}[\underline{m}] \rhd \text{rec}\underline{(fx)}[\underline{m}] =$
$\overline{(f4)} \gg \overline{(f2)} = \overline{(f4)}; \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}\,(\dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}\,(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\})n)n \vdash \dot{\neg}\,(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}\,(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash$
$\text{FirstConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}\,(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\})n)n \gg \dot{\neg}\,(\underline{(fx)}[\underline{m}] =$
$0)n; \text{SecondConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}\,(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\})n)n \gg \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\}; \text{FirstConjunct} \rhd \dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}\,(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg \underline{(fx)}[\underline{m}] =$
$0; \text{SecondConjunct} \rhd \dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}\,(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\}; \text{OrderedPairEquality} \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\} \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\} \rhd \overline{(f1)} = \overline{(f3)} \gg \underline{m} = \underline{m}; \text{SameSeries} \rhd \underline{m} = \underline{m} \gg \underline{(fx)}[\underline{m}] =$
$\underline{(fx)}[\underline{m}]; \text{eqTransitivity} \rhd \underline{(fx)}[\underline{m}] = \underline{(fx)}[\underline{m}] \rhd \underline{(fx)}[\underline{m}] = 0 \gg \underline{(fx)}[\underline{m}] =$
$0; \text{FromContradiction} \rhd \underline{(fx)}[\underline{m}] = 0 \rhd \dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0)n \gg \overline{(f2)} =$
$\overline{(f4)}; \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}\,(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \dot{\neg}\,(\dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}\,(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\})n)n \vdash \text{FirstConjunct} \rhd \dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}\,(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg \underline{(fx)}[\underline{m}] =$
$0; \text{SecondConjunct} \rhd \dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}\,(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\}; \text{FirstConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}\,(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\})n)n \gg \dot{\neg}\,(\underline{(fx)}[\underline{m}] =$
$0)n; \text{SecondConjunct} \rhd \dot{\neg}\,(\dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}\,(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\})n)n \gg \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\}; \text{OrderedPairEquality} \rhd \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\} \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \text{rec}\underline{(fx)}[\underline{m}]\}\} \rhd \overline{(f1)} = \overline{(f3)} \gg \underline{m} = \underline{m}; \text{SameSeries} \rhd \underline{m} = \underline{m} \gg$
$\underline{(fx)}[\underline{m}] = \underline{(fx)}[\underline{m}]; \text{eqSymmetry} \rhd \underline{(fx)}[\underline{m}] = \underline{(fx)}[\underline{m}] \gg \underline{(fx)}[\underline{m}] =$
$\underline{(fx)}[\underline{m}]; \text{eqTransitivity} \rhd \underline{(fx)}[\underline{m}] = \underline{(fx)}[\underline{m}] \rhd \underline{(fx)}[\underline{m}] = 0 \gg \underline{(fx)}[\underline{m}] =$
$0; \text{FromContradiction} \rhd \underline{(fx)}[\underline{m}] = 0 \rhd \dot{\neg}\,(\underline{(fx)}[\underline{m}] = 0)n \gg \overline{(f2)} =$

$\overline{(f4)}; \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg$
$\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \gg$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\}; \mathrm{FromOrderedPair}(2) \rhd$
$\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\} \gg \overline{(f2)} =$
$0; \mathrm{FromOrderedPair}(2) \rhd \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\} \gg \overline{(f4)} =$
$0; \mathrm{eqSymmetry} \rhd \overline{(f4)} = 0 \gg 0 = \overline{(f4)}; \mathrm{eqTransitivity} \rhd \overline{(f2)} = 0 \rhd 0 = \overline{(f4)} \gg$
$\overline{(f2)} = \overline{(f4)}; \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash$
$\mathrm{Ded} \rhd \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \vdash \overline{(f2)} =$
$\overline{(f4)} \gg \overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{MP} \rhd \overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \rhd \overline{(f1)} = \overline{(f3)} \gg \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{Ded} \rhd \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \vdash \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \vdash \overline{(f2)} = \overline{(f4)} \gg \overline{(f1)} =$
$\overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)}; \mathrm{MP} \rhd \overline{(f1)} =$
$\overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)} \rhd \overline{(f1)} =$
$\overline{(f3)} \gg \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{Ded} \rhd \forall \underline{m}\colon \forall \underline{m}\colon \forall \underline{(fx)}\colon \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$

$\dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \vdash \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \vdash \overline{(f2)} = \overline{(f4)} \gg$
$\overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)}; \mathrm{MP} \rhd \overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \rhd \overline{(f1)} = \overline{(f3)} \gg \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)}; \mathrm{Ded} \rhd \forall \underline{m}: \forall \underline{m}: \forall \underline{(fx)}: \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \vdash \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \vdash \overline{(f2)} = \overline{(f4)} \gg$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{From2} * \mathrm{2Disjuncts} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \rhd \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \rhd \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \overline{(f2)} = \overline{(f4)} \rhd \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \rhd \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \gg \overline{(f2)} = \overline{(f4)}; \mathrm{Ded} \rhd \forall \underline{m}: \forall \underline{m}: \forall \underline{(fx)}: \overline{(f1)} = \overline{(f3)} \vdash \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \vdash \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \vdash \overline{(f2)} =$
$\overline{(f4)} \gg \overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$

$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{MP} \rhd \overline{(f1)} = \overline{(f3)} \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \rhd \overline{(f1)} = \overline{(f3)} \gg \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)}; \mathrm{ExistMP2} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow$
$\dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n \Rightarrow \overline{(f2)} =$
$\overline{(f4)} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n)n)n \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0 \Rightarrow \dot{\neg}(\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} = \{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n)n)n \gg \overline{(f2)} =$
$\overline{(f4)}; \forall\underline{m}\colon \forall\underline{m}\colon \forall\underline{(fx)}\colon \mathrm{Ded} \rhd \forall\underline{m}\colon \forall\underline{m}\colon \forall\underline{(fx)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{m}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] =$
$0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n)n)n\} \vdash \{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N,Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{m}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n)n)n\} \vdash \overline{(f1)} = \overline{(f3)} \vdash \overline{(f2)} = \overline{(f4)} \gg$
$\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N,Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{m}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},\mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m},\underline{m}\},\{\underline{m},0\}\})n)n)n)n\} \Rightarrow \{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\} \in \{ph \in \{ph \in$

$\mathrm{P(P(Union(\{N,Q\})))} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ReciprocalIsTotal} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P(P(Union(\{N,Q\})))} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}]$

$[\mathrm{ReciprocalIsTotal} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \vdash \overline{(\mathrm{s1})} \in \mathrm{N} \vdash$
$\mathrm{RationalType} \gg 0 \in \mathrm{Q}; \mathrm{ToCartProd} \rhd \overline{(\mathrm{s1})} \in \mathrm{N} \rhd 0 \in \mathrm{Q} \gg$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} \in \{\mathrm{ph} \in \mathrm{P(P(Union(\{N,Q\})))} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{eqReflexivity} \gg$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\}; \mathrm{JoinConjuncts} \rhd \underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] =$
$0 \rhd \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} \gg \dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} =$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\})\mathrm{n})\mathrm{n}; \mathrm{WeakenOr1} \rhd \dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] =$
$0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} =$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\})\mathrm{n})\mathrm{n}; \mathrm{IntroExist} @ \overline{(\mathrm{s1})} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow$
$\dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Formula2Sep} \rhd \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} \in \{\mathrm{ph} \in$
$\mathrm{P(P(Union(\{N,Q\})))} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P(P(Union(\{N,Q\})))} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{IntroExist} @ 0 \rhd \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, 0\}\} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}\,(\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{-}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\dot{-}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{-}\,(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{-}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}\,(\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{-}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{-}\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\dot{-}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{-}\,(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}; \forall \underline{(\mathrm{fx})}\colon \dot{-}\,(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \vdash \overline{(\mathrm{s1})} \in \mathrm{N} \vdash$
$\mathrm{SeriesType} \gg \dot{-}\,(\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}\,(\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{-}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{ValueType} \rhd \overline{(\mathrm{s1})} \in \mathrm{N} \rhd \dot{-}\,(\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \underline{(\mathrm{fx})} \Rightarrow$
$\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}\,(\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}\,(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}} \overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \underline{(\mathrm{fx})} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{s2})}\colon \dot{-}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\underline{(\mathrm{fx})})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] \in \mathrm{Q}; \mathrm{QisClosed}(\mathrm{Reciprocal}) \rhd \dot{-}\,(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] =$
$0)\mathrm{n} \rhd \underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] \in \mathrm{Q} \gg \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] \in \mathrm{Q}; \mathrm{ToCartProd} \rhd \overline{(\mathrm{s1})} \in \mathrm{N} \rhd \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] \in$
$\mathrm{Q} \gg \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{-}\,(\dot{-}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{-}\,(\dot{-}\,(\dot{-}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{-}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{eqReflexivity} \gg$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} =$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\}; \mathrm{JoinConjuncts} \rhd \dot{-}\,(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] =$
$0)\mathrm{n} \rhd \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} = \{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} \gg$
$\dot{-}\,(\dot{-}\,(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow \dot{-}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} =$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n}; \mathrm{WeakenOr2} \rhd \dot{-}\,(\dot{-}\,(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow$
$\dot{-}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} =$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n} \gg \dot{-}\,(\dot{-}\,(\dot{-}\,(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow$
$\dot{-}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} =$
$\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}\,(\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}] = 0 \Rightarrow$
$\dot{-}\,(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \mathrm{rec}\underline{(\mathrm{fx})}[\overline{(\mathrm{s1})}]\}\} =$

$\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},0\}\})n)n; \mathrm{IntroExist} \mathbin{@} \overline{(s1)} \rhd \dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\overline{(s1)}]=0)n \Rightarrow$
$\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} =$
$\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\overline{(s1)}]=0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} = \{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},0\}\})n)n \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n \Rightarrow \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n; \mathrm{Formula2Sep} \rhd \{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} \in$
$\{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0 \Rightarrow$
$\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n \gg$
$\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\}; \mathrm{IntroExist} \mathbin{@} \mathrm{rec}\underline{(fx)}[\overline{(s1)}] \rhd$
$\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\mathrm{rec}\underline{(fx)}[\overline{(s1)}]\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\} \gg \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in \{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\})n)n; \forall\underline{(fx)}\colon \mathrm{Ded} \rhd \forall\underline{(fx)}\colon \underline{(fx)}[\overline{(s1)}]=0 \vdash \overline{(s1)} \in N \vdash$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot{\neg}(\underline{(fx)}[\underline{\mathsf{m}}]=0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})n)n)n)n\})n)n \gg \underline{(fx)}[\overline{(s1)}]=0 \Rightarrow \forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N,Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\} \mid$

$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\underline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}; \mathrm{Ded} \rhd \forall(\underline{\mathrm{fx}})\colon \dot\neg((\underline{\mathrm{fx}})[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \vdash \overline{(\mathrm{s1})} \in \mathrm{N} \vdash$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\underline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n} \gg \dot\neg((\underline{\mathrm{fx}})[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\underline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}; \mathrm{FromNegations} \rhd (\underline{\mathrm{fx}})[\overline{(\mathrm{s1})}] = 0 \Rightarrow$
$\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\underline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n} \rhd \dot\neg((\underline{\mathrm{fx}})[\overline{(\mathrm{s1})}] = 0)\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\underline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\underline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})\rceil$
$[\mathrm{ReciprocalIsRationalSeries} \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall(\underline{\mathrm{fx}})\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\underline{\mathrm{fx}})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\underline{\mathrm{fx}})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{r1})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$

∸($\forall_{\mathrm{obj}}$(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_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸($\forall_{\mathrm{obj}}$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} ⇒ {{(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_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸($\forall_{\mathrm{obj}}$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} ⇒ (f1) = (f3) ⇒ (f2) = (f4))n)n ⇒
∸($\forall_{\mathrm{obj}}$(s1): (s1) ∈ N ⇒ ∸($\forall_{\mathrm{obj}}$(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈ {ph ∈ {ph ∈
P(P(Union({N, Q}))) | ∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸($\forall_{\mathrm{obj}}$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})n)n)n)n]

[ReciprocalIsRationalSeries $\stackrel{\text{proof}}{\to}$ λc.λx.$\mathcal{P}$(⌈SystemQ ⊢
∀(fx): CPseparationIsRelation ≫ $\forall_{\mathrm{obj}}$(r1): (r1) ∈ {ph ∈ {ph ∈
P(P(Union({N, Q}))) | ∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸($\forall_{\mathrm{obj}}$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} ⇒ ∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈
N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸((r1) =
{{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n; ReciprocalIsFunction ≫
$\forall_{\mathrm{obj}}$(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_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸($\forall_{\mathrm{obj}}$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} ⇒ {{(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_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸($\forall_{\mathrm{obj}}$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} ⇒ (f1) = (f3) ⇒ (f2) = (f4); ReciprocalIsTotal ≫
$\forall_{\mathrm{obj}}$(s1): (s1) ∈ N ⇒ ∸($\forall_{\mathrm{obj}}$(s2): ∸({{(s1), (s1)}, {(s1), (s2)}} ∈ {ph ∈ {ph ∈
P(P(Union({N, Q}))) | ∸($\forall_{\mathrm{obj}}$(op1): ∸(∸($\forall_{\mathrm{obj}}$(op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a_{Ph} = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸($\forall_{\mathrm{obj}}$m: ∸(∸(∸(∸((fx)[m] = 0)n ⇒ ∸(f_{Ph} =
{{m, m}, {m, rec(fx)[m]}})n)n)n ⇒ ∸((fx)[m] = 0 ⇒ ∸(f_{Ph} =

$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n)n)n\})n)n; \mathrm{ToSeries} \rhd \forall_{\mathrm{obj}} \overline{(r1)}: \overline{(r1)} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}((\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n)n)n)n\} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \rhd$
$\forall_{\mathrm{obj}} \overline{(f1)}: \forall_{\mathrm{obj}} \overline{(f2)}: \forall_{\mathrm{obj}} \overline{(f3)}: \forall_{\mathrm{obj}} \overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}((\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n)n)n)n\} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}((\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n)n)n)n\} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)} \rhd \forall_{\mathrm{obj}} \overline{(s1)}: \overline{(s1)} \in N \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}((\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n)n)n)n\})n)n \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(r1)}: \overline{(r1)} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}((\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n)n)n)n\} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}} \overline{(f1)}: \forall_{\mathrm{obj}} \overline{(f2)}: \forall_{\mathrm{obj}} \overline{(f3)}: \forall_{\mathrm{obj}} \overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}((\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, 0\}\})n)n)n)n)n\} \Rightarrow \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}} \overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}} \overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}} \underline{m}: \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\underline{(fx)}[\underline{m}] = 0)n \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, \mathrm{rec}\underline{(fx)}[\underline{m}]\}\})n)n)n \Rightarrow \dot{\neg}((\underline{(fx)}[\underline{m}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ReciprocalFnynonzero} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\overline{(\mathrm{m1})}\colon \forall\overline{(\mathrm{fx})}\colon \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \vdash$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]]$

$[\mathrm{ReciprocalFnynonzero} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\overline{(\mathrm{m1})}\colon \forall\overline{(\mathrm{fx})}\colon \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \vdash \mathrm{NatType} \gg \underline{\mathsf{m}} \in \mathrm{N}; \mathrm{ReciprocalIsRationalSeries} \gg \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MemberOfSeries} \rhd \underline{\mathsf{m}} \in$
$\mathrm{N} \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{(\mathrm{r1})} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot\neg(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n})\mathrm{n})\mathrm{n} \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Repetition} \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}; \mathrm{Separation2formula}(2) \rhd \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} \in \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \gg \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{m1})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\overline{(\mathrm{m1})}] = 0)\mathrm{n} \Rightarrow$
$\dot{\neg}(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, \mathrm{rec}(\mathrm{fx})[\overline{(\mathrm{m1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\overline{(\mathrm{m1})}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \forall\underline{\mathsf{m}}\colon \forall\overline{(\mathrm{m1})}\colon \forall(\mathrm{fx})\colon \dot{\neg}((\mathrm{fx})[\overline{(\mathrm{m1})}] = 0)\mathrm{n} \vdash$
$\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\overline{(\mathrm{m1})}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, \mathrm{rec}(\mathrm{fx})[\overline{(\mathrm{m1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}((\mathrm{fx})[\overline{(\mathrm{m1})}] = 0 \Rightarrow$
$\dot{\neg}(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\dot{\neg}((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{f}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{(\mathrm{m1}),(\mathrm{m1})\},\{(\mathrm{m1}),0\}\})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{ToNegatedAnd}(1) \rhd \dot{-}(((\mathrm{fx})[(\mathrm{m1})] = 0)\mathrm{n} \gg \dot{-}(\dot{-}(((\mathrm{fx})[(\mathrm{m1})] = 0 \Rightarrow$
$\dot{-}(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1}){:}\,\dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2}){:}\,\dot{-}(\dot{-}(\dot{-}(((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{-}(((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{-}(\dot{-}(\dot{-}(\dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(\mathrm{m1}),(\mathrm{m1})\},\{(\mathrm{m1}),0\}\})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{NegateDisjunct2} \rhd \dot{-}(\dot{-}(\dot{-}(((\mathrm{fx})[(\mathrm{m1})] =$
$0)\mathrm{n} \Rightarrow \dot{-}(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1}){:}\,\dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2}){:}\,\dot{-}(\dot{-}(\dot{-}(((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{-}(((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{-}(\dot{-}(\dot{-}(\dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(\mathrm{m1}),(\mathrm{m1})\},\{(\mathrm{m1}),\mathrm{rec}(\mathrm{fx})[(\mathrm{m1})]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(((\mathrm{fx})[(\mathrm{m1})] = 0 \Rightarrow$
$\dot{-}(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1}){:}\,\dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2}){:}\,\dot{-}(\dot{-}(\dot{-}(((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{-}(((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{-}(\dot{-}(\dot{-}(\dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(\mathrm{m1}),(\mathrm{m1})\},\{(\mathrm{m1}),0\}\})\mathrm{n})\mathrm{n} \rhd \dot{-}(\dot{-}(((\mathrm{fx})[(\mathrm{m1})] = 0 \Rightarrow \dot{-}(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid \dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1}){:}\,\dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2}){:}\,\dot{-}(\dot{-}(\dot{-}(((\mathrm{op1}) \in$
$\mathrm{N} \Rightarrow \dot{-}(((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{-}(\dot{-}(\dot{-}(\dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{(\mathrm{m1}),(\mathrm{m1})\},\{(\mathrm{m1}),0\}\})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{-}(\dot{-}(((\mathrm{fx})[(\mathrm{m1})] = 0)\mathrm{n} \Rightarrow \dot{-}(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1}){:}\,\dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2}){:}\,\dot{-}(\dot{-}(\dot{-}(((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{-}(((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{-}(\dot{-}(\dot{-}(\dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(\mathrm{m1}),(\mathrm{m1})\},\{(\mathrm{m1}),\mathrm{rec}(\mathrm{fx})[(\mathrm{m1})]\}\})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot{-}(\dot{-}(((\mathrm{fx})[(\mathrm{m1})] =$
$0)\mathrm{n} \Rightarrow \dot{-}(\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1}){:}\,\dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2}){:}\,\dot{-}(\dot{-}(\dot{-}(((\mathrm{op1}) \in \mathrm{N} \Rightarrow \dot{-}(((\mathrm{op2}) \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{(\mathrm{op1}),(\mathrm{op1})\},\{(\mathrm{op1}),(\mathrm{op2})\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{-}(\dot{-}(\dot{-}(\dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\mathrm{rec}(\mathrm{fx})[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{-}(((\mathrm{fx})[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{-}(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{(\mathrm{m1}),(\mathrm{m1})\},\{(\mathrm{m1}),\mathrm{rec}(\mathrm{fx})[(\mathrm{m1})]\}\})\mathrm{n})\mathrm{n} \gg \{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid \dot{-}(\forall_{\mathrm{obj}}(\mathrm{op1}){:}\,\dot{-}(\dot{-}(\forall_{\mathrm{obj}}(\mathrm{op2}){:}\,\dot{-}(\dot{-}(\dot{-}(((\mathrm{op1}) \in \mathrm{N} \Rightarrow$

∸((op2) ∈ Q)n)n ⇒ ∸(a_Ph = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸(∀_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)n}[m]}} =
{{(m1), (m1)}, {(m1), rec(fx)[(m1)]}}; FromOrderedPair(2) ▷
{{m, m}, {m, {ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀_obj (op1): ∸(∸(∀_obj (op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_Ph = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸(∀_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)n}[m]}} = {{(m1), (m1)}, {(m1), rec(fx)[(m1)]}} ≫
{ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀_obj (op1): ∸(∸(∀_obj (op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_Ph = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸(∀_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)n}[m] =
rec(fx)[(m1)]; FromOrderedPair(1) ▷ {{m, m}, {m, {ph ∈ {ph ∈
P(P(Union({N, Q}))) | ∸(∀_obj (op1): ∸(∸(∀_obj (op2): ∸(∸(∸((op1) ∈ N ⇒
∸((op2) ∈ Q)n)n ⇒ ∸(a_Ph = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸(∀_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)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}))) | ∸(∀_obj (op1): ∸(∸(∀_obj (op2): ∸(∸(∸((op1) ∈
N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a_Ph =
{{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀_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)n}[m] = rec(fx)[(m1)] ▷ rec(fx)[(m1)] = rec(fx)[m] ≫
{ph ∈ {ph ∈ P(P(Union({N, Q}))) |
∸(∀_obj (op1): ∸(∸(∀_obj (op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_Ph = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸(∀_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)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}))) |
∸(∀_obj (op1): ∸(∸(∀_obj (op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a_Ph = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸(∀_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)n}[m]}} =

$\{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, \mathrm{rec}\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}] = 0 \Rightarrow$
$\dot{\neg}\,(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, 0\}\})\mathrm{n})\mathrm{n} \vdash \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\ |\ \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\ |\ \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] \gg \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\ |\ \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, \mathrm{rec}\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}] = 0 \Rightarrow$
$\dot{\neg}\,(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, 0\}\})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\ |\ \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\ |\ \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] =$
$0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]; \mathrm{MP} \rhd \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\ |\ \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, \mathrm{rec}\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\overline{(\mathrm{m1})}] = 0 \Rightarrow$
$\dot{\neg}\,(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\})))\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\ |$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0)\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \mathrm{rec}\overline{(\mathrm{fx})}[\underline{\mathsf{m}}]\}\})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot{\neg}\,(\mathsf{f}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\}\} = \{\{\overline{(\mathrm{m1})}, \overline{(\mathrm{m1})}\}, \{\overline{(\mathrm{m1})}, 0\}\})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in$

$\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in$
$N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n)n\}[\underline{\mathsf{m}}] = rec\underline{(fx)}[\underline{\mathsf{m}}] \rhd \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \gg$
$\dot\neg(\dot\neg(\dot\neg(\underline{(fx)}[\underline{(m1)}] = 0)n \Rightarrow \dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{ph \in \{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow$
$\dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n)n\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, rec\underline{(fx)}[\underline{(m1)}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{(m1)}] = 0 \Rightarrow$
$\dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n)n\}[\underline{\mathsf{m}}]\}\} = \{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, 0\}\})n)n \Rightarrow \{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in$
$N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n)n\}[\underline{\mathsf{m}}] = rec\underline{(fx)}[\underline{\mathsf{m}}]; \mathrm{ExistMP} \rhd \dot\neg(\dot\neg(\dot\neg(\underline{(fx)}[\underline{(m1)}] =$
$0)n \Rightarrow \dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n)n\}[\underline{\mathsf{m}}]\}\} =$
$\{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, rec\underline{(fx)}[\underline{(m1)}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{(m1)}] = 0 \Rightarrow$
$\dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{ph \in \{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot\neg(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n)n\}[\underline{\mathsf{m}}]\}\} = \{\{\underline{(m1)}, \underline{(m1)}\}, \{\underline{(m1)}, 0\}\})n)n \Rightarrow \{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in$
$N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] =$
$0)n \Rightarrow \dot\neg(\mathsf{f}_{Ph} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, rec\underline{(fx)}[\underline{\mathsf{m}}]\}\})n)n)n \Rightarrow \dot\neg(\underline{(fx)}[\underline{\mathsf{m}}] = 0 \Rightarrow \dot\neg(\mathsf{f}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, 0\}\})n)n)n)n)n\}[\underline{\mathsf{m}}] =$
$rec\underline{(fx)}[\underline{\mathsf{m}}] \rhd \dot\neg(\forall_{obj}\underline{(m1)}\colon \dot\neg(\dot\neg(\dot\neg(\dot\neg(\underline{(fx)}[\underline{(m1)}] = 0)n \Rightarrow \dot\neg(\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, \{ph \in$
$\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(op1)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}\colon \dot\neg(\dot\neg(\dot\neg(\overline{(op1)} \in$
$N \Rightarrow \dot\neg(\overline{(op2)} \in Q)n)n \Rightarrow \dot\neg(\mathsf{a}_{Ph} =$

{{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀$_{obj}$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}))) |
∸(∀$_{obj}$(op1): ∸(∸(∀$_{obj}$(op2): ∸(∸(∸((op1) ∈ N ⇒ ∸((op2) ∈ Q)n)n ⇒
∸(a$_{Ph}$ = {{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} |
∸(∀$_{obj}$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)n)n ≫ {ph ∈
{ph ∈ P(P(Union({N, Q}))) | ∸(∀$_{obj}$(op1): ∸(∸(∀$_{obj}$(op2): ∸(∸(∸((op1) ∈
N ⇒ ∸((op2) ∈ Q)n)n ⇒ ∸(a$_{Ph}$ =
{{(op1), (op1)}, {(op1), (op2)}})n)n)n)n)n)n} | ∸(∀$_{obj}$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]⌉, p$_0$, c)]

[ReciprocalFnonzero $\overset{\text{stmt}}{\rightarrow}$ SystemQ ⊢ ∀m: ∀(fx): ∸((fx)[m] = 0)n ⊢ 1f/(fx)[m] =
rec(fx)[m]]

[ReciprocalFnonzero $\overset{\text{proof}}{\rightarrow}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀m: ∀(fx): ∸((fx)[m] = 0)n ⊢
IfThenElse(F) ⊳ ∸((fx)[m] = 0)n ≫ if((fx)[m] = 0, 0, rec(fx)[m]) =
rec(fx)[m]; ReciprocalF ≫ 1f/(fx)[m] = if((fx)[m] =
0, 0, rec(fx)[m]); eqTransitivity ⊳ 1f/(fx)[m] = if((fx)[m] = 0, 0, rec(fx)[m]) ⊳
if((fx)[m] = 0, 0, rec(fx)[m]) = rec(fx)[m] ≫ 1f/(fx)[m] = rec(fx)[m]⌉, p$_0$, c)]

[(Eventually = f)2sameF(Helper) $\overset{\text{stmt}}{\rightarrow}$ SystemQ ⊢
∀m: ∀n: ∀(ϵ): ∀(fx): ∀(fy): ∀$_{obj}$m: n <= m ⇒ (fx)[m] = (fy)[m] ⇒ ∸(0 <= (ϵ) ⇒
∸(∸(0 = (ϵ))n)n)n ⇒ n <= m ⇒ ∸(|((fx)[m] + (−u(fy)[m]))| <= (ϵ) ⇒
∸(∸(|((fx)[m] + (−u(fy)[m]))| = (ϵ))n)n)n]

[(Eventually = f)2sameF(Helper) $\overset{\text{proof}}{\rightarrow}$ λc.λx.𝒫(⌈SystemQ ⊢
∀m: ∀n: ∀(ϵ): ∀(fx): ∀(fy): ∀$_{obj}$m: n <= m ⇒ (fx)[m] = (fy)[m] ⊢ A4 @ m ⊳
∀$_{obj}$m: n <= m ⇒ (fx)[m] = (fy)[m] ≫ n <= m ⇒ (fx)[m] = (fy)[m]; ∸(0 <=
(ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⊢ n <= m ⊢ MP ⊳ n <= m ⇒ (fx)[m] =
(fy)[m] ⊳ n <= m ≫ (fx)[m] = (fy)[m]; PositiveToLeft(Eq)(1term) ⊳ (fx)[m] =
(fy)[m] ≫ ((fx)[m] + (−u(fy)[m])) =
0; SameNumerical ⊳ ((fx)[m] + (−u(fy)[m])) = 0 ≫ |((fx)[m] + (−u(fy)[m]))| =
|0|; |0| = 0 ≫ |0| = 0; eqTransitivity ⊳ |((fx)[m] + (−u(fy)[m]))| = |0| ⊳ |0| =
0 ≫ |((fx)[m] + (−u(fy)[m]))| = 0; eqSymmetry ⊳ |((fx)[m] + (−u(fy)[m]))| =
0 ≫ 0 = |((fx)[m] + (−u(fy)[m]))|; SubLessLeft ⊳ 0 =
|((fx)[m] + (−u(fy)[m]))| ⊳ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ≫
∸(|((fx)[m] + (−u(fy)[m]))| <= (ϵ) ⇒ ∸(∸(|((fx)[m] + (−u(fy)[m]))| =
(ϵ))n)n)n; ∀m: ∀n: ∀(ϵ): ∀(fx): ∀(fy): Ded ⊳ ∀m: ∀n: ∀(ϵ): ∀(fx): ∀(fy): ∀$_{obj}$m: n <=
m ⇒ (fx)[m] = (fy)[m] ⊢ ∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⊢ n <= m ⊢
∸(|((fx)[m] + (−u(fy)[m]))| <= (ϵ) ⇒ ∸(∸(|((fx)[m] + (−u(fy)[m]))| =
(ϵ))n)n)n ≫ ∀$_{obj}$m: n <= m ⇒ (fx)[m] = (fy)[m] ⇒ ∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ⇒ n <= m ⇒ ∸(|((fx)[m] + (−u(fy)[m]))| <= (ϵ) ⇒

$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))| = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[(\mathrm{Eventually} = \mathrm{f})\mathrm{2sameF} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall \underline{\mathsf{m}}\colon \forall \underline{\mathsf{n}}\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \underline{(\mathrm{fy})}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n} \vdash \forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[(\mathrm{Eventually} = \mathrm{f})\mathrm{2sameF} \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{(\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}; \mathrm{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}; \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)})\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}; \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)})\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}; \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)})\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}; \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}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{PositiveToRight}(\mathrm{Less}) \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \dot{\neg}((\underline{\mathsf{x}} + \underline{\mathsf{y}}) <= \underline{\mathsf{z}} \Rightarrow$

$\dot\neg(\dot\neg((\underline{x}+\underline{y})=\underline{z})n)n)n \vdash \mathrm{LessAddition} \rhd \dot\neg((\underline{x}+\underline{y}) <= \underline{z} \Rightarrow \dot\neg(\dot\neg((\underline{x}+\underline{y})=\underline{z})n)n)n \gg \dot\neg(((\underline{x}+\underline{y})+(-u\underline{y})) <= (\underline{z}+(-u\underline{y})) \Rightarrow \dot\neg(\dot\neg(((\underline{x}+\underline{y})+(-u\underline{y}))=(\underline{z}+(-u\underline{y})))n)n)n; x = x+y-y \gg \underline{x} = ((\underline{x}+\underline{y})+(-u\underline{y})); \mathrm{eqSymmetry} \rhd \underline{x} = ((\underline{x}+\underline{y})+(-u\underline{y})) \gg ((\underline{x}+\underline{y})+(-u\underline{y})) = \underline{x}; \mathrm{SubLessLeft} \rhd ((\underline{x}+\underline{y})+(-u\underline{y})) = \underline{x} \rhd \dot\neg(((\underline{x}+\underline{y})+(-u\underline{y})) <= (\underline{z}+(-u\underline{y})) \Rightarrow \dot\neg(\dot\neg(((\underline{x}+\underline{y})+(-u\underline{y}))=(\underline{z}+(-u\underline{y})))n)n)n \gg \dot\neg(\underline{x} <= (\underline{z}+(-u\underline{y})) \Rightarrow \dot\neg(\dot\neg(\underline{x}=(\underline{z}+(-u\underline{y})))n)n)n\rceil, p_0, c)]$

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

[SwitchTerms(x − y < z) $\stackrel{\mathrm{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot\neg((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot\neg(\dot\neg((\underline{x}+(-u\underline{y})) = \underline{z})n)n)n \vdash \mathrm{NegativeToRight(Less)} \rhd \dot\neg((\underline{x}+(-u\underline{y})) <= \underline{z} \Rightarrow \dot\neg(\dot\neg((\underline{x}+(-u\underline{y})) = \underline{z})n)n)n \gg \dot\neg(\underline{x} <= (\underline{z}+\underline{y}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = (\underline{z}+\underline{y}))n)n)n; \mathrm{plusCommutativity} \gg (\underline{z}+\underline{y}) = (\underline{y}+\underline{z}); \mathrm{SubLessRight} \rhd (\underline{z}+\underline{y}) = (\underline{y}+\underline{z}) \rhd \dot\neg(\underline{x} <= (\underline{z}+\underline{y}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = (\underline{z}+\underline{y}))n)n)n \gg \dot\neg(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = (\underline{y}+\underline{z}))n)n)n; \mathrm{PositiveToLeft(Less)} \rhd \dot\neg(\underline{x} <= (\underline{y}+\underline{z}) \Rightarrow \dot\neg(\dot\neg(\underline{x} = (\underline{y}+\underline{z}))n)n)n \gg \dot\neg((\underline{x}+(-u\underline{z})) <= \underline{y} \Rightarrow \dot\neg(\dot\neg((\underline{x}+(-u\underline{z})) = \underline{y})n)n)n\rceil, p_0, c)]$

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

[SwitchTerms(x < y − z) $\stackrel{\mathrm{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon \dot\neg(\underline{x} <= (\underline{y}+(-u\underline{z})) \Rightarrow \dot\neg(\dot\neg(\underline{x} = (\underline{y}+(-u\underline{z})))n)n)n \vdash \mathrm{NegativeToLeft(Less)} \rhd \dot\neg(\underline{x} <= (\underline{y}+(-u\underline{z})) \Rightarrow \dot\neg(\dot\neg(\underline{x} = (\underline{y}+(-u\underline{z})))n)n)n \gg \dot\neg((\underline{x}+\underline{z}) <= \underline{y} \Rightarrow \dot\neg(\dot\neg((\underline{x}+\underline{z}) = \underline{y})n)n)n; \mathrm{plusCommutativity} \gg (\underline{x}+\underline{z}) = (\underline{z}+\underline{x}); \mathrm{SubLessLeft} \rhd (\underline{x}+\underline{z}) = (\underline{z}+\underline{x}) \rhd \dot\neg((\underline{x}+\underline{z}) <= \underline{y} \Rightarrow \dot\neg(\dot\neg((\underline{x}+\underline{z}) = \underline{y})n)n)n \gg \dot\neg((\underline{z}+\underline{x}) <= \underline{y} \Rightarrow \dot\neg(\dot\neg((\underline{z}+\underline{x}) = \underline{y})n)n)n; \mathrm{PositiveToRight(Less)} \rhd \dot\neg((\underline{z}+\underline{x}) <= \underline{y} \Rightarrow \dot\neg(\dot\neg((\underline{z}+\underline{x}) = \underline{y})n)n)n \gg \dot\neg(\underline{z} <= (\underline{y}+(-u\underline{x})) \Rightarrow \dot\neg(\dot\neg(\underline{z} = (\underline{y}+(-u\underline{x})))n)n)n\rceil, p_0, c)]$

[FromNot < f(Strong)(Helper2) $\stackrel{\mathrm{stmt}}{\rightarrow}$ $\mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon\forall\underline{u}\colon\forall\underline{v}\colon \dot\neg(|(\underline{x}+(-u\underline{y}))| <= (\mathrm{rec}((1+1)+1)*\underline{v}) \Rightarrow \dot\neg(\dot\neg(|(\underline{x}+(-u\underline{y}))| = (\mathrm{rec}((1+1)+1)*\underline{v}))n)n)n \vdash \dot\neg(|(\underline{z}+(-u\underline{u}))| <= (\mathrm{rec}((1+1)+1)*\underline{v}) \Rightarrow \dot\neg(\dot\neg(|(\underline{z}+(-u\underline{u}))| = (\mathrm{rec}((1+1)+1)*\underline{v}))n)n)n \vdash \dot\neg((\underline{y}+(-u\underline{u})) <= (\mathrm{rec}((1+1)+1)*\underline{v}) \Rightarrow \dot\neg(\dot\neg((\underline{y}+(-u\underline{u})) = (\mathrm{rec}((1+1)+1)*\underline{v}))n)n)n \vdash \dot\neg((\underline{x}+(-u\underline{z})) <= \underline{v} \Rightarrow \dot\neg(\dot\neg((\underline{x}+(-u\underline{z})) = \underline{v})n)n)n]$

[FromNot < f(Strong)(Helper2) $\stackrel{\mathrm{proof}}{\rightarrow}$ $\lambda c.\lambda x.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\underline{x}\colon\forall\underline{y}\colon\forall\underline{z}\colon\forall\underline{u}\colon\forall\underline{v}\colon \dot\neg(|(\underline{x}+(-u\underline{y}))| <= (\mathrm{rec}((1+1)+1)*\underline{v}) \Rightarrow \dot\neg(\dot\neg(|(\underline{x}+(-u\underline{y}))| = (\mathrm{rec}((1+1)+1)*\underline{v}))n)n)n \vdash \dot\neg(|(\underline{z}+(-u\underline{u}))| <= (\mathrm{rec}((1+1)+1)*\underline{v}) \Rightarrow \dot\neg(\dot\neg(|(\underline{z}+(-u\underline{u}))| = (\mathrm{rec}((1+1)+1)*\underline{v}))n)n)n \vdash \dot\neg((\underline{y}+(-u\underline{u})) <= (\mathrm{rec}((1+1)+1)*\underline{v}) \Rightarrow \dot\neg(\dot\neg((\underline{y}+(-u\underline{u})) = (\mathrm{rec}((1+1)+1)*\underline{v}))n)n)n \vdash x <= |x| \gg (\underline{x}+(-u\underline{y})) <= |(\underline{x}+(-u\underline{y}))|; \mathrm{leqLessTransitivity} \rhd (\underline{x}+(-u\underline{y})) <= |(\underline{x}+(-u\underline{y}))| \rhd \dot\neg(|(\underline{x}+(-u\underline{y}))| <= (\mathrm{rec}((1+1)+1)*\underline{v}) \Rightarrow \dot\neg(\dot\neg(|(\underline{x}+(-u\underline{y}))| = (\mathrm{rec}((1+1)+1)*\underline{v}))n)n)n \gg \dot\neg((\underline{x}+(-u\underline{y})) <= (\mathrm{rec}((1+1)+1)*\underline{v}) \Rightarrow \dot\neg(\dot\neg((\underline{x}+(-u\underline{y})) = (\mathrm{rec}((1+1)+1)*\underline{v}))n)n)n; \mathrm{NumericalDifference} \gg |(\underline{z}+(-u\underline{u}))| = |(\underline{u}+(-u\underline{z}))|; \mathrm{SubLessLeft} \rhd |(\underline{z}+(-u\underline{u}))| = |(\underline{u}+(-u\underline{z}))| \rhd \dot\neg(|(\underline{z}+(-u\underline{u}))| <= (\mathrm{rec}((1+1)+1)*\underline{v}) \Rightarrow \dot\neg(\dot\neg(|(\underline{z}+(-u\underline{u}))| =$

(rec((1 + 1) + 1) ∗ v))n)n)n ≫ ¬̇(|(u + (−uz))| <= (rec((1 + 1) + 1) ∗ v) ⇒ ¬̇(¬̇(|(u+(−uz))| = (rec((1+1)+1)∗v))n)n)n; x <= |x| ≫ (u+(−uz)) <= |(u+(−uz))|; leqLessTransitivity ▷ (u+(−uz)) <= |(u+(−uz))| ▷ ¬̇(|(u+(−uz))| <= (rec((1 + 1) + 1) ∗ v) ⇒ ¬̇(¬̇(|(u + (−uz))| = (rec((1 + 1) + 1) ∗ v))n)n)n ≫ ¬̇((u + (−uz)) <= (rec((1 + 1) + 1) ∗ v) ⇒ ¬̇(¬̇((u + (−uz)) = (rec((1 + 1) + 1) ∗ v))n)n)n; AddEquations(Less) ▷ ¬̇((x + (−uy)) <= (rec((1 + 1) + 1) ∗ v) ⇒ ¬̇(¬̇((x + (−uy)) = (rec((1 + 1) + 1) ∗ v))n)n)n ▷ ¬̇((y + (−uu)) <= (rec((1 + 1) + 1) ∗ v) ⇒ ¬̇(¬̇((y + (−uu)) = (rec((1 + 1) + 1) ∗ v))n)n)n ≫ ¬̇(((x+(−uy))+(y+(−uu))) <= ((rec((1+1)+1)∗v)+(rec((1+1)+1)∗v)) ⇒ ¬̇(¬̇(((x + (−uy)) + (y + (−uu))) = ((rec((1 + 1) + 1) ∗ v) + (rec((1 + 1) + 1) ∗ v)))n)n)n; AddEquations(Less) ▷ ¬̇(((x + (−uy)) + (y + (−uu))) <= ((rec((1+1)+1)∗v)+(rec((1+1)+1)∗v)) ⇒ ¬̇(¬̇(((x+(−uy))+(y+(−uu))) = ((rec((1 + 1) + 1) ∗ v) + (rec((1 + 1) + 1) ∗ v)))n)n)n ▷ ¬̇((u + (−uz)) <= (rec((1 + 1) + 1) ∗ v) ⇒ ¬̇(¬̇((u + (−uz)) = (rec((1 + 1) + 1) ∗ v))n)n)n ≫ ¬̇((((x + (−uy)) + (y + (−uu))) + (u + (−uz))) <= (((rec((1+1)+1)∗v)+(rec((1+1)+1)∗v))+(rec((1+1)+1)∗v)) ⇒ ¬̇(¬̇((((x+(−uy))+(y+(−uu)))+(u+(−uz))) = (((rec((1+1)+1)∗v)+(rec((1+1)+1)∗v))+(rec((1+1)+1)∗v)))n)n)n; insertTwoMiddleTerms(Sum) ≫ (x+(−uz)) = (((x + (−uy)) + (y + (−uu))) + (u + (−uz))); eqSymmetry ▷ (x + (−uz)) = (((x+(−uy))+(y+(−uu)))+(u+(−uz))) ≫ (((x+(−uy))+(y+(−uu)))+(u+(−uz))) = (x+(−uz)); SubLessLeft ▷ (((x+(−uy))+(y+(−uu)))+(u+(−uz))) = (x + (−uz)) ▷ ¬̇((((x + (−uy)) + (y + (−uu))) + (u + (−uz))) <= (((rec((1 + 1) + 1) ∗ v) + (rec((1 + 1) + 1) ∗ v)) + (rec((1 + 1) + 1) ∗ v)) ⇒ ¬̇(¬̇((((x + (−uy)) + (y + (−uu))) + (u + (−uz))) = (((rec((1 + 1) + 1) ∗ v) + (rec((1 + 1) + 1) ∗ v)) + (rec((1 + 1) + 1) ∗ v)))n)n)n ≫ ¬̇((x + (−uz)) <= (((rec((1 + 1) + 1) ∗ v) + (rec((1 + 1) + 1) ∗ v)) + (rec((1 + 1) + 1) ∗ v)) ⇒ ¬̇(¬̇((x + (−uz)) = (((rec((1 + 1) + 1) ∗ v) + (rec((1 + 1) + 1) ∗ v)) + (rec((1 + 1) + 1) ∗ v)))n)n)n; ThreeThirds ≫ (((rec((1 + 1) + 1) ∗ v) + (rec((1 + 1) + 1) ∗ v)) + (rec((1+1)+1)∗v)) = v; SubLessRight ▷ (((rec((1+1)+1)∗v)+(rec((1+1) + 1) ∗ v)) + (rec((1 + 1) + 1) ∗ v)) = v ▷ ¬̇((x + (−uz)) <= (((rec((1 + 1) + 1) ∗ v) + (rec((1 + 1) + 1) ∗ v)) + (rec((1 + 1) + 1) ∗ v)) ⇒ ¬̇(¬̇((x + (−uz)) = (((rec((1 + 1) + 1) ∗ v) + (rec((1 + 1) + 1) ∗ v)) + (rec((1 + 1) + 1) ∗ v)))n)n)n ≫ ¬̇((x + (−uz)) <= v ⇒ ¬̇(¬̇((x + (−uz)) = v)n)n)n⌉, p_0, c)]

[FromNot < f(Strong)(Helper) $\overset{\text{stmt}}{\to}$ 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 ⇒ $\forall_{obj}$(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 ⇒ ¬̇(0 <= (ε) ⇒ ¬̇(¬̇(0 = (ε))n)n)n ⇒ (n2) <= m ⇒ ¬̇(((fy)[m] + (−u(fx)[m])) <= (ε) ⇒ ¬̇(¬̇(((fy)[m] + (−u(fx)[m])) = (ε))n)n)n]

$[\mathrm{FromNot} < \mathrm{f(Strong)(Helper)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash$
$\forall\underline{(v1)}{:}\,\forall\underline{(v2)}{:}\,\forall\underline{\mathsf{m}}{:}\,\forall\underline{(n1)}{:}\,\forall\underline{(n2)}{:}\,\forall\underline{(\epsilon)}{:}\,\forall\underline{(fx)}{:}\,\forall\underline{(fy)}{:}\,\dot\neg(0 <= (rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow$
$\dot\neg(\dot\neg(0 = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n \Rightarrow \dot\neg(\underline{(n1)} <= \underline{(n2)} \Rightarrow$
$\dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}]+(-u(rec((1+1)+1)*\underline{(\epsilon)})))) <= \underline{(fx)}[\underline{(n2)}] \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}]+$
$(-u(rec((1+1)+1)*\underline{(\epsilon)})))) = \underline{(fx)}[\underline{(n2)}])n)n)n)n)n \vdash \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\forall_{\mathrm{obj}}\underline{(v2)}{:}\,\dot\neg(0 <=$
$(rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n \Rightarrow \underline{(n1)} <= \underline{(v1)} \Rightarrow$
$\underline{(n1)} <= \underline{(v2)} \Rightarrow \dot\neg(\dot\neg(|((\underline{(fx)}[\underline{(v1)}]+(-u(\underline{(fx)}[\underline{(v2)}]))| <= (rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(fx)}[\underline{(v1)}] + (-u(\underline{(fx)}[\underline{(v2)}]))| = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n \Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(fy)}[\underline{(v1)}] + (-u(\underline{(fy)}[\underline{(v2)}]))| <= (rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(fy)}[\underline{(v1)}] + (-u(\underline{(fy)}[\underline{(v2)}]))| = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n)n)n \vdash$
$\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \vdash \underline{(n2)} <= \underline{\mathsf{m}} \vdash 0 < 3 \gg \dot\neg(0 <=$
$((1+1)+1) \Rightarrow \dot\neg(\dot\neg(0 = ((1+1)+1))n)n)n; \mathrm{PositiveInverted} \rhd \dot\neg(0 <=$
$((1+1)+1) \Rightarrow \dot\neg(\dot\neg(0 = ((1+1)+1))n)n)n \gg \dot\neg(0 <= rec((1+1)+1) \Rightarrow$
$\dot\neg(\dot\neg(0 = rec((1+1)+1))n)n)n; \mathrm{PositiveFactors} \rhd \dot\neg(0 <= rec((1+1)+1) \Rightarrow$
$\dot\neg(\dot\neg(0 = rec((1+1)+1))n)n)n \rhd \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \gg \dot\neg(0 <=$
$(rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n; \mathrm{MP} \rhd \dot\neg(0 <=$
$(rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n \Rightarrow \dot\neg(\underline{(n1)} <=$
$\underline{(n2)} \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+1)+1)*\underline{(\epsilon)})))) <= \underline{(fx)}[\underline{(n2)}] \Rightarrow$
$\dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+1)+1)*\underline{(\epsilon)})))) = \underline{(fx)}[\underline{(n2)}])n)n)n)n)n \rhd \dot\neg(0 <=$
$(rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n \gg \dot\neg(\underline{(n1)} <=$
$\underline{(n2)} \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+1)+1)*\underline{(\epsilon)})))) <= \underline{(fx)}[\underline{(n2)}] \Rightarrow$
$\dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+1)+1)*\underline{(\epsilon)})))) =$
$\underline{(fx)}[\underline{(n2)}])n)n)n)n)n; \mathrm{FirstConjunct} \rhd \dot\neg(\underline{(n1)} <= \underline{(n2)} \Rightarrow$
$\dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+1)+1)*\underline{(\epsilon)})))) <= \underline{(fx)}[\underline{(n2)}] \Rightarrow$
$\dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}]+(-u(rec((1+1)+1)*\underline{(\epsilon)})))) = \underline{(fx)}[\underline{(n2)}])n)n)n)n)n \gg \underline{(n1)} <=$
$\underline{(n2)}; \mathrm{SecondConjunct} \rhd \dot\neg(\underline{(n1)} <= \underline{(n2)} \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+$
$1)+1)*\underline{(\epsilon)})))) <= \underline{(fx)}[\underline{(n2)}] \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+1)+1)*\underline{(\epsilon)})))) =$
$\underline{(fx)}[\underline{(n2)}])n)n)n)n)n \gg \dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+1)+1)*\underline{(\epsilon)})))) <=$
$\underline{(fx)}[\underline{(n2)}] \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+1)+1)*\underline{(\epsilon)})))) =$
$\underline{(fx)}[\underline{(n2)}])n)n)n; \mathrm{SwitchTerms}(x - y < z) \rhd \dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+1)+$
$1)*\underline{(\epsilon)})))) <= \underline{(fx)}[\underline{(n2)}] \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(rec((1+1)+1)*\underline{(\epsilon)})))) =$
$\underline{(fx)}[\underline{(n2)}])n)n)n \gg \dot\neg(((\underline{(fy)}[\underline{(n2)}] + (-u(\underline{(fx)}[\underline{(n2)}]))) <= (rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow$
$\dot\neg(\dot\neg(((\underline{(fy)}[\underline{(n2)}]+(-u(\underline{(fx)}[\underline{(n2)}]))) = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n; \mathrm{leqTransitivity} \rhd$
$\underline{(n1)} <= \underline{(n2)} \rhd \underline{(n2)} <= \underline{\mathsf{m}} \gg \underline{(n1)} <= \underline{\mathsf{m}}; \mathrm{A4} @ \underline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\underline{(v1)}{:}\,\forall_{\mathrm{obj}}\underline{(v2)}{:}\,\dot\neg(0 <=$
$(rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n \Rightarrow \underline{(n1)} <= \underline{(v1)} \Rightarrow$
$\underline{(n1)} <= \underline{(v2)} \Rightarrow \dot\neg(\dot\neg(|((\underline{(fx)}[\underline{(v1)}]+(-u(\underline{(fx)}[\underline{(v2)}]))| <= (rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(fx)}[\underline{(v1)}] + (-u(\underline{(fx)}[\underline{(v2)}]))| = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n \Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(fy)}[\underline{(v1)}] + (-u(\underline{(fy)}[\underline{(v2)}]))| <= (rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow$
$\dot\neg(\dot\neg(|((\underline{(fy)}[\underline{(v1)}] + (-u(\underline{(fy)}[\underline{(v2)}]))| = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n)n)n \gg$
$\forall_{\mathrm{obj}}\underline{(v2)}{:}\,\dot\neg(0 <= (rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(0 = (rec((1+1)+1)*\underline{(\epsilon)}))n)n)n \Rightarrow$
$\underline{(n1)} <= \underline{\mathsf{m}} \Rightarrow \underline{(n1)} <= \underline{(v2)} \Rightarrow \dot\neg(\dot\neg(|((\underline{(fx)}[\underline{\mathsf{m}}] + (-u(\underline{(fx)}[\underline{(v2)}]))| <=$
$(rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(|((\underline{(fx)}[\underline{\mathsf{m}}] + (-u(\underline{(fx)}[\underline{(v2)}]))| =$
$(rec((1+1)+1)*\underline{(\epsilon)}))n)n)n \Rightarrow \dot\neg(\dot\neg(|((\underline{(fy)}[\underline{\mathsf{m}}] + (-u(\underline{(fy)}[\underline{(v2)}]))| <=$
$(rec((1+1)+1)*\underline{(\epsilon)}) \Rightarrow \dot\neg(\dot\neg(|((\underline{(fy)}[\underline{\mathsf{m}}] + (-u(\underline{(fy)}[\underline{(v2)}]))| =$
$(rec((1+1)+1)*\underline{(\epsilon)}))n)n)n)n)n; \mathrm{A4} @ \underline{(n2)} \rhd \forall_{\mathrm{obj}}\underline{(v2)}{:}\,\dot\neg(0 <=$

(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; 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; FromNot < f(Strong)(Helper2) ▷ ¬̇ (|((fy)[m] + (−u(fy)[(n2)]))| <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇ (¬̇ (|((fy)[m] + (−u(fy)[(n2)]))| = (rec((1 + 1) + 1) ∗ (ϵ)))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 ▷ ¬̇ (((fy)[(n2)] + (−u(fx)[(n2)])) <= (rec((1 + 1) + 1) ∗ (ϵ)) ⇒ ¬̇ (¬̇ (((fy)[(n2)] + (−u(fx)[(n2)])) = (rec((1 + 1) + 1) ∗ (ϵ)))n)n)n ≫ ¬̇ (((fy)[m] + (−u(fx)[m])) <= (ϵ) ⇒ ¬̇ (¬̇ (((fy)[m] + (−u(fx)[m])) = (ϵ))n)n)n; ∀(v1): ∀(v2): ∀m: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): Ded ▷ ∀(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 ⊢ ∸(((fy)[m] + (−u(fx)[m])) <= (ϵ) ⇒
∸(∸(((fy)[m] + (−u(fx)[m])) = (ϵ))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 ⇒ ∀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⌉, p₀, c)]

[FromNot < f(Strong) →(stmt) SystemQ ⊢
∀(v1): ∀(v2): ∀m: ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ∸(∸(∀obj(ϵ): ∸(∸(∀obj n: ∸(∀obj m: ∸(∸(0
(ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(n <= m ⇒ (fx)[m] <= ((fy)[m] +
(−u(ϵ))))n)n)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) →(proof) λc.λx.𝒫(⌈SystemQ ⊢
∀(v1): ∀(v2): ∀m: ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ∸(∸(∀obj(ϵ): ∸(∸(∀obj n: ∸(∀obj m: ∸(∸(0
(ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(n <= m ⇒ (fx)[m] <=
((fy)[m] + (−u(ϵ))))n)n)n)n)n)n)n ⊢ FromNot <
f(Weak) ⊳ ∸(∸(∀obj(ϵ): ∸(∸(∀obj n: ∸(∀obj m: ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 =
(ϵ))n)n)n ⇒ ∸(n <= m ⇒ (fx)[m] <= ((fy)[m] + (−u(ϵ))))n)n)n)n)n)n)n ≫
∀obj(ϵ): ∀obj n: ∸(∀obj(n2): ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒ ∸(n <=
(n2) ⇒ ∸(∸(((fy)[(n2)] + (−u(ϵ))) <= (fx)[(n2)] ⇒
∸(∸(((fy)[(n2)] + (−u(ϵ))) = (fx)[(n2)])n)n)n)n)n)n)n; A4 @(rec((1 + 1) + 1) ∗
(ϵ)) ⊳ ∀obj(ϵ): ∀obj n: ∸(∀obj(n2): ∸(∸(0 <= (ϵ) ⇒ ∸(∸(0 = (ϵ))n)n)n ⇒
∸(n <= (n2) ⇒ ∸(∸(((fy)[(n2)] + (−u(ϵ))) <= (fx)[(n2)] ⇒ ∸(∸(((fy)[(n2)] +
(−u(ϵ))) = (fx)[(n2)])n)n)n)n)n)n)n ≫ ∀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; 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; 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)) ▷
$\forall_{obj}$(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) + 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 ⇒ $\forall_{obj}$(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 ⇒ ¬̇(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 ⇒
$\forall_{obj}$(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 ⇒ ¬̇(0 <=
(ε) ⇒ ¬̇(¬̇(0 = (ε))n)n)n ⇒ (n2) <= m ⇒ ¬̇(((fy)[m] + (−u(fx)[m])) <=
(ε) ⇒ ¬̇(¬̇(((fy)[m] + (−u(fx)[m])) = (ε))n)n)n ▷ ¬̇($\forall_{obj}$(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 ▷ ¬̇($\forall_{obj}$(n1): ¬̇($\forall_{obj}$(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)n)n ≫

$\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] +$
$(-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{(\mathrm{fy})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])) = \underline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{fromNotSameF(Strongest)(Helper2)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{x}}\colon\forall\underline{\mathsf{y}}\colon\forall\underline{\mathsf{z}}\colon\forall\underline{\mathsf{u}}\colon\forall\underline{\mathsf{v}}\colon \dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))| <=$
$(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\underline{\mathsf{v}} <= |(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| \vdash \dot{\neg}((\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) <= |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))| \Rightarrow$
$\dot{\neg}(\dot{\neg}((\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) = |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))|)\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{fromNotSameF(Strongest)(Helper2)} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{x}}\colon\forall\underline{\mathsf{y}}\colon\forall\underline{\mathsf{z}}\colon\forall\underline{\mathsf{u}}\colon\forall\underline{\mathsf{v}}\colon \dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))| <=$
$(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\underline{\mathsf{v}} <= |(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| \vdash \mathrm{NumericalDifference} \gg |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| =$
$|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|; \mathrm{SubLessLeft} \rhd |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = |(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| \rhd \dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| <=$
$(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))| = (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| = (\mathrm{rec}((1+1)+$
$1) * \underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessNegated} \rhd \dot{\neg}(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| <= (\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{\mathsf{y}}+(-\mathrm{u}\underline{\mathsf{x}}))| = (\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}})) <=$
$(-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}})) =$
$(-\mathrm{u}|(\underline{\mathsf{y}}+(-\mathrm{u}\underline{\mathsf{x}}))|))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{LessNegated} \rhd \dot{\neg}(|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))| <= (\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}}) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))| = (\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}}))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}})) <=$
$(-\mathrm{u}|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}})) =$
$(-\mathrm{u}|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{AddEquations(LeqLess)} \rhd \underline{\mathsf{v}} <=$
$|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| \rhd \dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}})) <= (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|) \Rightarrow$
$\dot{\neg}(\dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}})) = (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|))\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) <= (|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|)) \Rightarrow$
$\dot{\neg}(\dot{\neg}((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) = (|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} +$
$(-\mathrm{u}\underline{\mathsf{x}}))|)))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{AddEquations(Less)} \rhd \dot{\neg}((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) <=$
$(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|)) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) =$
$(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|)))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}})) <=$
$(-\mathrm{u}|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}(\mathrm{rec}((1+1)+1)*\underline{\mathsf{v}})) = (-\mathrm{u}|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|))\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}(((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) <=$
$((|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|)) + (-\mathrm{u}|(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(((\underline{\mathsf{v}} + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) + (-\mathrm{u}(\mathrm{rec}((1+1)+1) * \underline{\mathsf{v}}))) =$
$((|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| + (-\mathrm{u}|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|)) + (-\mathrm{u}|(\underline{\mathsf{z}} +$
$(-\mathrm{u}\underline{\mathsf{u}}))|)))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{insertTwoMiddleTerms(Numerical)} \gg |(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{u}}))| <=$
$((|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| + |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))|) + |(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|); \mathrm{plusAssociativity} \gg$
$((|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| + |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))|) + |(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|) =$
$(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| + (|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))| + |(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|)); \mathrm{plusCommutativity} \gg$
$(|(\underline{\mathsf{y}}+(-\mathrm{u}\underline{\mathsf{x}}))|+(|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{z}}))|+|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|)) = ((|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{z}}))|+|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|)+$
$|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|); \mathrm{eqTransitivity} \rhd ((|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| + |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))|) + |(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|) =$
$(|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| + (|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))| + |(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|)) \rhd (|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| + (|(\underline{\mathsf{x}} +$
$(-\mathrm{u}\underline{\mathsf{z}}))| + |(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|)) = ((|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))| + |(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|) + |(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|) \gg$
$((|(\underline{\mathsf{y}}+(-\mathrm{u}\underline{\mathsf{x}}))|+|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{z}}))|)+|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|) = ((|(\underline{\mathsf{x}}+(-\mathrm{u}\underline{\mathsf{z}}))|+|(\underline{\mathsf{z}}+(-\mathrm{u}\underline{\mathsf{u}}))|)+$
$|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))|); \mathrm{subLeqRight} \rhd ((|(\underline{\mathsf{y}} + (-\mathrm{u}\underline{\mathsf{x}}))| + |(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}}))|) + |(\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))|) =$

$(((|(\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}(\mathrm{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}(\mathrm{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(rec((1 + 1) + 1) * \underline{v}))) + (-u(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(rec((1 + 1) + 1) * \underline{v}))) + (-u(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(rec((1 + 1) + 1) * \underline{v}))) + (-u(rec((1 + 1) + 1) * \underline{v}))) <= |(\underline{x} + (-u\underline{z}))| \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{v} + (-u(rec((1 + 1) + 1) * \underline{v}))) + (-u(rec((1 + 1) + 1) * \underline{v}))) = |(\underline{x} + (-u\underline{z}))|)n)n)n; \mathrm{ThreeThirds} \gg (((rec((1 + 1) + 1) * \underline{v}) + (rec((1 + 1) + 1) * \underline{v})) + (rec((1 + 1) + 1) * \underline{v})) = \underline{v}; \mathrm{PositiveToRight}(\mathrm{Eq}) \rhd (((rec((1 + 1) + 1) * \underline{v}) + (rec((1 + 1) + 1) * \underline{v})) + (rec((1 + 1) + 1) * \underline{v})) = \underline{v} \gg ((rec((1 + 1) + 1) * \underline{v}) + (rec((1 + 1) + 1) * \underline{v})) = (\underline{v} + (-u(rec((1 + 1) + 1) * \underline{v}))); \mathrm{PositiveToRight}(\mathrm{Eq}) \rhd ((rec((1 + 1) + 1) * \underline{v}) + (rec((1 + 1) + 1) * \underline{v})) = (\underline{v} + (-u(rec((1 + 1) + 1) * \underline{v}))) \gg (rec((1 + 1) + 1) * \underline{v}) = ((\underline{v} + (-u(rec((1 + 1) + 1) * \underline{v}))) + (-u(rec((1 + 1) + 1) * \underline{v}))); \mathrm{eqSymmetry} \rhd (rec((1 + 1) + 1) * \underline{v}) = ((\underline{v} + (-u(rec((1 + 1) + 1) * \underline{v}))) + (-u(rec((1 + 1) + 1) * \underline{v}))) \gg ((\underline{v} + (-u(rec((1 + 1) + 1) * \underline{v}))) + (-u(rec((1 + 1) + 1) * \underline{v}))) = (rec((1 + 1) + 1) * \underline{v}); \mathrm{SubLessLeft} \rhd ((\underline{v} + (-u(rec((1 + 1) + 1) * \underline{v}))) + (-u(rec((1 + 1) + 1) * \underline{v}))) = (rec((1 + 1) + 1) * \underline{v}) \rhd \dot{\neg}(((\underline{v} + (-u(rec((1 + 1) + 1) * \underline{v}))) + (-u(rec((1 + 1) + 1) * \underline{v}))) <= |(\underline{x} + (-u\underline{z}))| \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{v} + (-u(rec((1 + 1) + 1) * \underline{v}))) + (-u(rec((1 + 1) + 1) * \underline{v}))) = |(\underline{x} + (-u\underline{z}))|)n)n)n \gg \dot{\neg}((rec((1 + 1) + 1) * \underline{v}) <= |(\underline{x} + (-u\underline{z}))| \Rightarrow \dot{\neg}(\dot{\neg}((rec((1 + 1) + 1) * \underline{v}) = |(\underline{x} + (-u\underline{z}))|)n)n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{fromNotSameF(Strongest)(Helper)} \stackrel{stmt}{\rightarrow} \mathrm{SystemQ} \vdash \forall\overline{(v1)}: \forall\overline{(v2)}: \forall\underline{m}: \forall\overline{(n1)}: \forall\overline{(n2)}: \forall\overline{(\epsilon)}: \forall\overline{(fx)}: \forall\overline{(fy)}: \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow (n1) <= (n2) \Rightarrow \dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \Rightarrow \forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <= (rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow (n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(0 <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot{\neg}((n2) <= \underline{m} \Rightarrow \dot{\neg}((rec((1 + 1) + 1) * (\epsilon)) <= |((fx)[\underline{m}] + (-u(fy)[\underline{m}]))| \Rightarrow \dot{\neg}(\dot{\neg}((rec((1 + 1) + 1) * (\epsilon)) = |((fx)[\underline{m}] + (-u(fy)[\underline{m}]))|)n)n)n)n)n]$

$[\mathrm{fromNotSameF(Strongest)(Helper)} \stackrel{proof}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil \mathrm{SystemQ} \vdash \forall\overline{(v1)}: \forall\overline{(v2)}: \forall\underline{m}: \forall\overline{(n1)}: \forall\overline{(n2)}: \forall\overline{(\epsilon)}: \forall\overline{(fx)}: \forall\overline{(fy)}: \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow (n1) <= (n2) \Rightarrow \dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \vdash \forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <= (rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$

(n1) <= (v2) ⇒ ¬̇(¬̇(|((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 ⊳ $\forall_{obj}$(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 ≫
$\forall_{obj}$(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) ⊳ $\forall_{obj}$(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 ⊢ $\forall_{\text{obj}}$(v1): $\forall_{\text{obj}}$(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 ⊢
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) ⇒

$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n)n)n \gg \dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n; 0 < 1/3 \gg \dot{\neg}(0 <= rec((1 + 1) + 1) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$rec((1 + 1) + 1))n)n)n; \mathrm{PositiveFactors} \rhd \dot{\neg}(0 <= rec((1 + 1) + 1) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$rec((1 + 1) + 1))n)n)n \rhd \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \gg \dot{\neg}(0 <=$
$(rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1 + 1) + 1) *$
$(\epsilon)))n)n)n; \forall(v1): \forall(v2): \forall\underline{\mathsf{m}}: \forall(n1): \forall(n2): \forall(\epsilon): \forall(fx): \forall(fy): \mathrm{Ded} \rhd$
$\forall(v1): \forall(v2): \forall\underline{\mathsf{m}}: \forall(n1): \forall(n2): \forall(\epsilon): \forall(fx): \forall(fy): \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (n2) \Rightarrow \dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \vdash \forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)]+(-u(fy)[(v2)]))| = (rec((1+1)+1)*(\epsilon)))n)n)n)n)n \vdash (n2) <=$
$\underline{\mathsf{m}} \vdash \dot{\neg}((rec((1 + 1) + 1) * (\epsilon)) <= |((fx)[\underline{\mathsf{m}}] + (-u(fy)[\underline{\mathsf{m}}]))| \Rightarrow \dot{\neg}(\dot{\neg}((rec((1 +$
$1) + 1) * (\epsilon)) = |((fx)[\underline{\mathsf{m}}] + (-u(fy)[\underline{\mathsf{m}}]))|)n)n)n \gg \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (n2) \Rightarrow \dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \Rightarrow \forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n)n)n \Rightarrow$
$(n2) <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}((rec((1 + 1) + 1) * (\epsilon)) <= |((fx)[\underline{\mathsf{m}}] + (-u(fy)[\underline{\mathsf{m}}]))| \Rightarrow$
$\dot{\neg}(\dot{\neg}((rec((1 + 1) + 1) * (\epsilon)) = |((fx)[\underline{\mathsf{m}}] + (-u(fy)[\underline{\mathsf{m}}]))|)n)n)n; \mathrm{Ded} \rhd$
$\forall(v1): \forall(v2): \forall(n1): \forall(n2): \forall(\epsilon): \forall(fx): \forall(fy): \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (n2) \Rightarrow \dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \vdash \forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <=$
$(rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow (n1) <=$
$(v1) \Rightarrow (n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <=$
$(rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <=$
$(rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(rec((1 + 1) + 1) * (\epsilon)))n)n)n)n)n \vdash \dot{\neg}(0 <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(rec((1 + 1) + 1) * (\epsilon)))n)n)n \gg \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$(n1) <= (n2) \Rightarrow \dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \Rightarrow \forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <=$
$(rec((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (rec((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (rec((1 + 1) + 1) * (\epsilon)))n)n)n)n)n \Rightarrow$
$\dot{\neg}(0 <= (rec((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec((1 + 1) + 1) *$
$(\epsilon)))n)n)n; \mathrm{JoinConjuncts}(2conditions) \rhd \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (n2) \Rightarrow \dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \Rightarrow \forall_{obj}(v1): \forall_{obj}(v2): \dot{\neg}(0 <=$

$(\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*(\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}(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| = (\mathrm{rec}((1+1)+1)*(\epsilon)))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| = (\mathrm{rec}((1+1)+1)*(\epsilon)))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(0 <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*(\epsilon)))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})} \Rightarrow \dot{\neg}(|((\mathrm{fx})[(\mathrm{n2})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{n2})]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[(\mathrm{n2})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{n2})]))| = (\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)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*(\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}(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| = (\mathrm{rec}((1+1)+1)*(\epsilon)))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| = (\mathrm{rec}((1+1)+1)*(\epsilon)))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}((\mathrm{rec}((1+1)+1)*(\epsilon)) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot{\neg}(\dot{\neg}((\mathrm{rec}((1+1)+1)*(\epsilon)) = |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\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 \underline{(\mathrm{n1})} <= \underline{(\mathrm{n2})} \Rightarrow \dot{\neg}(|((\mathrm{fx})[(\mathrm{n2})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{n2})]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[(\mathrm{n2})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{n2})]))| = (\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)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*(\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}(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fx})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fx})[(\mathrm{v2})]))| = (\mathrm{rec}((1+1)+1)*(\epsilon)))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((\mathrm{fy})[(\mathrm{v1})] + (-\mathrm{u}(\mathrm{fy})[(\mathrm{v2})]))| = (\mathrm{rec}((1+1)+1)*(\epsilon)))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\dot{\neg}(0 <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\mathrm{rec}((1+1)+1)*(\epsilon)))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{n2})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}((\mathrm{rec}((1+1)+1)*(\epsilon)) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot{\neg}(\dot{\neg}((\mathrm{rec}((1+1)+1)*(\epsilon)) = |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{fromNotSameF}(\mathrm{Strongest}) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\mathrm{n1})}\colon \forall\underline{(\mathrm{n2})}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}($ $\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\mathrm{n1})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\underline{(\mathrm{n1})} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot{\neg}(\dot{\neg}((\epsilon) = |(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\mathrm{fy})}[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{fromNotSameF}(\mathrm{Strongest}) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{(\mathrm{v1})}\colon \forall\underline{(\mathrm{v2})}\colon \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\mathrm{n1})}\colon \forall\underline{(\mathrm{n2})}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(\mathrm{fx})}\colon \forall\underline{(\mathrm{fy})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}($ $\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 \underline{\mathrm{Repetition}} \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}(\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}}]))| =$

$(\epsilon))n)n)n)n)n)n; \mathrm{Ded} \rhd \dot\neg(\forall_{obj}(\epsilon): \dot\neg(\forall_{obj}\mathsf{n}: \dot\neg(\forall_{obj}\mathsf{m}: \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow \mathsf{n} <= \mathsf{m} \Rightarrow \dot\neg(|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| = (\epsilon))n)n)n)n)n)n \gg \dot\neg(\forall_{obj}(\epsilon): \dot\neg(\forall_{obj}(n1): \dot\neg(\forall_{obj}(n2): \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; \mathrm{AEA-negated} \rhd \dot\neg(\forall_{obj}(\epsilon): \dot\neg(\forall_{obj}(n1): \dot\neg(\forall_{obj}(n2): \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 \gg \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; \mathrm{Cauchy}(2) \gg \forall_{obj}(\epsilon): \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(\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; \mathrm{A4} @(rec((1+1)+1) * (\epsilon)) \rhd \forall_{obj}(\epsilon): \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(\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 \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; \mathrm{fromNotSameF(Strongest)(Helper)} \gg \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; \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$

$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n)n)n \Rightarrow$
$\dot\neg(\dot\neg(0 <= (\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) <= |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow$
$\dot\neg(\dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) = |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n \rhd$
$\dot\neg(\forall_{\mathrm{obj}}(\epsilon){:}\ \dot\neg(\forall_{\mathrm{obj}}(n1){:}\ \dot\neg(\forall_{\mathrm{obj}}(n2){:}\ \dot\neg(\dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))n)n)n \Rightarrow$
$(n1) <= (n2) \Rightarrow \dot\neg(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(|((fx)[(n2)] +$
$(-u(fy)[(n2)]))| = (\epsilon))n)n)n)n)n)n)n)n \gg \forall_{\mathrm{obj}}(v1){:}\ \forall_{\mathrm{obj}}(v2){:}\ \dot\neg(0 <=$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow (n1) <=$
$(v1) \Rightarrow (n1) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <=$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <=$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(\mathrm{rec}((1+1)+1)*(\epsilon)))n)n)n)n)n \Rightarrow \dot\neg(\dot\neg(0 <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) <=$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow \dot\neg(\dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) =$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n; \mathrm{ExistMP} \rhd \forall_{\mathrm{obj}}(v1){:}\ \forall_{\mathrm{obj}}(v2){:}\ \dot\neg(0 <=$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow (n1) <=$
$(v1) \Rightarrow (n1) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| <=$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| =$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <=$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| =$
$(\mathrm{rec}((1+1)+1)*(\epsilon)))n)n)n)n)n \Rightarrow \dot\neg(\dot\neg(0 <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) <=$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow \dot\neg(\dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) =$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n \rhd \dot\neg(\forall_{\mathrm{obj}}(n1){:}\ \dot\neg(\forall_{\mathrm{obj}}(v1){:}\ \forall_{\mathrm{obj}}(v2){:}\ \dot\neg(0 <=$
$(\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}((1+1)+1)*(\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot\neg(\dot\neg(|((fx)[(v1)]+(-u(fx)[(v2)]))| <= (\mathrm{rec}((1+1)+1)*(\epsilon)) \Rightarrow$
$\dot\neg(\dot\neg(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow$
$\dot\neg(\dot\neg(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n)n)n)n)n \gg$
$\dot\neg(\dot\neg(0 <= (\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) <= |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow$
$\dot\neg(\dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) = |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n; \mathrm{Gen} \rhd$
$\dot\neg(\dot\neg(0 <= (\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow$
$\dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) <= |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow$
$\dot\neg(\dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) = |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n \gg$
$\forall_{\mathrm{obj}}\mathsf{m}{:}\ \dot\neg(\dot\neg(0 <= (\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg((n2) <= \mathsf{m} \Rightarrow \dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) <=$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow \dot\neg(\dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) =$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n; \mathrm{IntroExist}\ @\ (n2) \rhd \forall_{\mathrm{obj}}\mathsf{m}{:}\ \dot\neg(\dot\neg(0 <=$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 = (\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg((n2) <=$
$\mathsf{m} \Rightarrow \dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) <= |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow$
$\dot\neg(\dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) = |((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))|)n)n)n)n)n \gg$
$\dot\neg(\forall_{\mathrm{obj}}\mathsf{n}{:}\ \dot\neg(\forall_{\mathrm{obj}}\mathsf{m}{:}\ \dot\neg(\dot\neg(0 <= (\mathrm{rec}((1 + 1) + 1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\mathrm{rec}((1 + 1) + 1) * (\epsilon)))n)n)n \Rightarrow \dot\neg((n1) <= \mathsf{m} \Rightarrow \dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) <=$
$|((fx)[\mathsf{m}] + (-u(fy)[\mathsf{m}]))| \Rightarrow \dot\neg(\dot\neg((\mathrm{rec}((1 + 1) + 1) * (\epsilon)) =$

$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{IntroExist} @(\mathrm{rec}((1+1)+1) * (\epsilon)) \rhd$
$\dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\mathrm{rec}((1+1)+1) * (\epsilon)) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\mathrm{rec}((1+1)+1) * (\epsilon)))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\mathrm{rec}((1+1)+1) * (\epsilon)) <=$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\mathrm{rec}((1+1)+1) * (\epsilon)) =$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\forall_{\mathrm{obj}}(\epsilon)\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}(\mathrm{n1})\colon \dot\neg(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) =$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToLess(F)(Helper)} \stackrel{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon\forall(\mathrm{n1})\colon\forall(\mathrm{n2})\colon\forall(\epsilon)\colon\forall(\mathrm{fx})\colon\forall(\mathrm{fy})\colon\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) =$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$(\mathrm{n2}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] +$
$(-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n}]$

$[\mathrm{ToLess(F)(Helper)} \stackrel{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon\forall(\mathrm{n1})\colon\forall(\mathrm{n2})\colon\forall(\epsilon)\colon\forall(\mathrm{fx})\colon\forall(\mathrm{fy})\colon\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) =$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$(\mathrm{n2}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= \underline{\mathsf{m}} \vdash$
$\mathrm{MaxLeq}(1) \gg (\mathrm{n1}) <= \mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})); \mathrm{leqTransitivity} \rhd (\mathrm{n1}) <=$
$\mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) \rhd \mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= \underline{\mathsf{m}} \gg (\mathrm{n1}) <=$
$\underline{\mathsf{m}}; \mathrm{MaxLeq}(2) \gg (\mathrm{n2}) <= \mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})); \mathrm{leqTransitivity} \rhd$
$(\mathrm{n2}) <= \mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) \rhd \mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= \underline{\mathsf{m}} \gg$
$(\mathrm{n2}) <= \underline{\mathsf{m}}; \mathrm{A4} @ \underline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) =$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) =$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow$
$\dot\neg(\dot\neg((\epsilon) = |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SecondConjunct} \rhd \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) = |((\mathrm{fx})[\underline{\mathsf{m}}] +$
$(-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg (\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow$
$\dot\neg(\dot\neg((\epsilon) = |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MP} \rhd (\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <=$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) = |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n} \rhd (\mathrm{n1}) <=$
$\underline{\mathsf{m}} \gg \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) =$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FromNumericalGreater} \rhd \dot\neg((\epsilon) <=$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) = |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot\neg(\dot\neg(((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}])) <= (-\mathrm{u}(\epsilon)) \Rightarrow \dot\neg(\dot\neg(((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}])) =$
$(-\mathrm{u}(\epsilon)))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\epsilon) <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}])) \Rightarrow \dot\neg(\dot\neg((\epsilon) = ((\mathrm{fx})[\underline{\mathsf{m}}] +$
$(-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}])))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{MP2} \rhd \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow (\mathrm{n2}) <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \rhd (\mathrm{n2}) <= \underline{\mathsf{m}} \gg$

∸¬(((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): $\forall_{obj}$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 ▷ $\forall_{obj}$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): $\forall_{obj}$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 ⊢ (fy)[m] <= ((fx)[m] + (−u(ε))) ≫ $\forall_{obj}$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 ⇒ (fy)[m] <= ((fx)[m] + (−u(ε))); Ded ▷ ∀m: ∀(n1): ∀(n2): ∀(ε): ∀(fx): ∀(fy): $\forall_{obj}$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 ⊢

$\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow (\mathrm{n2}) <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \vdash \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow$
$\dot\neg(\dot\neg((\epsilon) = |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow (\mathrm{n2}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{JoinConjuncts}(\mathrm{2conditions}) \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) =$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$(\mathrm{n2}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) <= (\epsilon) \Rightarrow$
$\dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg((\epsilon) <= |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) = |((\mathrm{fx})[\underline{\mathsf{m}}] +$
$(-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow (\mathrm{n2}) <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}]+(-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}]+(-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\mathrm{if}((\mathrm{n2}) <= (\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))) \gg$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg((\mathrm{n1}) <= \underline{\mathsf{m}} \Rightarrow \dot\neg((\epsilon) <=$
$|((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg((\epsilon) = |((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\underline{\mathsf{m}}]))|)\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow (\mathrm{n2}) <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fx})[\underline{\mathsf{m}}])) =$
$(\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\dot\neg(0 <= (\epsilon) \Rightarrow \dot\neg(\dot\neg(0 = (\epsilon))\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\mathrm{if}((\mathrm{n2}) <=$
$(\mathrm{n1}), (\mathrm{n1}), (\mathrm{n2})) <= \underline{\mathsf{m}} \Rightarrow (\mathrm{fy})[\underline{\mathsf{m}}] <= ((\mathrm{fx})[\underline{\mathsf{m}}] + (-\mathrm{u}(\epsilon))))\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{ToLess}(\mathrm{F}) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall(\mathrm{n1})\colon \forall(\mathrm{n2})\colon \forall(\epsilon)\colon \forall(\mathrm{fx})\colon \forall(\mathrm{fy})\colon \dot\neg(\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <=$
$((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fy})[\overline{\mathsf{m}}] <= ((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{ToLess}(\mathrm{F}) \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash$
$\forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall(\mathrm{n1})\colon \forall(\mathrm{n2})\colon \forall(\epsilon)\colon \forall(\mathrm{fx})\colon \forall(\mathrm{fy})\colon \dot\neg(\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <=$
$((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{Repetition} \rhd \dot\neg(\dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <= ((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot\neg(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot\neg(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}(\mathrm{fy})[\overline{\mathsf{m}}]))| =$

$\overline{(\epsilon)})n)n)n)n)n)n \gg \dot\neg(\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n; \mathrm{FromNegatedOr} \rhd$
$\dot\neg(\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow$
$\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n)n \gg \dot\neg(\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow \dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n)n; \mathrm{FirstConjunct} \rhd$
$\dot\neg(\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <=$
$\overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n)n)n \gg \dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n; \mathrm{SecondConjunct} \rhd$
$\dot\neg(\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <=$
$\overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n)n)n \gg \dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n; \mathrm{FromNot} <$
$\mathrm{f(Strong)} \rhd \dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \gg$
$\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{(n2)} <= \underline{\mathsf{m}} \Rightarrow$
$\dot\neg((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) =$
$\underline{(\epsilon)})n)n; \mathrm{fromNotSameF(Strongest)} \rhd \dot\neg(\forall_{obj}\overline{(\epsilon)}\colon \dot\neg(\forall_{obj}\overline{\mathsf{n}}\colon \dot\neg(\forall_{obj}\overline{\mathsf{m}}\colon \dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-u\underline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n \gg$
$\dot\neg(\forall_{obj}\underline{(\epsilon)}\colon \dot\neg(\dot\neg(\forall_{obj}\underline{(n1)}\colon \dot\neg(\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\underline{(n1)} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\underline{(\epsilon)} <= |(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(fy)}[\underline{\mathsf{m}}]))| \Rightarrow \dot\neg(\dot\neg(\underline{(\epsilon)} =$
$|(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(fy)}[\underline{\mathsf{m}}]))|)n)n)n)n)n)n)n)n; \mathrm{ToLess(F)(Helper)} \gg$
$\forall_{obj}\underline{\mathsf{m}}\colon \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{(n1)} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\underline{(\epsilon)} <=$

$|(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(fy)}[\underline{\mathsf{m}}]))| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(\epsilon)} = |(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(fy)}[\underline{\mathsf{m}}]))|)n)n)n)n)n \Rightarrow$
$\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{(n2)} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(((\underline{(fy)}[\underline{\mathsf{m}}] +$
$(-u\underline{(fx)}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{(n2)} <= \underline{(n1)}, \underline{(n1)}, \underline{(n2)}) <= \underline{\mathsf{m}} \Rightarrow$
$\underline{(fy)}[\underline{\mathsf{m}}] <= (\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n; \mathrm{TwiceExistMP} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{(n1)} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(\underline{(\epsilon)} <= |(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(fy)}[\underline{\mathsf{m}}]))| \Rightarrow$
$\dot{\neg}(\dot{\neg}(\underline{(\epsilon)} = |(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(fy)}[\underline{\mathsf{m}}]))|)n)n)n)n)n \Rightarrow \dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \underline{(n2)} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{(n2)} <= \underline{(n1)}, \underline{(n1)}, \underline{(n2)}) <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <=$
$(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(n1)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{(n1)} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(\underline{(\epsilon)} <= |(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(fy)}[\underline{\mathsf{m}}]))| \Rightarrow$
$\dot{\neg}(\dot{\neg}(\underline{(\epsilon)} = |(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(fy)}[\underline{\mathsf{m}}]))|)n)n)n)n)n)n)n)n)n \gg \dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{(n2)} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{(n2)} <= \underline{(n1)}, \underline{(n1)}, \underline{(n2)}) <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <=$
$(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n; \mathrm{MP} \rhd \dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{(n2)} <=$
$\underline{\mathsf{m}} \Rightarrow \dot{\neg}(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{(n2)} <=$
$\underline{(n1)}, \underline{(n1)}, \underline{(n2)}) <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <= (\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n \rhd \dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \underline{(n2)} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(fx)}[\underline{\mathsf{m}}])) = \underline{(\epsilon)})n)n)n \gg \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{(n2)} <= \underline{(n1)}, \underline{(n1)}, \underline{(n2)}) <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <=$
$(\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n; \mathrm{Gen} \rhd \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\mathrm{if}(\underline{(n2)} <= \underline{(n1)}, \underline{(n1)}, \underline{(n2)}) <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <= (\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n \gg$
$\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{(n2)} <=$
$\underline{(n1)}, \underline{(n1)}, \underline{(n2)}) <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <= (\underline{(fx)}[\underline{\mathsf{m}}] +$
$(-u\underline{(\epsilon)})))n)n; \mathrm{IntroExist} @ \mathrm{if}(\underline{(n2)} <= \underline{(n1)}, \underline{(n1)}, \underline{(n2)}) \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\mathrm{if}(\underline{(n2)} <= \underline{(n1)}, \underline{(n1)}, \underline{(n2)}) <= \underline{\mathsf{m}} \Rightarrow$
$\underline{(fy)}[\underline{\mathsf{m}}] <= (\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n \gg \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <= (\underline{(fx)}[\underline{\mathsf{m}}] +$
$(-u\underline{(\epsilon)})))n)n)n)n; \mathrm{IntroExist} @ \underline{(\epsilon)} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <= (\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <= (\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n; \mathrm{Ded} \rhd$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fy)}[\underline{\mathsf{m}}] <= (\underline{(fx)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fy)}[\overline{\mathsf{m}}] <= (\underline{(fx)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n; \mathrm{Repetition} \rhd$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fy)}[\overline{\mathsf{m}}] <= (\underline{(fx)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fy)}[\overline{\mathsf{m}}] <= (\underline{(fx)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n], p_0, \mathsf{c})]$

$[\mathrm{From!!} \stackrel{\mathrm{stmt}}{==\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \dot{\neg}(\{ph \in P(\{ph \in P(\{ph \in$

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

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

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

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

$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \rhd \dot{\neg}(\{ph \in P(\{ph \in P(\{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(\mathrm{Union}(\{N, Q\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(fy)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\overline{(fy)}[\overline{\mathsf{m}}] +$
$(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \gg \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-u\overline{(fy)}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(fx)}[\overline{\mathsf{m}}] + (-u\overline{(fy)}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n)n\rceil, p_0, \mathsf{c})]$

$[\mathrm{ToLess}(R) \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$
$\forall\overline{(fx)}\colon \forall\overline{(fy)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(\dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \overline{(fx)}[\overline{\mathsf{m}}] <= (\overline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \Rightarrow$
$\{ph \in P(\{ph \in P(\{ph \in P(P(\mathrm{Union}(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$

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

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

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

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

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

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

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

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

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

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

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

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

$\dot{\neg}(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow (\mathrm{fx})[\overline{\mathsf{m}}] <= ((\mathrm{fy})[\overline{\mathsf{m}}] + (-\mathrm{u}\overline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$

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

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

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

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

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

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

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

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

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

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

$\dot{\neg}(\dot{\neg}(|((\mathrm{fx})[\overline{\mathsf{m}}] + (-\mathrm{u}\mathsf{d}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} = \{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in \mathrm{P}(\{\mathrm{ph} \in$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$\dot\neg(\dot\neg(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

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

[FromNotSameF(Strong)(Helper2) $\stackrel{\text{stmt}}{\to}$ 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) $\stackrel{\text{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\lceil$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 $\rhd ((-\mathrm{u}(\mathrm{rec}(1+1) * \underline{\mathsf{v}})) + (-\mathrm{u}(\mathrm{rec}(1+1) * \underline{\mathsf{v}}))) = (-\mathrm{u}\underline{\mathsf{v}}) \rhd \dot\neg(((-\mathrm{u}(\mathrm{rec}(1+1) * \underline{\mathsf{v}})) + (-\mathrm{u}(\mathrm{rec}(1+1) * \underline{\mathsf{v}}))) <= ((-\mathrm{u}|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))|) + (-\mathrm{u}|(\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))|)) \Rightarrow \dot\neg(\dot\neg(((-\mathrm{u}(\mathrm{rec}(1+1) * \underline{\mathsf{v}})) + (-\mathrm{u}(\mathrm{rec}(1+1) * \underline{\mathsf{v}}))) = ((-\mathrm{u}|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))|) + (-\mathrm{u}|(\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))|)))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot\neg((-\mathrm{u}\underline{\mathsf{v}}) <= ((-\mathrm{u}|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))|) + (-\mathrm{u}|(\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))|)) \Rightarrow \dot\neg(\dot\neg((-\mathrm{u}\underline{\mathsf{v}}) = ((-\mathrm{u}|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))|) + (-\mathrm{u}|(\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))|)))\mathrm{n})\mathrm{n})\mathrm{n}$; plusCommutativity $\gg ((-\mathrm{u}|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))|) + (-\mathrm{u}|(\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))|)) = ((-\mathrm{u}|(\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))|) + (-\mathrm{u}|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))|))$; SubLessRight $\rhd ((-\mathrm{u}|(\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{y}}))|) + (-\mathrm{u}|(\underline{\mathsf{u}} + (-\mathrm{u}\underline{\mathsf{z}}))|)) =$

$((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \rhd \dot{\neg}((-\mathrm{u}\underline{v}) <=$
$((-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|) + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{v}) =$
$((-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|) + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((-\mathrm{u}\underline{v}) <=$
$((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \Rightarrow \dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{v}) =$
$((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{AddEquations(LeqLess)} \rhd \underline{v} <=$
$|(\underline{x} + (-\mathrm{u}\underline{z}))| \rhd \dot{\neg}((-\mathrm{u}\underline{v}) <= ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \Rightarrow$
$\dot{\neg}(\dot{\neg}((-\mathrm{u}\underline{v}) = ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)))\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}((\underline{v} + (-\mathrm{u}\underline{v})) <= (|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) \Rightarrow$
$\dot{\neg}(\dot{\neg}((\underline{v} + (-\mathrm{u}\underline{v})) =$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{Negative} \gg$
$(\underline{v} + (-\mathrm{u}\underline{v})) = 0; \mathrm{SubLessLeft} \rhd (\underline{v} + (-\mathrm{u}\underline{v})) = 0 \rhd \dot{\neg}((\underline{v} + (-\mathrm{u}\underline{v})) <=$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) \Rightarrow \dot{\neg}(\dot{\neg}((\underline{v} + (-\mathrm{u}\underline{v})) =$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (|(\underline{x} +$
$(-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{plusAssociativity} \gg$
$((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) =$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))); \mathrm{eqSymmetry} \rhd$
$((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) =$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) \gg$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) =$
$((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)); \mathrm{SubLessRight} \rhd$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) =$
$((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \rhd \dot{\neg}(0 <=$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(|(\underline{x} + (-\mathrm{u}\underline{z}))| + ((-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|))))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(0 <=$
$((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} +$
$(-\mathrm{u}\underline{y}))|)))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{insertTwoMiddleTerms(Numerical)} \gg |(\underline{x} + (-\mathrm{u}\underline{z}))| <=$
$((|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|) + |(\underline{u} + (-\mathrm{u}\underline{z}))|); \mathrm{PositiveToLeft(Leq)} \rhd |(\underline{x} +$
$(-\mathrm{u}\underline{z}))| <= ((|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|) + |(\underline{u} + (-\mathrm{u}\underline{z}))|) \gg (|(\underline{x} + (-\mathrm{u}\underline{z}))| +$
$(-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) <= (|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|); \mathrm{plusCommutativity} \gg$
$(|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|) =$
$(|(\underline{y} + (-\mathrm{u}\underline{u}))| + |(\underline{x} + (-\mathrm{u}\underline{y}))|); \mathrm{subLeqRight} \rhd (|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|) =$
$(|(\underline{y} + (-\mathrm{u}\underline{u}))| + |(\underline{x} + (-\mathrm{u}\underline{y}))|) \rhd (|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) <=$
$(|(\underline{x} + (-\mathrm{u}\underline{y}))| + |(\underline{y} + (-\mathrm{u}\underline{u}))|) \gg (|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) <=$
$(|(\underline{y} + (-\mathrm{u}\underline{u}))| + |(\underline{x} + (-\mathrm{u}\underline{y}))|); \mathrm{PositiveToLeft(Leq)} \rhd (|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} +$
$(-\mathrm{u}\underline{z}))|)) <= (|(\underline{y} + (-\mathrm{u}\underline{u}))| + |(\underline{x} + (-\mathrm{u}\underline{y}))|) \gg ((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} +$
$(-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) <= |(\underline{y} + (-\mathrm{u}\underline{u}))|; \mathrm{LessLeqTransitivity} \rhd \dot{\neg}(0 <=$
$((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$((|(\underline{x} + (-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)))\mathrm{n})\mathrm{n})\mathrm{n} \rhd ((|(\underline{x} +$
$(-\mathrm{u}\underline{z}))| + (-\mathrm{u}|(\underline{u} + (-\mathrm{u}\underline{z}))|)) + (-\mathrm{u}|(\underline{x} + (-\mathrm{u}\underline{y}))|)) <= |(\underline{y} + (-\mathrm{u}\underline{u}))| \gg \dot{\neg}(0 <=$
$|(\underline{y} + (-\mathrm{u}\underline{u}))| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |(\underline{y} + (-\mathrm{u}\underline{u}))|)\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FromPositiveNumerical} \rhd \dot{\neg}(0 <=$
$|(\underline{y} + (-\mathrm{u}\underline{u}))| \Rightarrow \dot{\neg}(\dot{\neg}(0 = |(\underline{y} + (-\mathrm{u}\underline{u}))|)\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}((\underline{y} + (-\mathrm{u}\underline{u})) =$
$0)\mathrm{n}; \mathrm{NegativeToRight(Neq)(1term)} \rhd \dot{\neg}((\underline{y} + (-\mathrm{u}\underline{u})) = 0)\mathrm{n} \gg \dot{\neg}(\underline{y} = \underline{u})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{FromNotSameF(Strong)(Helper)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash$

$\forall(v1){:}\,\forall(v2){:}\,\forall\mathsf{m}{:}\,\forall(n1){:}\,\forall(n2){:}\,\forall(\epsilon){:}\,\forall(fx){:}\,\forall(fy){:}\,\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (n2) \Rightarrow \dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \Rightarrow \forall_{obj}(v1){:}\,\forall_{obj}(v2){:}\,\dot{\neg}(0 <=$
$(rec(1 + 1) \ast (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec(1 + 1) \ast (\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (rec(1 + 1) \ast (\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (rec(1 + 1) \ast (\epsilon)))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (rec(1 + 1) \ast (\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (rec(1 + 1) \ast (\epsilon)))n)n)n)n)n \Rightarrow (n2) <=$
$\mathsf{m} \Rightarrow \dot{\neg}((fx)[\mathsf{m}] = (fy)[\mathsf{m}])n]$

[FromNotSameF(Strong)(Helper) $\stackrel{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash$
$\forall(v1){:}\,\forall(v2){:}\,\forall\mathsf{m}{:}\,\forall(n1){:}\,\forall(n2){:}\,\forall(\epsilon){:}\,\forall(fx){:}\,\forall(fy){:}\,\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n \Rightarrow (n1) <= (n2) \Rightarrow \dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \vdash \forall_{obj}(v1){:}\,\forall_{obj}(v2){:}\,\dot{\neg}(0 <=$
$(rec(1 + 1) \ast (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec(1 + 1) \ast (\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (rec(1 + 1) \ast (\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (rec(1 + 1) \ast (\epsilon)))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (rec(1 + 1) \ast (\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (rec(1 + 1) \ast (\epsilon)))n)n)n)n)n \vdash (n2) <=$
$\mathsf{m} \vdash$ FromNegated(2 $\ast$ Imply) $\rhd\ \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$(n1) <= (n2) \Rightarrow \dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(n2)] +$
$(-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \gg \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$\dot{\neg}((n1) <= (n2))n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| =$
$(\epsilon))n)n)n)n)n)n$; FirstConjunct $\rhd\ \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$\dot{\neg}((n1) <= (n2))n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n)n)n \gg \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \dot{\neg}((n1) <= (n2))n)n$; FirstConjunct $\rhd\ \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \dot{\neg}((n1) <= (n2))n)n \gg \dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 =$
$(\epsilon))n)n)n$; SecondConjunct $\rhd\ \dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow$
$\dot{\neg}((n1) <= (n2))n)n \gg (n1) <= (n2)$; SecondConjunct $\rhd\ \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(0 = (\epsilon))n)n)n \Rightarrow \dot{\neg}((n1) <= (n2))n)n \Rightarrow \dot{\neg}(\dot{\neg}(\dot{\neg}(|((fx)[(n2)] +$
$(-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| =$
$(\epsilon))n)n)n)n)n)n \gg \dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| =$
$(\epsilon))n)n)n)n$; fromNotLess $\rhd\ \dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| <= (\epsilon) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fy)[(n2)]))| = (\epsilon))n)n)n)n \gg (\epsilon) <=$
$|((fx)[(n2)] + (-u(fy)[(n2)]))|$; A4 @ $(n2) \rhd \forall_{obj}(v1){:}\,\forall_{obj}(v2){:}\,\dot{\neg}(0 <=$
$(rec(1 + 1) \ast (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec(1 + 1) \ast (\epsilon)))n)n)n \Rightarrow (n1) <= (v1) \Rightarrow$
$(n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| <= (rec(1 + 1) \ast (\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fx)[(v1)] + (-u(fx)[(v2)]))| = (rec(1 + 1) \ast (\epsilon)))n)n)n \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| <= (rec(1 + 1) \ast (\epsilon)) \Rightarrow$
$\dot{\neg}(\dot{\neg}(|((fy)[(v1)] + (-u(fy)[(v2)]))| = (rec(1 + 1) \ast (\epsilon)))n)n)n)n)n \gg$
$\forall_{obj}(v2){:}\,\dot{\neg}(0 <= (rec(1 + 1) \ast (\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(0 = (rec(1 + 1) \ast (\epsilon)))n)n)n \Rightarrow$
$(n1) <= (n2) \Rightarrow (n1) <= (v2) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(n2)] + (-u(fx)[(v2)]))| <=$
$(rec(1{+}1){\ast}(\epsilon)) \Rightarrow \dot{\neg}(\dot{\neg}(|((fx)[(n2)]{+}(-u(fx)[(v2)]))| = (rec(1{+}1){\ast}(\epsilon)))n)n)n \Rightarrow$

∸(∸(|((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) ⇒ (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 ≫ ∸(∸(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) ∗ (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⌉, p_0, c)]

[FromNotSameF(Strong) $\overset{\text{stmt}}{\rightarrow}$ SystemQ ⊢ ∀(v1): ∀(v2): ∀m: ∀n: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ∸($\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$n: ∸($\forall_{\mathrm{obj}}$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 ⊢ ∸($\forall_{\mathrm{obj}}$n: ∸($\forall_{\mathrm{obj}}$m: n <= m ⇒ ∸((fx)[m] = (fy)[m])n)n)n]

[FromNotSameF(Strong) $\overset{\text{proof}}{\rightarrow}$ λc.λx.𝒫(⌈SystemQ ⊢ ∀(v1): ∀(v2): ∀m: ∀n: ∀(n1): ∀(n2): ∀(ϵ): ∀(fx): ∀(fy): ∸($\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$n: ∸($\forall_{\mathrm{obj}}$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 ⊢ Repetition ⊳ ∸($\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$n: ∸($\forall_{\mathrm{obj}}$m: ∸(0 <= (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 ≫ ∸($\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$n: ∸($\forall_{\mathrm{obj}}$m: ∸(0 <= (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; Ded ⊳ ∸($\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$n: ∸($\forall_{\mathrm{obj}}$m: ∸(0 <= (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 ≫ ∸($\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$(n1): ∸($\forall_{\mathrm{obj}}$(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; AEA − negated ⊳ ∸($\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$(n1): ∸($\forall_{\mathrm{obj}}$(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 ≫ ∸($\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$(n1): ∸($\forall_{\mathrm{obj}}$(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; Cauchy(2) ≫ $\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$(n1): ∸($\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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) ∗ (ϵ)) ⊳ $\forall_{\mathrm{obj}}$(ϵ): ∸($\forall_{\mathrm{obj}}$(n1): ∸($\forall_{\mathrm{obj}}$(v1): $\forall_{\mathrm{obj}}$(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) ∗ (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 ⇒ ∀obj(v1): ∀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 ⇒ ∀obj(v1): ∀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 ⊳ ¬̇(∀obj(ϵ): ¬̇(∀obj(n1): ¬̇(∀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 ≫ ∀obj(v1): ∀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 ⊳ ∀obj(v1): ∀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 ⊳ ¬̇(∀obj(n1): ¬̇(∀obj(v1): ∀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 ≫ (n2) <= m ⇒ ¬̇((fx)[m] =

$\underline{(fy)}[\underline{\mathsf{m}}])\mathrm{n}; \mathrm{Gen} \rhd \underline{(n2)} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}])\mathrm{n} \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(n2)} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}])\mathrm{n}; \mathrm{IntroExist} @ \underline{(n2)} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{(n2)} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] =$
$\underline{(fy)}[\underline{\mathsf{m}}])\mathrm{n} \gg \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] = \underline{(fy)}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

$[\mathrm{SameFreciprocal(Helper)} \overset{\mathrm{stmt}}{\rightarrow} \mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(fx)}\colon\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * 1\mathrm{f}/\underline{(fx)}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]]$

$[\mathrm{SameFreciprocal(Helper)} \overset{\mathrm{proof}}{\rightarrow} \lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil\mathrm{SystemQ} \vdash \forall\underline{\mathsf{m}}\colon\forall\underline{\mathsf{n}}\colon\forall\underline{(fx)}\colon\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash \mathrm{A4} @ \underline{\mathsf{m}} \rhd \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \gg \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n}; \mathrm{MP} \rhd \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \gg \dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n}; \mathrm{NatType} \gg$
$\underline{\mathsf{m}} \in \mathrm{N}; 0\mathrm{f} \rhd \underline{\mathsf{m}} \in \mathrm{N} \gg \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = 0; \mathrm{SubNeqRight} \rhd \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(op1)} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(op2)} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = 0 \rhd \dot{\neg}\,(\underline{(fx)}[\underline{\mathsf{m}}] =$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\}))) \mid$

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n}\gg\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]=$
$0)\mathrm{n};\mathrm{ReciprocalFnonzero}\rhd\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]=0)\mathrm{n}\gg 1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]=$
$\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}];\mathrm{lemma\ eqMultiplicationLeft}\rhd 1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]=\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]\gg$
$(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])=(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]);\mathrm{Reciprocal}\rhd\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]=0)\mathrm{n}\gg$
$(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])=1;1\mathrm{f}\rhd\underline{\mathsf{m}}\in\mathrm{N}\gg\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]=1;\mathrm{eqSymmetry}\rhd\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]=1\gg 1=\{\mathrm{ph}\in$
$\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in$
$\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}];\mathrm{eqTransitivity}\rhd(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])=$
$1\rhd 1=\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=$
$\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\gg(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])=\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}];\mathrm{TimesF}\gg\{\mathrm{ph}\in$
$\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in$
$\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=$
$\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]=$
$(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]);\mathrm{eqTransitivity4}\rhd\{\mathrm{ph}\in\{\mathrm{ph}\in\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]=(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\rhd(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*$
$1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])=(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\rhd(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*\mathrm{rec}\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])=\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{crs1})},\overline{(\mathrm{crs1})}\},\{\overline{(\mathrm{crs1})},1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\gg\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}]*1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]=\{\mathrm{ph}\in\{\mathrm{ph}\in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})}\in\mathrm{N}\Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})}\in\mathrm{Q})\mathrm{n})\mathrm{n}\Rightarrow\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(\mathrm{op1})},\overline{(\mathrm{op1})}\},\{\overline{(\mathrm{op1})},\overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=$

$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]; \forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\mathrm{fx})}\colon \mathrm{Ded} \triangleright$
$\forall\underline{\mathsf{m}}\colon \forall\underline{\mathsf{n}}\colon \forall\underline{(\mathrm{fx})}\colon \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \vdash \underline{\mathsf{n}} <= \underline{\mathsf{m}} \vdash$
$\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * 1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] \gg \forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * 1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]\rceil, \mathrm{p}_0, \mathsf{c})]$
$[\mathrm{SameFreciprocal} \overset{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{(\mathrm{fx})}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * 1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$

$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\underline{\mathrm{fx})}[\underline{\mathsf{m}}] * 1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}]$

$[\mathrm{SameFreciprocal} \overset{\mathrm{proof}}{\to} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\ulcorner \mathrm{SystemQ} \vdash$
$\forall \underline{(\mathrm{fx})}\colon \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <=$
$\overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash$
$\mathrm{FromNotSameF(Strong)} \rhd \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\epsilon)}\colon \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{\mathsf{m}}\colon \dot{\neg}\,(0 <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}\,(\dot{\neg}\,(|(\underline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \underline{\mathsf{n}}\colon \dot{\neg}\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SameFreciprocal(Helper)} \gg$
$\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n} \Rightarrow \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \dot{\neg}\,(\mathsf{e}_{\mathrm{Ph}} = \{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * 1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}]; \mathrm{ExistMP} \rhd$
$\forall_{\mathrm{obj}} \underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}\,(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op1})}\colon \dot{\neg}\,(\dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{op2})}\colon \dot{\neg}\,(\dot{\neg}\,(\dot{\neg}\,(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}\,(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}\,(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}\,(\forall_{\mathrm{obj}} \overline{(\mathrm{crs1})}\colon \dot{\neg}\,(\mathsf{c}_{\mathrm{Ph}} =$

$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{m}])n \Rightarrow \underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(\mathrm{fx})}[\underline{m}] * 1f/\overline{(\mathrm{fx})}[\underline{m}])\}\})n)n\}[\underline{m}] = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\overline{(\mathrm{crs1})}: \dot\neg(c_{Ph} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})n)n\}[\underline{m}] \rhd$
$\dot\neg(\forall_{obj}\underline{n}: \dot\neg(\forall_{obj}\underline{m}: \underline{n} <= \underline{m} \Rightarrow \dot\neg(\overline{(\mathrm{fx})}[\underline{m}] = \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\overline{(\mathrm{crs1})}: \dot\neg(c_{Ph} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})n)n\}[\underline{m}])n)n)n \gg \underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(\mathrm{fx})}[\underline{m}] * 1f/\overline{(\mathrm{fx})}[\underline{m}])\}\})n)n\}[\underline{m}] = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\overline{(\mathrm{crs1})}: \dot\neg(c_{Ph} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})n)n\}[\underline{m}]; Gen \rhd \underline{n} <= \underline{m} \Rightarrow$
$\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}: \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(\mathrm{fx})}[\underline{m}] * 1f/\overline{(\mathrm{fx})}[\underline{m}])\}\})n)n\}[\underline{m}] = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\overline{(\mathrm{crs1})}: \dot\neg(c_{Ph} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})n)n\}[\underline{m}] \gg \forall_{obj}\underline{m}: \underline{n} <=$
$\underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}: \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(\mathrm{fx})}[\underline{m}] * 1f/\overline{(\mathrm{fx})}[\underline{m}])\}\})n)n\}[\underline{m}] = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\overline{(\mathrm{crs1})}: \dot\neg(c_{Ph} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})n)n\}[\underline{m}]; IntroExist\ @\ \underline{n} \rhd \underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\underline{m}: \dot\neg(e_{Ph} = \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(\mathrm{fx})}[\underline{m}] * 1f/\overline{(\mathrm{fx})}[\underline{m}])\}\})n)n\}[\underline{m}] = \{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow$
$\dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow \dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid$
$\dot\neg(\forall_{obj}\overline{(\mathrm{crs1})}: \dot\neg(c_{Ph} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})n)n\}[\underline{m}] \gg$
$\dot\neg(\forall_{obj}\underline{n}: \dot\neg(\forall_{obj}\underline{m}: \underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot\neg(\forall_{obj}\overline{(\mathrm{op1})}: \dot\neg(\dot\neg(\forall_{obj}\overline{(\mathrm{op2})}: \dot\neg(\dot\neg(\dot\neg(\overline{(\mathrm{op1})} \in N \Rightarrow \dot\neg(\overline{(\mathrm{op2})} \in Q)n)n \Rightarrow$
$\dot\neg(a_{Ph} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot\neg(\forall_{obj}\underline{m}: \dot\neg(e_{Ph} =$
$\{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{(\mathrm{fx})}[\underline{m}] * 1f/\overline{(\mathrm{fx})}[\underline{m}])\}\})n)n\}[\underline{m}] = \{ph \in \{ph \in$

$\mathrm{P(P(Union(\{N,Q\})))} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n}; (\mathrm{Eventually} =$
$\mathrm{f})\mathrm{2sameF} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P(P(Union(\{N,Q\})))} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * 1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}] = \{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P(P(Union(\{N,Q\})))} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P(P(Union(\{N,Q\})))} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * 1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P(P(Union(\{N,Q\})))} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P(P(Union(\{N,Q\})))} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] * 1\mathrm{f}/\underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P(P(Union(\{N,Q\})))} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}((\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}{:}\,\forall_{\mathrm{obj}}\overline{(f2)}{:}\,\forall_{\mathrm{obj}}\overline{(f3)}{:}\,\forall_{\mathrm{obj}}\overline{(f4)}{:}\,\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in \mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in \mathsf{f}_{\mathrm{Ph}}\Rightarrow \overline{(f1)}=\overline{(f3)}\Rightarrow \overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}{:}\,\overline{(s1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}{:}\,\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\})\mid \forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\,\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\,\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\,\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow \dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow \dot{\neg}(|(\{ph\in\{ph\in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}{:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\overline{(op2)}\in \mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(crs1)}{:}\,\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},0\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph\in$
$\{ph\in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}{:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in$
$\mathrm{N}\Rightarrow \dot{\neg}(\overline{(op2)}\in \mathrm{Q})n)n\Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(crs1)}{:}\,\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},0\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})n)n)n)n)n\})n\vdash$
$\{ph\in \mathrm{P}(\{ph\in \mathrm{P}(\{ph\in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}{:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\overline{(op2)}\in \mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\})\mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}{:}\,\overline{(r1)}\in$
$\mathsf{f}_{\mathrm{Ph}}\Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}{:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\overline{(op2)}\in \mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}{:}\,\forall_{\mathrm{obj}}\overline{(f2)}{:}\,\forall_{\mathrm{obj}}\overline{(f3)}{:}\,\forall_{\mathrm{obj}}\overline{(f4)}{:}\,\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in \mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in \mathsf{f}_{\mathrm{Ph}}\Rightarrow \overline{(f1)}=\overline{(f3)}\Rightarrow \overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}{:}\,\overline{(s1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}{:}\,\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\})\mid \forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\,\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\,\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\,\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow \dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow \dot{\neg}(|(\{ph\in\{ph\in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}{:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\overline{(op2)}\in \mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fx)[\underline{\mathsf{m}}]*1f/(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph\in\{ph\in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}{:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\overline{(op2)}\in \mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}{:}\,\dot{\neg}(\mathsf{e}_{\mathrm{Ph}}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},((fx)[\underline{\mathsf{m}}]*1f/(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|=$
$\overline{(\epsilon)})n)n)n)n)n\}=\{ph\in \mathrm{P}(\{ph\in \mathrm{P}(\{ph\in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}{:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\overline{(op2)}\in \mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\})\mid \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(r1)}{:}\,\overline{(r1)}\in$
$\mathsf{f}_{\mathrm{Ph}}\Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}{:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\overline{(op2)}\in \mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(f1)}{:}\,\forall_{\mathrm{obj}}\overline{(f2)}{:}\,\forall_{\mathrm{obj}}\overline{(f3)}{:}\,\forall_{\mathrm{obj}}\overline{(f4)}{:}\,\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in \mathsf{f}_{\mathrm{Ph}}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in \mathsf{f}_{\mathrm{Ph}}\Rightarrow \overline{(f1)}=\overline{(f3)}\Rightarrow \overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(s1)}{:}\,\overline{(s1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(s2)}{:}\,\dot{\neg}(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\})\mid \forall_{\mathrm{obj}}\overline{(\epsilon)}{:}\,\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}{:}\,\dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}{:}\,\dot{\neg}(0<=\overline{(\epsilon)}\Rightarrow \dot{\neg}(\dot{\neg}(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow \dot{\neg}(|(\{ph\in\{ph\in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}{:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in \mathrm{N}\Rightarrow \dot{\neg}(\overline{(op2)}\in \mathrm{Q})n)n\Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(crs1)}{:}\,\dot{\neg}(\mathsf{c}_{\mathrm{Ph}}=$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},1\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph\in$
$\{ph\in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N},\mathrm{Q}\})))\mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(op1)}{:}\,\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(op2)}{:}\,\dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(op1)}\in$

$N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\}]$
$[Reciprocal(R) \overset{proof}{\rightarrow} \lambda \mathsf{c}.\lambda \mathsf{x}.\mathcal{P}(\ulcorner SystemQ \vdash \forall \underline{(fx)}: \dot{\neg}(\{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in$
$N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(crs1)}: \dot{\neg}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 0\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\})n \vdash$
$From!! == \triangleright \dot{\neg}(\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\underline{(fx)}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$

$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{r1})}\colon \overline{(\mathrm{r1})} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\overline{(\mathrm{r1})} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{f1})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f2})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f3})}\colon \forall_{\mathrm{obj}}\overline{(\mathrm{f4})}\colon \{\{\overline{(\mathrm{f1})}, \overline{(\mathrm{f1})}\}, \{\overline{(\mathrm{f1})}, \overline{(\mathrm{f2})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(\mathrm{f3})}, \overline{(\mathrm{f3})}\}, \{\overline{(\mathrm{f3})}, \overline{(\mathrm{f4})}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(\mathrm{f1})} = \overline{(\mathrm{f3})} \Rightarrow \overline{(\mathrm{f2})} = \overline{(\mathrm{f4})})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s1})}\colon \overline{(\mathrm{s1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{s2})}\colon \dot{\neg}(\{\{\overline{(\mathrm{s1})}, \overline{(\mathrm{s1})}\}, \{\overline{(\mathrm{s1})}, \overline{(\mathrm{s2})}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\})\mathrm{n} \gg$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in$
$\{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in$
$\mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{SameFreciprocal} \rhd \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\overline{(\mathrm{fx})}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 0\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \gg$
$\forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{\neg}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})\mathrm{n})\mathrm{n})\mathrm{n} \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow$
$\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow \dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow$
$\dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid \dot{\neg}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{\neg}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(\mathrm{fx})}[\underline{\mathsf{m}}] * 1\mathrm{f}/\overline{(\mathrm{fx})}[\underline{\mathsf{m}}])\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}] + (-\mathrm{u}\{\mathrm{ph} \in \{\mathrm{ph} \in$
$\mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid \dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op1})}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{op2})}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{(\mathrm{op1})} \in \mathrm{N} \Rightarrow$
$\dot{\neg}(\overline{(\mathrm{op2})} \in \mathrm{Q})\mathrm{n})\mathrm{n} \Rightarrow \dot{\neg}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n}\} \mid$
$\dot{\neg}(\forall_{\mathrm{obj}}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})\mathrm{n})\mathrm{n}\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{\mathrm{ph} \in \{\mathrm{ph} \in \mathrm{P}(\mathrm{P}(\mathrm{Union}(\{\mathrm{N}, \mathrm{Q}\}))) \mid$

$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * 1f/(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}(\forall_{obj}\overline{(crs1)}: \dot{-}(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n; To == \rhd\forall_{obj}\overline{(\epsilon)}: \dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 =$
$\overline{(\epsilon)})n)n)n \Rightarrow \overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * 1f/(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}(\forall_{obj}\overline{(crs1)}: \dot{-}(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * 1f/(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\{ph \in \{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid$
$\dot{-}(\forall_{obj}\overline{(crs1)}: \dot{-}(\mathsf{c}_{Ph} = \{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n \gg \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}: \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * 1f/(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * 1f/(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-u\mathsf{d}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$

$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}\colon \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{-}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{-}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\overline{(crs1)}\colon \dot{-}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in$
$N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\overline{(crs1)}\colon \dot{-}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; eqReflexivity \gg \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow$
$\dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}\colon \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{-}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{-}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * 1f/\overline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * 1f/\overline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}\colon \forall_{obj}\overline{(f2)}\colon \forall_{obj}\overline{(f3)}\colon \forall_{obj}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}\colon \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}\colon \dot{-}(\forall_{obj}\overline{\mathsf{n}}\colon \dot{-}(\forall_{obj}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\overline{(fx)}[\underline{\mathsf{m}}] * 1f/\overline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$

$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fx})[\underline{\mathsf{m}}] * 1f/(\overline{fx})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; == Transitivity \rhd \{ph \in P(\{ph \in P(\{ph \in$
$P(P(Union(\{N, Q\}))) \mid \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid$
$\dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in \mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow$
$\dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow \dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fx})[\underline{\mathsf{m}}] * 1f/(\overline{fx})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fx})[\underline{\mathsf{m}}] * 1f/(\overline{fx})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{\neg}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{\neg}(\forall_{obj}\overline{(s2)}: \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{\neg}(\forall_{obj}\overline{\mathsf{n}}: \dot{\neg}(\forall_{obj}\overline{\mathsf{m}}: \dot{\neg}(0 <= \overline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fx})[\underline{\mathsf{m}}] * 1f/(\overline{fx})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{\neg}(\dot{\neg}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\underline{\mathsf{m}}: \dot{\neg}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((\overline{fx})[\underline{\mathsf{m}}] * 1f/(\overline{fx})[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} \rhd \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{\neg}(\forall_{obj}\overline{(op1)}: \dot{\neg}(\dot{\neg}(\forall_{obj}\overline{(op2)}: \dot{\neg}(\dot{\neg}(\dot{\neg}((\overline{(op1)} \in N \Rightarrow \dot{\neg}((\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{\neg}((\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$

$\dot\neg(\forall_{obj}\overline{(f1)}{:}\,\forall_{obj}\overline{(f2)}{:}\,\forall_{obj}\overline{(f3)}{:}\,\forall_{obj}\overline{(f4)}{:}\,\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in \mathsf{f}_{Ph}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\mathsf{f}_{Ph}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}{:}\,\overline{(s1)}\in N\Rightarrow\dot\neg(\forall_{obj}\overline{(s2)}{:}\,\dot\neg(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\mathsf{f}_{Ph})n)n)n)n\})\mid\forall_{obj}\overline{(\epsilon)}{:}\,\dot\neg(\forall_{obj}\overline{\mathsf{n}}{:}\,\dot\neg(\forall_{obj}\overline{\mathsf{m}}{:}\,\dot\neg(0<=\overline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot\neg(|(\{ph\in\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\,\dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\,\dot\neg(\dot\neg(\dot\neg(\overline{(op1)}\in N\Rightarrow\dot\neg(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot\neg(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot\neg(\forall_{obj}\underline{\mathsf{m}}{:}\,\dot\neg(\mathsf{e}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fx)}[\underline{\mathsf{m}}]*1f/\overline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot\neg(\dot\neg(|(\{ph\in\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\,\dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\,\dot\neg(\dot\neg(\dot\neg(\overline{(op1)}\in N\Rightarrow\dot\neg(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot\neg(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot\neg(\forall_{obj}\underline{\mathsf{m}}{:}\,\dot\neg(\mathsf{e}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fx)}[\underline{\mathsf{m}}]*1f/\overline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))|=$
$\overline{(\epsilon)})n)n)n)n)n\}=\{ph\in P(\{ph\in P(\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\,\dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\,\dot\neg(\dot\neg(\dot\neg(\overline{(op1)}\in N\Rightarrow\dot\neg(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot\neg(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\})\mid\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}{:}\,\overline{(r1)}\in$
$\mathsf{f}_{Ph}\Rightarrow\dot\neg(\forall_{obj}\overline{(op1)}{:}\,\dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\,\dot\neg(\dot\neg(\dot\neg(\overline{(op1)}\in N\Rightarrow\dot\neg(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot\neg(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n\Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}{:}\,\forall_{obj}\overline{(f2)}{:}\,\forall_{obj}\overline{(f3)}{:}\,\forall_{obj}\overline{(f4)}{:}\,\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in \mathsf{f}_{Ph}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\mathsf{f}_{Ph}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}{:}\,\overline{(s1)}\in N\Rightarrow\dot\neg(\forall_{obj}\overline{(s2)}{:}\,\dot\neg(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\mathsf{f}_{Ph})n)n)n)n\})\mid\forall_{obj}\overline{(\epsilon)}{:}\,\dot\neg(\forall_{obj}\overline{\mathsf{n}}{:}\,\dot\neg(\forall_{obj}\overline{\mathsf{m}}{:}\,\dot\neg(0<=\overline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot\neg(|(\{ph\in\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\,\dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\,\dot\neg(\dot\neg(\dot\neg(\overline{(op1)}\in N\Rightarrow\dot\neg(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot\neg(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot\neg(\forall_{obj}\overline{(crs1)}{:}\,\dot\neg(\mathsf{c}_{Ph}=$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},1\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(|(\{ph\in$
$\{ph\in P(P(Union(\{N,Q\})))\mid\dot\neg(\forall_{obj}\overline{(op1)}{:}\,\dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\,\dot\neg(\dot\neg(\dot\neg(\overline{(op1)}\in$
$N\Rightarrow\dot\neg(\overline{(op2)}\in Q)n)n\Rightarrow\dot\neg(\mathsf{a}_{Ph}=$
$\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot\neg(\forall_{obj}\overline{(crs1)}{:}\,\dot\neg(\mathsf{c}_{Ph}=$
$\{\{\overline{(crs1)},\overline{(crs1)}\},\{\overline{(crs1)},1\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))|=\overline{(\epsilon)})n)n)n)n)n\}\gg$
$\{ph\in P(\{ph\in P(\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\,\dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\,\dot\neg(\dot\neg(\dot\neg(\overline{(op1)}\in N\Rightarrow\dot\neg(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot\neg(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\})\mid\dot\neg(\dot\neg(\forall_{obj}\overline{(r1)}{:}\,\overline{(r1)}\in$
$\mathsf{f}_{Ph}\Rightarrow\dot\neg(\forall_{obj}\overline{(op1)}{:}\,\dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\,\dot\neg(\dot\neg(\dot\neg(\overline{(op1)}\in N\Rightarrow\dot\neg(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot\neg(\overline{(r1)}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n\Rightarrow$
$\dot\neg(\forall_{obj}\overline{(f1)}{:}\,\forall_{obj}\overline{(f2)}{:}\,\forall_{obj}\overline{(f3)}{:}\,\forall_{obj}\overline{(f4)}{:}\,\{\{\overline{(f1)},\overline{(f1)}\},\{\overline{(f1)},\overline{(f2)}\}\}\in \mathsf{f}_{Ph}\Rightarrow$
$\{\{\overline{(f3)},\overline{(f3)}\},\{\overline{(f3)},\overline{(f4)}\}\}\in\mathsf{f}_{Ph}\Rightarrow\overline{(f1)}=\overline{(f3)}\Rightarrow\overline{(f2)}=\overline{(f4)})n)n\Rightarrow$
$\dot\neg(\forall_{obj}\overline{(s1)}{:}\,\overline{(s1)}\in N\Rightarrow\dot\neg(\forall_{obj}\overline{(s2)}{:}\,\dot\neg(\{\{\overline{(s1)},\overline{(s1)}\},\{\overline{(s1)},\overline{(s2)}\}\}\in$
$\mathsf{f}_{Ph})n)n)n)n\})\mid\forall_{obj}\overline{(\epsilon)}{:}\,\dot\neg(\forall_{obj}\overline{\mathsf{n}}{:}\,\dot\neg(\forall_{obj}\overline{\mathsf{m}}{:}\,\dot\neg(0<=\overline{(\epsilon)}\Rightarrow\dot\neg(\dot\neg(0=\overline{(\epsilon)})n)n)n\Rightarrow$
$\overline{\mathsf{n}}<=\overline{\mathsf{m}}\Rightarrow\dot\neg(|(\{ph\in\{ph\in P(P(Union(\{N,Q\})))\mid$
$\dot\neg(\forall_{obj}\overline{(op1)}{:}\,\dot\neg(\dot\neg(\forall_{obj}\overline{(op2)}{:}\,\dot\neg(\dot\neg(\dot\neg(\overline{(op1)}\in N\Rightarrow\dot\neg(\overline{(op2)}\in Q)n)n\Rightarrow$
$\dot\neg(\mathsf{a}_{Ph}=\{\{\overline{(op1)},\overline{(op1)}\},\{\overline{(op1)},\overline{(op2)}\}\})n)n)n)n)n)n\}\mid\dot\neg(\forall_{obj}\underline{\mathsf{m}}{:}\,\dot\neg(\mathsf{e}_{Ph}=$
$\{\{\underline{\mathsf{m}},\underline{\mathsf{m}}\},\{\underline{\mathsf{m}},(\overline{(fx)}[\underline{\mathsf{m}}]*1f/\overline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}]+(-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))|<=\overline{(\epsilon)}\Rightarrow$
$\dot\neg(\dot\neg(|(\{ph\in\{ph\in P(P(Union(\{N,Q\})))\mid$

$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * 1f/\underline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}: \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\overline{(crs1)}: \dot{-}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in$
$N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{Ph} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\overline{(crs1)}: \dot{-}(\mathsf{c}_{Ph} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\}; \mathrm{Repetition} \rhd \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{Ph} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(s1)}: \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{obj}\overline{(s2)}: \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{Ph})n)n)n)n\}) \mid \forall_{obj}\overline{(\epsilon)}: \dot{-}(\forall_{obj}\overline{\mathsf{n}}: \dot{-}(\forall_{obj}\overline{\mathsf{m}}: \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)}))n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * 1f/\underline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{obj}\underline{\mathsf{m}}: \dot{-}(\mathsf{e}_{Ph} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, (\underline{(fx)}[\underline{\mathsf{m}}] * 1f/\underline{(fx)}[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{Ph}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{Ph} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{obj}\overline{(r1)}: \overline{(r1)} \in$
$\mathsf{f}_{Ph} \Rightarrow \dot{-}(\forall_{obj}\overline{(op1)}: \dot{-}(\dot{-}(\forall_{obj}\overline{(op2)}: \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{obj}\overline{(f1)}: \forall_{obj}\overline{(f2)}: \forall_{obj}\overline{(f3)}: \forall_{obj}\overline{(f4)}: \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{Ph} \Rightarrow$

$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in$
$N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} =$
$\{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\} \gg$
$\{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * 1f/(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow$
$\dot{-}(\dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{\mathrm{obj}}\underline{\mathsf{m}}\colon \dot{-}(\mathsf{e}_{\mathrm{Ph}} =$
$\{\{\underline{\mathsf{m}}, \underline{\mathsf{m}}\}, \{\underline{\mathsf{m}}, ((fx)[\underline{\mathsf{m}}] * 1f/(fx)[\underline{\mathsf{m}}])\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| =$
$\overline{(\epsilon)})n)n)n)n)n\} = \{ph \in P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\}) \mid \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(r1)}\colon \overline{(r1)} \in$
$\mathsf{f}_{\mathrm{Ph}} \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(f1)}\colon \forall_{\mathrm{obj}}\overline{(f2)}\colon \forall_{\mathrm{obj}}\overline{(f3)}\colon \forall_{\mathrm{obj}}\overline{(f4)}\colon \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow$
$\{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathsf{f}_{\mathrm{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(s1)}\colon \overline{(s1)} \in N \Rightarrow \dot{-}(\forall_{\mathrm{obj}}\overline{(s2)}\colon \dot{-}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in$
$\mathsf{f}_{\mathrm{Ph}})n)n)n)n\}) \mid \forall_{\mathrm{obj}}\overline{(\epsilon)}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{n}}\colon \dot{-}(\forall_{\mathrm{obj}}\overline{\mathsf{m}}\colon \dot{-}(0 <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \dot{-}(|(\{ph \in \{ph \in P(P(Union(\{N, Q\}))) \mid$
$\dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow$
$\dot{-}(\mathsf{a}_{\mathrm{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n)n)n\} \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(crs1)}\colon \dot{-}(\mathsf{c}_{\mathrm{Ph}} =$
$\{\{\overline{(crs1)}, \overline{(crs1)}\}, \{\overline{(crs1)}, 1\}\})n)n\}[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| <= \overline{(\epsilon)} \Rightarrow \dot{-}(\dot{-}(|(\{ph \in$
$\{ph \in P(P(Union(\{N, Q\}))) \mid \dot{-}(\forall_{\mathrm{obj}}\overline{(op1)}\colon \dot{-}(\dot{-}(\forall_{\mathrm{obj}}\overline{(op2)}\colon \dot{-}(\dot{-}(\dot{-}(\overline{(op1)} \in$
$N \Rightarrow \dot{-}(\overline{(op2)} \in Q)n)n \Rightarrow \dot{-}(\mathsf{a}_{\mathrm{Ph}} =$

$\{\{\overline{(\mathrm{op1})}, \overline{(\mathrm{op1})}\}, \{\overline{(\mathrm{op1})}, \overline{(\mathrm{op2})}\}\})n)n)n)n)n)n\} \mid \dot{\neg}(\forall_{obj}\overline{(\mathrm{crs1})}\colon \dot{\neg}(\mathsf{c}_{\mathrm{Ph}} = \{\{\overline{(\mathrm{crs1})}, \overline{(\mathrm{crs1})}\}, \{\overline{(\mathrm{crs1})}, 1\}\})n)n[\overline{\mathsf{m}}] + (-\mathsf{ud}_{\mathrm{Ph}}[\overline{\mathsf{m}}]))| = \overline{(\epsilon)})n)n)n)n)n\}\rceil, p_0, \mathsf{c})]$

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

[insertTwoMiddleTerms(Sum) $\overset{\text{proof}}{\rightarrow}$ $\lambda\mathsf{c}.\lambda\mathsf{x}.\mathcal{P}(\lceil$SystemQ $\vdash$ $\forall \underline{\mathsf{x}}\colon \forall \underline{\mathsf{y}}\colon \forall \underline{\mathsf{z}}\colon \forall \underline{\mathsf{u}}\colon$ insertMiddleTerm(Sum) $\gg (\underline{\mathsf{x}} + \underline{\mathsf{y}}) = ((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + (\underline{\mathsf{z}} + \underline{\mathsf{y}}))$; insertMiddleTerm(Sum) $\gg (\underline{\mathsf{z}} + \underline{\mathsf{y}}) = ((\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}})) + (\underline{\mathsf{u}} + \underline{\mathsf{y}}))$; lemma eqAdditionLeft $\rhd (\underline{\mathsf{z}} + \underline{\mathsf{y}}) = ((\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}})) + (\underline{\mathsf{u}} + \underline{\mathsf{y}})) \gg ((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + (\underline{\mathsf{z}} + \underline{\mathsf{y}})) = ((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + ((\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}})) + (\underline{\mathsf{u}} + \underline{\mathsf{y}})))$; plusAssociativity $\gg (((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))) + (\underline{\mathsf{u}} + \underline{\mathsf{y}})) = ((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + ((\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}})) + (\underline{\mathsf{u}} + \underline{\mathsf{y}})))$; eqSymmetry $\rhd (((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))) + (\underline{\mathsf{u}} + \underline{\mathsf{y}})) = ((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + ((\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}})) + (\underline{\mathsf{u}} + \underline{\mathsf{y}}))) \gg ((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + ((\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}})) + (\underline{\mathsf{u}} + \underline{\mathsf{y}}))) = (((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))) + (\underline{\mathsf{u}} + \underline{\mathsf{y}}))$; eqTransitivity4 $\rhd (\underline{\mathsf{x}} + \underline{\mathsf{y}}) = ((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + (\underline{\mathsf{z}} + \underline{\mathsf{y}})) \rhd ((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + (\underline{\mathsf{z}} + \underline{\mathsf{y}})) = ((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + ((\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}})) + (\underline{\mathsf{u}} + \underline{\mathsf{y}}))) \rhd ((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + ((\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}})) + (\underline{\mathsf{u}} + \underline{\mathsf{y}}))) = (((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))) + (\underline{\mathsf{u}} + \underline{\mathsf{y}})) \gg (\underline{\mathsf{x}} + \underline{\mathsf{y}}) = (((\underline{\mathsf{x}} + (-\mathrm{u}\underline{\mathsf{z}})) + (\underline{\mathsf{z}} + (-\mathrm{u}\underline{\mathsf{u}}))) + (\underline{\mathsf{u}} + \underline{\mathsf{y}}))\rceil, p_0, \mathsf{c})$]

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

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

$\forall_{\mathrm{obj}}\underline{(v1)}\colon \forall_{\mathrm{obj}}\underline{(v2)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v3)}\colon \dot{\neg}(\dot{\neg}(\underline{a})n)n)n \rhd \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(v1)}\colon \dot{\neg}(\dot{\neg}(\forall_{\mathrm{obj}}\underline{(v2)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v3)}\colon \underline{a})n)n)n)n)n \gg \forall_{\mathrm{obj}}\underline{(v1)}\colon \forall_{\mathrm{obj}}\underline{(v2)}\colon \dot{\neg}(\forall_{\mathrm{obj}}\underline{(v3)}\colon \dot{\neg}(\dot{\neg}(\underline{a})n)n)n\rceil, p_0, c)]$

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

$[\mathrm{FromNumericalGreater} \stackrel{\mathrm{proof}}{\to} \lambda c.\lambda 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}|)n)n)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}|)n)n)n \gg \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n; \mathrm{WeakenOr1} \rhd \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n; \forall\underline{x}\colon \forall\underline{y}\colon \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)n)n)n \vdash \underline{y} <= 0 \vdash \mathrm{lemma\ nonpositiveNumerical} \rhd \underline{y} <= 0 \gg |\underline{y}| = (-u\underline{y}); \mathrm{SubLessRight} \rhd |\underline{y}| = (-u\underline{y}) \rhd \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)n)n)n \gg \dot{\neg}(\underline{x} <= (-u\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (-u\underline{y}))n)n)n; \mathrm{LessNegated} \rhd \dot{\neg}(\underline{x} <= (-u\underline{y}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = (-u\underline{y}))n)n)n \gg \dot{\neg}((-u(-u\underline{y})) <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((-u(-u\underline{y})) = (-u\underline{x}))n)n)n; \mathrm{DoubleMinus} \gg (-u(-u\underline{y})) = \underline{y}; \mathrm{SubLessLeft} \rhd (-u(-u\underline{y})) = \underline{y} \rhd \dot{\neg}((-u(-u\underline{y})) <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}((-u(-u\underline{y})) = (-u\underline{x}))n)n)n \gg \dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n; \mathrm{WeakenOr2} \rhd \dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n \gg \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)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}|)n)n)n \vdash 0 <= \underline{y} \vdash \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \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}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)n)n)n \Rightarrow 0 <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n; \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}|)n)n)n \vdash \underline{y} <= 0 \vdash \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \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}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)n)n)n \Rightarrow \underline{y} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n; \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)n)n)n \vdash \mathrm{MP} \rhd \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)n)n)n \Rightarrow 0 <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \rhd \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)n)n)n \gg 0 <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n; \mathrm{MP} \rhd \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)n)n)n \Rightarrow \underline{y} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \rhd \dot{\neg}(\underline{x} <= |\underline{y}| \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = |\underline{y}|)n)n)n \gg \underline{y} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n; \mathrm{FromLeqGeq} \rhd 0 <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \rhd \underline{y} <= 0 \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n \gg \dot{\neg}(\dot{\neg}(\underline{y} <= (-u\underline{x}) \Rightarrow \dot{\neg}(\dot{\neg}(\underline{y} = (-u\underline{x}))n)n)n)n \Rightarrow \dot{\neg}(\underline{x} <= \underline{y} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{x} = \underline{y})n)n)n\rceil, p_0, c)]$

$[\mathrm{FromNot} < f(\mathrm{Weak})(\mathrm{Helper}) \stackrel{\mathrm{stmt}}{\to} \mathrm{SystemQ} \vdash \forall\underline{m}\colon \forall\underline{n}\colon \forall\underline{(\epsilon)}\colon \forall\underline{(fx)}\colon \forall\underline{(fy)}\colon \dot{\neg}(\dot{\neg}(\dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m} \Rightarrow \underline{(fx)}[\underline{m}] <= (\underline{(fy)}[\underline{m}] + (-u\underline{(\epsilon)})))n)n)n \Rightarrow \dot{\neg}(0 <= \underline{(\epsilon)} \Rightarrow \dot{\neg}(\dot{\neg}(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot{\neg}(\underline{n} <= \underline{m} \Rightarrow \dot{\neg}(\dot{\neg}((\underline{(fy)}[\underline{m}] + (-u\underline{(\epsilon)})) <= \underline{(fx)}[\underline{m}] \Rightarrow$

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

$[\mathrm{FromNot} < \mathrm{f(Weak)(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 (\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}}] <= ((\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} \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{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \rhd \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}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n}; \mathrm{FromNegatedImply} \rhd \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\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}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{FirstConjunct} \rhd \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \underline{\mathsf{n}} <= \underline{\mathsf{m}}; \mathrm{SecondConjunct} \rhd \dot{\neg}(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot{\neg}(\dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n})\mathrm{n})\mathrm{n} \gg \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n}; \mathrm{ToLess} \rhd \dot{\neg}(\underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})))\mathrm{n} \gg \dot{\neg}(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) <= \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] \Rightarrow \dot{\neg}(\dot{\neg}(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) = \underline{(\mathrm{fx})}[\underline{\mathsf{m}}])\mathrm{n})\mathrm{n})\mathrm{n}; \mathrm{JoinConjuncts} \rhd \underline{\mathsf{n}} <= \underline{\mathsf{m}} \rhd \dot{\neg}(((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}\underline{(\epsilon)})) <= \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] \Rightarrow \dot{\neg}(\dot{\neg}(((\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}(((\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 (\epsilon)\colon \forall (\mathrm{fx})\colon \forall (\mathrm{fy})\colon \mathrm{Ded} \rhd \forall \underline{\mathsf{m}}\colon \forall \underline{\mathsf{n}}\colon \forall (\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}}] <= ((\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}(((\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} \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{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(\mathrm{fx})}[\underline{\mathsf{m}}] <= ((\mathrm{fy})[\underline{\mathsf{m}}] + (-\mathrm{u}(\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}(((\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}\rceil, \mathrm{p}_0, \mathsf{c})]$

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

$[\mathrm{FromNot} < \mathrm{f(Weak)} \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 (\epsilon)\colon \forall \underline{(\mathrm{fx})}\colon \forall \underline{(\mathrm{fy})}\colon \dot{\neg}(\forall_{\mathrm{obj}} \underline{(\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 <= \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}(\epsilon))))\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n})\mathrm{n} \vdash \mathrm{Ded} \rhd \dot{\neg}(\forall_{\mathrm{obj}} \underline{(\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 <= \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})\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{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}}] <=$

$(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n; \forall\underline{\mathsf{m}}: \forall\underline{\mathsf{n}}: \forall\underline{(\epsilon)}: \forall\underline{(fx)}: \forall\underline{(fy)}: \mathrm{Ded} \triangleright$
$\forall\underline{\mathsf{m}}: \forall\underline{\mathsf{n}}: \forall\underline{(\epsilon)}: \forall\underline{(fx)}: \forall\underline{(fy)}: \dot\neg(\forall_{obj}\underline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <=$
$(\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n \vdash \dot\neg(\forall_{obj}\overline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \gg \dot\neg(\forall_{obj}\underline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <=$
$(\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n \Rightarrow \dot\neg(\forall_{obj}\overline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n; \dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <=$
$\overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <=$
$(\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \vdash$
$\mathrm{MT} \triangleright \dot\neg(\forall_{obj}\underline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n \Rightarrow$
$\dot\neg(\forall_{obj}\overline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n \triangleright$
$\dot\neg(\dot\neg(\forall_{obj}\overline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\overline{\mathsf{n}}: \dot\neg(\forall_{obj}\overline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \overline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \overline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\overline{\mathsf{n}} <= \overline{\mathsf{m}} \Rightarrow \underline{(fx)}[\overline{\mathsf{m}}] <= (\underline{(fy)}[\overline{\mathsf{m}}] + (-u\overline{(\epsilon)})))n)n)n)n)n)n)n \gg$
$\dot\neg(\dot\neg(\forall_{obj}\underline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n)n; \mathrm{EEA-negated} \triangleright$
$\dot\neg(\dot\neg(\forall_{obj}\underline{(\epsilon)}: \dot\neg(\dot\neg(\forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n)n)n \gg$
$\forall_{obj}\underline{(\epsilon)}: \forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n; \mathrm{A4} @ \underline{(\epsilon)} \triangleright$
$\forall_{obj}\underline{(\epsilon)}: \forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n \gg$
$\forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n; \mathrm{A4} @ \underline{\mathsf{n}} \triangleright$
$\forall_{obj}\underline{\mathsf{n}}: \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow$
$\underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n \gg \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow$
$\dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <=$
$(\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n; \mathrm{FromNot} < \mathrm{f(Weak)(Helper)} \gg \dot\neg(\dot\neg(\dot\neg(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <=$
$(\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n \Rightarrow \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) <= \underline{(fx)}[\underline{\mathsf{m}}] \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) =$
$\underline{(fx)}[\underline{\mathsf{m}}])n)n)n)n)n; \mathrm{ExistMP} \triangleright \dot\neg(\dot\neg(\dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow$
$\dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <= (\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n \Rightarrow \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 =$
$\underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) <= \underline{(fx)}[\underline{\mathsf{m}}] \Rightarrow$
$\dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) = \underline{(fx)}[\underline{\mathsf{m}}])n)n)n)n)n \triangleright \dot\neg(\forall_{obj}\underline{\mathsf{m}}: \dot\neg(\dot\neg(\dot\neg(\dot\neg(0 <=$
$\underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <= \underline{\mathsf{m}} \Rightarrow \underline{(fx)}[\underline{\mathsf{m}}] <=$
$(\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})))n)n)n)n)n \gg \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow \dot\neg(\underline{\mathsf{n}} <=$
$\underline{\mathsf{m}} \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) <= \underline{(fx)}[\underline{\mathsf{m}}] \Rightarrow \dot\neg(\dot\neg(((\underline{(fy)}[\underline{\mathsf{m}}] + (-u\underline{(\epsilon)})) =$
$\underline{(fx)}[\underline{\mathsf{m}}])n)n)n)n)n; \mathrm{IntroExist} @ \underline{\mathsf{m}} \triangleright \dot\neg(0 <= \underline{(\epsilon)} \Rightarrow \dot\neg(\dot\neg(0 = \underline{(\epsilon)})n)n)n \Rightarrow$

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

---

a
venter—-

[sup $\stackrel{\text{prio}}{\rightarrow}$

Preassociative

[sup], [base], [bracket $*$ end bracket], [big bracket $*$ end bracket], [\$ $*$ \$], [**flush left** [$*$]], [x], [y], [z], [[$* \bowtie *$]], [[$* \stackrel{*}{\rightarrow} *$]], [pyk], [tex], [name], [prio], [$*$], [T], [if($*,*,*$)], [[$* \stackrel{*}{\Rightarrow} *$]], [val], [claim], [$\perp$], [f($*$)], [$(*)^{\mathrm{I}}$], [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], [$(*)^{\mathrm{M}}$], [If($*,*,*$)], [array{$*$} $*$ end array], [l], [c], [r], [empty], [$\langle * \mid * := * \rangle$], [$\mathcal{M}(*)$], [$\tilde{\mathcal{U}}(*)$], [$\mathcal{U}(*)$], [$\mathcal{U}^{\mathrm{M}}(*)$], [**apply**($*,*$)], [$\mathbf{apply}_1(*,*)$], [identifier($*$)], [$\mathrm{identifier}_1(*,*)$], [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], [s_0], [**zip**($*,*$)], [$\mathbf{assoc}_1(*,*,*)$], [$(*)^{\mathsf{P}}$], [self], [[$* \stackrel{..}{=} *$]], [[$* \doteq *$]], [[$* \stackrel{\prime}{=} *$]], [[$* \stackrel{\text{pyk}}{=} *$]], [[$* \stackrel{\text{tex}}{=} *$]], [[$* \stackrel{\text{name}}{=} *$]], [**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**($*,*,*$)], [$\langle * \rangle$], [$\mathbf{tuple}_1(*)$], [$\mathbf{tuple}_2(*)$], [$\mathrm{let}_2(*,*)$], [$\mathrm{let}_1(*,*)$], [[$* \stackrel{\text{claim}}{=} *$]], [checker], [**check**($*,*$)], [$\mathbf{check}_2(*,*,*)$], [$\mathbf{check}_3(*,*,*)$], [$\mathbf{check}^*(*,*)$], [$\mathbf{check}^*_2(*,*,*)$], [[$*]^{\cdot}$], [[$*]^{-}$], [[$*]^{\circ}$], [msg], [[$* \stackrel{\text{msg}}{=} *$]], [<stmt>], [stmt], [[$* \stackrel{\text{stmt}}{=} *$]], [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(*, *, *)], [$\mathrm{proof}_2(*, *)$], [$\mathcal{S}(*, *)$], [$\mathcal{S}^{\mathrm{I}}(*, *)$], [$\mathcal{S}^{\rhd}(*, *)$], [$\mathcal{S}_1^{\rhd}(*, *, *)$], [$\mathcal{S}^{\mathrm{E}}(*, *)$], [$\mathcal{S}_1^{\mathrm{E}}(*, *, *)$], [$\mathcal{S}^{+}(*, *)$], [$\mathcal{S}_1^{+}(*, *, *)$], [$\mathcal{S}^{-}(*, *)$], [$\mathcal{S}_1^{-}(*, *, *)$], [$\mathcal{S}^{*}(*, *)$], [$\mathcal{S}_1^{*}(*, *, *)$], [$\mathcal{S}_2^{*}(*, *, *, *)$], [$\mathcal{S}^{@}(*, *)$], [$\mathcal{S}_1^{@}(*, *, *)$], [$\mathcal{S}^{\vdash}(*, *)$], [$\mathcal{S}_1^{\vdash}(*, *, *, *)$], [$\mathcal{S}^{\Vdash}(*, *)$], [$\mathcal{S}_1^{\Vdash}(*, *, *, *)$], [$\mathcal{S}^{\mathrm{i.e.}}(*, *)$], [$\mathcal{S}_1^{\mathrm{i.e.}}(*, *, *, *)$], [$\mathcal{S}_2^{\mathrm{i.e.}}(*, *, *, *, *)$], [$\mathcal{S}^{\forall}(*, *)$], [$\mathcal{S}_1^{\forall}(*, *, *, *)$], [$\mathcal{S}^{;}(*, *)$], [$\mathcal{S}_1^{;}(*, *, *)$], [$\mathcal{S}_2^{;}(*, *, *, *)$], [$\mathcal{T}(*)$], [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], [$\mathrm{T_E}$], [ragged right], [ragged right expansion], [parm(*, *, *)], [$\mathrm{parm}^*(*, *, *)$], [inst(*, *)], [$\mathrm{inst}^*(*, *)$], [occur(*, *, *)], [$\mathrm{occur}^*(*, *, *)$], [unify(* = *, *)], [$\mathrm{unify}^*(* = *, *)$], [$\mathrm{unify}_2(* = *, *)$], [$\mathrm{L_a}$], [$\mathrm{L_b}$], [$\mathrm{L_c}$], [$\mathrm{L_d}$], [$\mathrm{L_e}$], [$\mathrm{L_f}$], [$\mathrm{L_g}$], [$\mathrm{L_h}$], [$\mathrm{L_i}$], [$\mathrm{L_j}$], [$\mathrm{L_k}$], [$\mathrm{L_l}$], [$\mathrm{L_m}$], [$\mathrm{L_n}$], [$\mathrm{L_o}$], [$\mathrm{L_p}$], [$\mathrm{L_q}$], [$\mathrm{L_r}$], [$\mathrm{L_s}$], [$\mathrm{L_t}$], [$\mathrm{L_u}$], [$\mathrm{L_v}$], [$\mathrm{L_w}$], [$\mathrm{L_x}$], [$\mathrm{L_y}$], [$\mathrm{L_z}$], [$\mathrm{L_A}$], [$\mathrm{L_B}$], [$\mathrm{L_C}$], [$\mathrm{L_D}$], [$\mathrm{L_E}$], [$\mathrm{L_F}$], [$\mathrm{L_G}$], [$\mathrm{L_H}$], [$\mathrm{L_I}$], [$\mathrm{L_J}$], [$\mathrm{L_K}$], [$\mathrm{L_L}$], [$\mathrm{L_M}$], [$\mathrm{L_N}$], [$\mathrm{L_O}$], [$\mathrm{L_P}$], [$\mathrm{L_Q}$], [$\mathrm{L_R}$], [$\mathrm{L_S}$], [$\mathrm{L_T}$], [$\mathrm{L_U}$], [$\mathrm{L_V}$], [$\mathrm{L_W}$], [$\mathrm{L_X}$], [$\mathrm{L_Y}$], [$\mathrm{L_Z}$], [$\mathrm{L_?}$], [Reflexivity], [$\mathrm{Reflexivity}_1$], [Commutativity], [$\mathrm{Commutativity}_1$], [<tactic>], [tactic], [[$* \overset{\mathrm{tactic}}{=} *$]], [$\mathcal{P}(*, *, *)$], [$\mathcal{P}^*(*, *, *)$], [$\mathrm{p}_0$], [$\mathrm{conclude}_1(*, *)$], [$\mathrm{conclude}_2(*, *, *)$], [$\mathrm{conclude}_3(*, *, *, *)$], [$\mathrm{conclude}_4(*, *)$], [check], [[$* \overset{\circ}{=} *$]], [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(*, *)], [$* \stackrel{..}{==} *$], [ContainsEmpty(*)], [Nat(*)], [Dedu(*, *)], [$\mathrm{Dedu}_0(*, *)$], [$\mathrm{Dedu_s}(*, *, *)$], [$\mathrm{Dedu}_1(*, *, *)$], [$\mathrm{Dedu}_2(*, *, *)$], [$\mathrm{Dedu}_3(*, *, *, *)$], [$\mathrm{Dedu}_4(*, *, *, *)$], [$\mathrm{Dedu}_4^*(*, *, *, *)$], [$\mathrm{Dedu}_5(*, *, *)$], [$\mathrm{Dedu}_6(*, *, *, *)$], [$\mathrm{Dedu}_6^*(*, *, *, *)$], [$\mathrm{Dedu}_7(*)$], [$\mathrm{Dedu}_8(*, *)$], [$\mathrm{Dedu}_8^*(*, *)$], [$\mathrm{Ex}_1$], [$\mathrm{Ex}_2$], [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)], [(ϵ)], [$(\epsilon)_1$], [(ϵ2)], [(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], [$RATIONAL_S$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], [lemma plus0Left], [lemma times1Left], [lemma eqAdditionLeft], [lemma eqMultiplicationLeft], [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)], [lemma =f to sameF], [lemma plusF(Sym)], [lemma timesF(Sym)], [Separation2formula(1)], [Separation2formula(2)], [IfThenElse(T)], [IfThenElse(F)], [Cauchy], [PlusF], [ReciprocalF], [From ==], [To ==], [From <<], [to <<], [FromInR], [PlusR], [PlusR(Sym)], [TimesR], [TimesR(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)], [Unminus(R)], [FromLimit], [ToUpperBound], [FromUpperBound], [USisUpperBound], [0not1(R)], [ExpUnbounded(R)], [FromLeq(Advanced)(N)], [FromLeastUpperBound], [ToLeastUpperBound], [XSisNotUpperBound], [ysFGreater], [ysFLess], [SmallInverse], [NatType], [RationalType], [SeriesType], [Max], [Numerical], [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)], [To!! ==], [ToNegatedDoubleImply], [ToNegatedAnd(1)], [AddNegatedAll], [(A)to(E)(Imply)], [(E)to(A)(Imply)], [(E)to(A)(Imply)], [ToNegatedAEA], [UniqueNegative], [DoubleMinus], [MinusNegated], [eqReflexivity], [eqSymmetry], [eqTransitivity], [eqTransitivity4], [eqTransitivity5], [eqTransitivity6], [AddEquations], [SubtractEquations], [SubtractEquationsLeft], [MultiplyEquations], [EqNegated], [PositiveToRight(Eq)], [PositiveToLeft(Eq)], [PositiveToLeft(Eq)(1term)], [NegativeToLeft(Eq)], [NonreciprocalToRight(Eq)(1term)], [DistributionOut(Minus)], [PositiveToRight(Eq)(1term)], [SameSeries(NumDiff)], [PlusAssociativity(4terms)], [LessNeq], [NeqSymmetry], [NeqNegated], [SubNeqRight], [SubNeqLeft], [NegativeToRight(Neq)(1term)], [NeqAddition], [NeqMultiplication], [NonzeroProduct(2)], [SwitchTerms(x <= y − z)], [NegativeToLeft(Less)(1term)], [(+1)IsPositive(N)], [(1/2)(x + y) − x = (1/2)(y − x)], [y − (1/2)(x + y) = (1/2)(y − x)], [ExpZero(Exact)], [SameExp(Base)], [SameExp(Indu)], [SameExp], [Exp(+1)], [PositiveBase(Base)], [PositiveBase(Indu)], [PositiveBase], [BSzero(Exact)], [SameBS(2)(Base)], [SameBS(2)(Indu)], [SameBS(2)], [BS(+1)], [BSbound(Exact)(Base)], [BSbound(Exact)(Indu)], [BSbound(Exact)], [BSbound], [UStelescope(Zero)(Exact)], [SameTelescope(2)(Base)], [SameTelescope(2)(Indu)], [SameTelescope(2)], [UStelescope(+1)], [TelescopeNumerical(Base)], [TelescopeNumerical(Indu)], [TelescopeNumerical], [TelescopeBound(Base)], [TelescopeBound(Indu)], [TelescopeBound], [LessNeq(F)(Helper)], [LessNeq(F)], [LessNeq(R)], [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)], [LeqTotality(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], [ReciprocalFnynonzero],
[(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], [PositiveToRight(Less)(1term)],
[(A)to(E)], [lemma ==Transitivity4], [Plus0Left(R)], [x = x + (y − y)(R)],
[x = x + y − y(R)], [PositiveToRight(Eq)(R)], [SubtractEquations(R)],
[NeqAddition(R)], [EqAdditionLeft(R)], [Three2twoTerms(R)],
[PositiveToRight(Less)(R)], [Three2threeTerms(R)],
[PositiveToRight(Less)(1term)(R)], [ToLeq(Advanced)(R)], [LeqNeqLess(R)],
[SubLeqLeft(R)], [LeqLessTransitivity(R)], [NegativeToLeft(Eq)(R)],
[NegativeToRight(Less)(R)], [!! == Symmetry], [NegativeToRight(Eq)(R)],
[NegativeToRight(Eq)(1term)(R)], [DoubleMinus(R)], [UniqueNegative(R)],
[SubtractEquationsLeft(R)], [EqNegated(R)], [NeqNegated(R)],
[LeqNegated(R)], [LessNegated(R)], [−0 = 0(R)], [NegativeNegated(R)],
[FromLeqGeq(R)], [SubLeqRight(R)], [FromLess(R)],
[NonnegativeNumerical(R)], [NegativeNumerical(R)], [0 <= |x|(R)],
[PositiveNegated(R)], [AddEquations(R)], [DistributionOut(R)],
[== Transitivity5], [x ∗ 0 + x = x(R)], [x ∗ 0 = 0(R)(fff)], [Times(−1)(R)],
[Times(−1)Left(R)], [−x − y = −(x + y)(R)], [LessTotality(R)],
[PositiveNumerical(R)], [SignNumerical(+)(R)], [SameNumerical(R)],
[MinusNegated(R)], [SignNumerical(R)], [NumericalDifference(R)],
[x <= |x|(R)], [USlimitIsUpperBound(Helper)], [USlimitIsUpperBound],
[(−1) ∗ (−1) + (−1) ∗ 1 = 0(R)], [(−1) ∗ (−1) = 1(R)], [0 < 1Helper(R)],
[0 < 1(R)], [ExpZero(Exact)(R)], [PositiveBase(R)(Base)],
[Three2twoFactors(R)], [x = x ∗ y ∗ (1/y)(R)], [NeqMultiplication(R)],
[LessTransitivity(R)], [0 < 2(R)], [SameExp(R)(Base)], [SameExp(R)(Indu)],
[SameExp(R)], [SubNeqLeft(R)], [SubNeqRight(R)], [NonzeroFactors(R)],
[NonnegativeFactors(R)], [PositiveFactors(R)], [LessDivision(R)], [0 < 1/2(R)],
[PositiveToRight(Eq)(1term)(R)], [Exp(+1)(R)], [PositiveBase(R)(Indu)],

[PositiveBase(R)], [−x ∗ y = −(x ∗ y)(R)], [PositiveToLeft(Eq)(R)], [Times1Left(R)], [== Transitivity6], [x + x = 2 ∗ x(R)], [(1/2)x + (1/2)x = x(R)], [DistributionOut(Minus)(R)], [(1/2)(x + y) − x = (1/2)(y − x)(R)], [IntervalSize(R)(Base)], [LessMultiplicationLeft(R)], [NegativeToLeft(Less)(R)], [NegativeToLeft(Less)(1term)(R)], [y − (1/2)(x + y) = (1/2)(y − x)(R)], [IntervalSize(R)(Indu)], [IntervalSize(R)], [XSlessUS(R)], [USdecreasing(+1)(R)], [ExpUnbounded(Base)], [ExpUnbounded(Indu)], [ExpUnbounded], [1 <= x + 1(N)], [NonzeroProduct(2)(R)], [PositiveNonzero(R)], [NonreciprocalToRight(Eq)(1term)(R)], [ExpNonzero(Base)], [ExpNonzero(Indu)], [ExpNonzero], [ExpNonzero(2)], [MultiplyEquations(R)], [HalfBase(Base)], [HalfBase(Indu)], [HalfBase], [Three2threeFactors(R)], [x ∗ y = zBackwards(R)], [PositiveInverted(R)], [ReciprocalToRight(Less)(R)], [ReciprocalToRight(Less)(1term)(R)], [NonreciprocalToLeft(Less)(R)], [1 < x ∗ y(R)], [SwitchFactors(1/x < y)(R)], [SmallHalving], [IntervalSize(anyPositive)], [USdecreasing(+n)(Base)], [USdecreasing(+n)(Indu)], [USdecreasing(+n)], [USdecreasing], [LeqAdditionLeft(R)], [ToNotLess(R)], [LimitOfUSIsLeq], [SubtractEquations(Less)(R)], [SubtractEquationsLeft(Less)(R)], [LessNegated(Negative)(R)], [FromNegatedAnd(Imply)], [RemoveDoubleNeg(Consequent)], [FromNotUpperBound], [DistributionOut], [DistributionOutLeft], [DistributionLeft], [LeqNUB], [USlimitIsLeastUpperBound(Helper)], [USlimitIsLeastUpperBound], [FromNotLess(R)], [ExistMP3], [GreaterPositive(N)], [ysFClose(Helper)], [ysFClose], [ysFCauchy(Helper)], [ysFCauchy], [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)];

Preassociative

[Tester1], [Tester2], [Tester3], [Tester4], [Tester5], [Tester6];
Preassociative
[*_{*}], [*/indexintro(*, *, *, *)], [*/intro(*, *, *)], [*/bothintro(*, *, *, *, *)], [*/nameintro(*, *, *, *)], [*′], [*[*]], [*[*→*]], [*[*⇒*]], [*0], [*1], [0b], [*-color(*)], [*-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(*) ++ *], [
*], [*], [!*], ["*], [#*], [$*], [%*], [&*], [’*], [(*], [)*], [**], [+*], [, *], [-*], [.*], [/*], [0*], [1*], [2*], [3*], [4*], [5*], [6*], [7*], [8*], [9*], [:*], [; *], [<*], [=*], [>*], [?*], [@*], [A*], [B*], [C*], [D*], [E*], [F*], [G*], [H*], [I*], [J*], [K*], [L*], [M*], [N*], [O*], [P*], [Q*], [R*], [S*], [T*], [U*], [V*], [W*], [X*], [Y*], [Z*], [[*], [*], []*], [^*], [_*], [‘*], [a*], [b*], [c*], [d*], [e*], [f*], [g*], [h*], [i*], [j*], [k*], [l*], [m*], [n*], [o*], [p*], [q*], [r*], [s*], [t*], [u*], [v*], [w*], [x*], [y*], [z*], [{*], [|*], [}*], [~*], [**Preassociative** *; *], [**Postassociative** *; *], [[*], *], [priority * end], [newline *], [macro newline *], [MacroIndent(*)];
Preassociative
[* ’ *], [* ‘ *];
Preassociative
[*(exp)*];
Preassociative
[*′], [R(*)], [− − R(*)], [rec*];
Preassociative
[*/*], [* ∩ *], [*[*]];
Preassociative
[∪*], [* ∪ *], [P(*)];
Preassociative
[{*}], [StateExpand(*, *, *)], [extractSeries(*)], [SetOfSeries(*)], [− − Macro(*)], [ExpandList(*, *, *)], [* * Macro(*)], [+ + Macro(*)], [<< Macro(*)], [UB(*, *)], [LUB(*, *)], [BS(*, *)], [UStelescope(*, *)], [(*)], [|r * |], [Limit(*, *)], [Union(*)], [IsOrderedPair(*, *, *)], [IsRelation(*, *, *)], [isFunction(*, *, *)], [IsSeries(*, *)], [IsNatural(*, *)], [OrderedPair(*, *)], [TypeNat(*)], [TypeNat0(*)], [TypeRational(*)], [TypeRational0(*)], [TypeSeries(*, *)], [Typeseries0(*, *)];
Preassociative
[{*, *}], [⟨*, *⟩], [(−u*)], [$-_{\mathrm{f}}$*], [(− − *)], [1f/*], [1fny/*], [01//temp*];
Preassociative
[*(*, *)], [ReflRel(*, *)], [SymRel(*, *)], [TransRel(*, *)], [EqRel(*, *)], [$[* \in *]_*$], [Partition(*, *)];
Preassociative
[* · *], [$* \cdot_0 *$], [(* * *)], [$* *_{\mathrm{f}} *$], [* * **];
Preassociative
[* + *], [$* +_0 *$], [$* +_1 *$], [* − *], [$* -_0 *$], [$* -_1 *$], [(* + *)], [(* − *)], [$* +_{\mathrm{f}} *$], [$* -_{\mathrm{f}} *$], [* + +*], [R(*) − −R(*)];
Preassociative
[* ∈ *];

Preassociative
$[| * |], [\mathrm{if}(*, *, *)], [\mathrm{Max}(*, *)], [\mathrm{Max}(*, *)];$
Preassociative
$[* = *], [* \neq *], [* <= *], [* < *], [* <_{\mathrm{f}} *], [* \leq_{\mathrm{f}} *], [\mathrm{SF}(*, *)], [* == *],$
$[*!! == *], [* << *], [* <<== *];$
Preassociative
$[* \cup \{*\}], [* \cup *], [* \backslash \{*\}];$
Postassociative
$[* \therefore *], [* \underline{\therefore} *], [* \underline{::} *], [* \underline{+2*} *], [* :: *], [* +2* *];$
Postassociative
$[*, *];$
Preassociative
$[* \stackrel{\mathrm{B}}{\approx} *], [* \stackrel{\mathrm{D}}{\approx} *], [* \stackrel{\mathrm{C}}{\approx} *], [* \stackrel{\mathrm{P}}{\approx} *], [* \approx *], [* = *], [* \stackrel{+}{\to} *], [* \stackrel{\mathrm{t}}{=} *], [* \stackrel{\mathrm{t}^*}{=} *], [* \stackrel{\mathrm{r}}{=} *],$
$[* \in_{\mathrm{t}} *], [* \subseteq_{\mathrm{T}} *], [* \stackrel{\mathrm{T}}{=} *], [* \stackrel{\mathrm{s}}{=} *], [* \text{ free in } *], [* \text{ free in}^* *], [* \text{ free for } * \text{ in } *],$
$[* \text{ free for}^* * \text{ in } *], [* \in_{\mathrm{c}} *], [* < *], [* <' *], [* \leq' *], [* = *], [* \neq *], [*^{\mathrm{var}}],$
$[* \#^0 *], [* \#^1 *], [* \#^* *], [* {=}{=} *], [* \subseteq *];$
Preassociative
$[\neg *], [\dot{\neg} (*)\mathrm{n}], [* \notin *], [* \neq *];$
Preassociative
$[* \wedge *], [* \ddot{\wedge} *], [* \tilde{\wedge} *], [* \wedge_{\mathrm{c}} *], [* \dot{\wedge} *];$
Preassociative
$[* \vee *], [* \parallel *], [* \ddot{\vee} *];$
Postassociative
$[* \dot{\vee} *];$
Preassociative
$[\exists *: *], [\forall *: *], [\forall_{\mathrm{obj}} *: *], [\exists *: *];$
Postassociative
$[* \ddot{\Rightarrow} *], [* \Rightarrow *], [* \Leftrightarrow *], [* \dot{\Leftrightarrow} *];$
Preassociative
$[\{\mathrm{ph} \in * \mid *\}];$
Postassociative
$[* : *], [* \text{ spy } *], [*!*];$
Preassociative
$[* \left\{ \begin{array}{c} * \\ * \end{array} \right.];$
Preassociative
$[\lambda * .*], [\Lambda * .*], [\Lambda *], [\textbf{if } * \textbf{ then } * \textbf{ else } *], [\textbf{let } * = * \textbf{ in } *], [\textbf{let } * \ddot{=} * \text{ in } *];$
Preassociative
$[* \# *];$
Preassociative
$[*^{\mathrm{I}}], [*^{\rhd}], [*^{\mathrm{V}}], [*^{+}], [*^{-}], [*^{*}];$
Preassociative
$[* @ *], [* \rhd *], [* \blacktriangleright *], [* \gg *], [* \trianglerighteq *];$
Postassociative
$[* \vdash *], [* \Vdash *], [* \text{ i.e. } *];$

Preassociative
$[\forall *\colon *], [\Pi *\colon *];$
Postassociative
$[* \oplus *];$
Postassociative
$[*; *];$
Preassociative
$[* \text{ proves } *];$
Preassociative
$[* \textbf{ proof of } * : *], [\text{Line} * : * \gg *; *], [\text{Last line} * \gg * \square],$
$[\text{Line} * : \text{Premise} \gg *; *], [\text{Line} * : \text{Side-condition} \gg *; *], [\text{Arbitrary} \gg *; *],$
$[\text{Local} \gg * = *; *], [\text{Begin} *; * : \text{End}; *], [\text{Last block line} * \gg * ;],$
$[\text{Arbitrary} \gg *; *];$
Postassociative
$[* \mid *];$
Postassociative
$[* , *], [*[*]*];$
Preassociative
$[* \& *];$
Preassociative
[∗\\∗], [∗ linebreak[4] ∗], [∗\\∗];]

A Pyk definitioner

[To!! == $\stackrel{\text{pyk}}{\rightarrow}$ "lemma to!!=="]

[ToNegatedDoubleImply $\stackrel{\text{pyk}}{\rightarrow}$ "prop lemma to negated double imply"]

[ToNegatedAnd(1) $\stackrel{\text{pyk}}{\rightarrow}$ "prop lemma to negated and(1)"]

[AddNegatedAll $\stackrel{\text{pyk}}{\rightarrow}$ "pred lemma addNegatedAll"]

[(A)to(E)(Imply) $\stackrel{\text{pyk}}{\rightarrow}$ "pred lemma (A)to(˜E˜)(Imply)"]

[(E)to(A)(Imply) $\stackrel{\text{pyk}}{\rightarrow}$ "pred lemma (E)to(˜A˜)(Imply)"]

[(E)to(A)(Imply) $\stackrel{\text{pyk}}{\rightarrow}$ "pred lemma (E˜)to(˜A)(Imply)"]

[ToNegatedAEA $\stackrel{\text{pyk}}{\rightarrow}$ "pred lemma toNegatedAEA"]

[UniqueNegative $\stackrel{\text{pyk}}{\rightarrow}$ "lemma uniqueNegative"]

[DoubleMinus $\stackrel{\text{pyk}}{\rightarrow}$ "lemma doubleMinus"]

[MinusNegated $\stackrel{\text{pyk}}{\rightarrow}$ "lemma minusNegated"]

[eqReflexivity $\stackrel{\text{pyk}}{\rightarrow}$ "lemma eqReflexivity"]

[eqSymmetry $\stackrel{\text{pyk}}{\rightarrow}$ "lemma eqSymmetry"]

[eqTransitivity $\stackrel{\text{pyk}}{\rightarrow}$ "lemma eqTransitivity"]

[eqTransitivity4 $\stackrel{\text{pyk}}{\rightarrow}$ "lemma eqTransitivity4"]

[eqTransitivity5 $\stackrel{\text{pyk}}{\rightarrow}$ "lemma eqTransitivity5"] [eqTransitivity6 $\stackrel{\text{pyk}}{\to}$ “lemma eqTransitivity6”]

[AddEquations $\stackrel{\text{pyk}}{\to}$ “lemma addEquations”]

[SubtractEquations $\stackrel{\text{pyk}}{\to}$ “lemma subtractEquations”]

[SubtractEquationsLeft $\stackrel{\text{pyk}}{\to}$ “lemma subtractEquationsLeft”]

[MultiplyEquations $\stackrel{\text{pyk}}{\to}$ “lemma multiplyEquations”]

[EqNegated $\stackrel{\text{pyk}}{\to}$ “lemma eqNegated”]

[PositiveToRight(Eq) $\stackrel{\text{pyk}}{\to}$ “lemma positiveToRight(Eq)”]

[PositiveToLeft(Eq) $\stackrel{\text{pyk}}{\to}$ “lemma positiveToLeft(Eq)”]

[PositiveToLeft(Eq)(1term) $\stackrel{\text{pyk}}{\to}$ “lemma positiveToLeft(Eq)(1 term)”]

[NegativeToLeft(Eq) $\stackrel{\text{pyk}}{\to}$ “lemma negativeToLeft(Eq)”]

[NonreciprocalToRight(Eq)(1term) $\stackrel{\text{pyk}}{\to}$ “lemma nonreciprocalToRight(Eq)(1 term)”]

[DistributionOut(Minus) $\stackrel{\text{pyk}}{\to}$ “lemma distributionOut(Minus)”]

[PositiveToRight(Eq)(1term) $\stackrel{\text{pyk}}{\to}$ “lemma positiveToRight(Eq)(1 term)”]

[SameSeries(NumDiff) $\stackrel{\text{pyk}}{\to}$ “lemma sameSeries(NumDiff)”]

[PlusAssociativity(4terms) $\stackrel{\text{pyk}}{\to}$ “lemma plusAssociativity(4 terms)”]

[LessNeq $\stackrel{\text{pyk}}{\to}$ “lemma lessNeq”]

[NeqSymmetry $\stackrel{\text{pyk}}{\to}$ “lemma neqSymmetry”]

[NeqNegated $\stackrel{\text{pyk}}{\to}$ “lemma neqNegated”]

[SubNeqRight $\stackrel{\text{pyk}}{\to}$ “lemma subNeqRight”]

[SubNeqLeft $\stackrel{\text{pyk}}{\to}$ “lemma subNeqLeft”]

[NegativeToRight(Neq)(1term) $\stackrel{\text{pyk}}{\to}$ “lemma negativeToRight(Neq)(1 term)”]

[NeqAddition $\stackrel{\text{pyk}}{\to}$ “lemma neqAddition”]

[NeqMultiplication $\stackrel{\text{pyk}}{\to}$ “lemma neqMultiplication”]

[NonzeroProduct(2) $\stackrel{\text{pyk}}{\to}$ “lemma nonzeroProduct(2)”]

[SwitchTerms($x <= y - z$) $\stackrel{\text{pyk}}{\to}$ “lemma switchTerms(x<=y-z)”]

[NegativeToLeft(Less)(1term) $\stackrel{\text{pyk}}{\to}$ “lemma negativeToLeft(Less)(1 term)”]

[(+1)IsPositive(N) $\stackrel{\text{pyk}}{\to}$ “lemma +1IsPositive(N)”]

[$(1/2)(x+y) - x = (1/2)(y-x)$ $\stackrel{\text{pyk}}{\to}$ “lemma (1/2)(x+y)-x=(1/2)(y-x)”]

[$y - (1/2)(x+y) = (1/2)(y-x)$ $\stackrel{\text{pyk}}{\to}$ “lemma y-(1/2)(x+y)=(1/2)(y-x)”]

[ExpZero(Exact) $\stackrel{\text{pyk}}{\to}$ “lemma expZero exact”]

[SameExp(Base) $\stackrel{\text{pyk}}{\to}$ “lemma sameExp base”]

[SameExp(Indu) $\stackrel{\text{pyk}}{\to}$ “lemma sameExp indu”]

[SameExp $\stackrel{\text{pyk}}{\to}$ “lemma sameExp”]

[Exp(+1) $\stackrel{\text{pyk}}{\to}$ “lemma exp(+1)”]

[PositiveBase(Base) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma positiveBase base"]

[PositiveBase(Indu) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma positiveBase indu"]

[PositiveBase $\stackrel{\text{pyk}}{\rightarrow}$ "lemma positiveBase"]

[BSzero(Exact) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma base(1/2)Sum zero exact"]

[SameBS(2)(Base) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma sameBase(1/2)Sum second base"]

[SameBS(2)(Indu) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma sameBase(1/2)Sum second indu"]

[SameBS(2) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma sameBase(1/2)Sum second"]

[BS(+1) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma base(1/2)Sum(+1)"]

[BSbound(Exact)(Base) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma base(1/2)Sum exact bound base"]

[BSbound(Exact)(Indu) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma base(1/2)Sum exact bound indu"]

[BSbound(Exact) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma base(1/2)Sum exact bound"]

[BSbound $\stackrel{\text{pyk}}{\rightarrow}$ "lemma base(1/2)Sum bound"]

[UStelescope(Zero)(Exact) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma UStelescope zero exact"]

[SameTelescope(2)(Base) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma sameTelescope second base"]

[SameTelescope(2)(Indu) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma sameTelescope second indu"]

[SameTelescope(2) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma sameTelescope second"]

[UStelescope(+1) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma UStelescope(+1)"]

[TelescopeNumerical(Base) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma telescopeNumerical base"]

[TelescopeNumerical(Indu) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma telescopeNumerical indu"]

[TelescopeNumerical $\stackrel{\text{pyk}}{\rightarrow}$ "lemma telescopeNumerical"]

[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"]

[LessNeq(F)(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma lessNeq(F) helper"]

[LessNeq(F) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma lessNeq(F)"]

[LessNeq(R) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma lessNeq(R)"]

[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”]
[AddAll $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma addAll”]
[AddExist(Helper1) $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma addExist helper1”]
[AddExist(Helper2) $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma addExist helper2”]
[AddExist $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma addExist”]
[AddExist(SimpleAnt) $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma addExist(SimpleAnt)”]
[AddExist(Simple) $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma addExist(Simple)”]
[AddEAE $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma addEAE”]
[AEA − negated $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma AEAnegated”]
[EEA − negated $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma EEAnegated”]
[Induction $\stackrel{\text{pyk}}{\rightarrow}$ “lemma induction”]
[leqAntisymmetry $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqAntisymmetry”]
[leqTransitivity $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqTransitivity”]
[leqAddition $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqAddition”]
[leqMultiplication $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqMultiplication”]
[Reciprocal $\stackrel{\text{pyk}}{\rightarrow}$ “lemma reciprocal”]
[Equality $\stackrel{\text{pyk}}{\rightarrow}$ “lemma equality”]
[eqLeq $\stackrel{\text{pyk}}{\rightarrow}$ “lemma eqLeq”]
[eqAddition $\stackrel{\text{pyk}}{\rightarrow}$ “lemma eqAddition”]
[eqMultiplication $\stackrel{\text{pyk}}{\rightarrow}$ “lemma eqMultiplication”]
[LeqMultiplicationLeft $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqMultiplicationLeft”]
[LeqLessEq $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqLessEq”]
[LessLeq $\stackrel{\text{pyk}}{\rightarrow}$ “lemma lessLeq”]
[FromLeqGeq $\stackrel{\text{pyk}}{\rightarrow}$ “lemma from leqGeq”]
[subLeqRight $\stackrel{\text{pyk}}{\rightarrow}$ “lemma subLeqRight”]
[subLeqLeft $\stackrel{\text{pyk}}{\rightarrow}$ “lemma subLeqLeft”]
[Leq + 1 $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqPlus1”]
[PositiveToRight(Leq) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma positiveToRight(Leq)”]
[PositiveToRight(Leq)(1term) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma positiveToRight(Leq)(1 term)”]

[lemma negativeToRight(Leq) $\stackrel{\text{pyk}}{\to}$ “lemma negativeToRight(Leq)”]

[PositiveToLeft(Leq) $\stackrel{\text{pyk}}{\to}$ “lemma positiveToLeft(Leq)”]

[negativeToLeft(Leq) $\stackrel{\text{pyk}}{\to}$ “lemma negativeToLeft(Leq)”]

[negativeToLeft(Leq)(1term) $\stackrel{\text{pyk}}{\to}$ “lemma negativeToLeft(Leq)(1 term)”]

[LeqAdditionLeft $\stackrel{\text{pyk}}{\to}$ “lemma leqAdditionLeft”]

[leqSubtraction $\stackrel{\text{pyk}}{\to}$ “lemma leqSubtraction”]

[leqSubtractionLeft $\stackrel{\text{pyk}}{\to}$ “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($\mathrm{x} < \mathrm{y} - \mathrm{z}$) $\stackrel{\text{pyk}}{\to}$ “lemma switchTerms(x<y-z)”]

[SwitchTerms($\mathrm{x} - \mathrm{y} < \mathrm{z}$) $\stackrel{\text{pyk}}{\to}$ “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 $\stackrel{\text{pyk}}{\rightarrow}$ “lemma splitNumericalSum”]

[SplitNumericalProduct(++) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma splitNumericalProduct(++)”]

[SplitNumericalProduct(+−) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma splitNumericalProduct(+-)”]

[SplitNumericalProduct $\stackrel{\text{pyk}}{\rightarrow}$ “lemma splitNumericalProduct”]

[insertMiddleTerm(Numerical) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma insertMiddleTerm(Numerical)”]

[insertTwoMiddleTerms(Numerical) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma insertTwoMiddleTerms(Numerical)”]

[Three2twoTerms $\stackrel{\text{pyk}}{\rightarrow}$ “lemma three2twoTerms”]

[Three2threeTerms $\stackrel{\text{pyk}}{\rightarrow}$ “lemma three2threeTerms”]

[Three2twoFactors $\stackrel{\text{pyk}}{\rightarrow}$ “lemma three2twoFactors”]

[Three2threeFactors $\stackrel{\text{pyk}}{\rightarrow}$ “lemma three2threeFactors”]

[Times(−1) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma times(-1)”]

[Times(−1)Left $\stackrel{\text{pyk}}{\rightarrow}$ “lemma times(-1)Left”]

[MaxLeq(1) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqMax1”]

[MaxLeq(2) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqMax2”]

[LessThanMax $\stackrel{\text{pyk}}{\rightarrow}$ “lemma lessThanMax”]

[x + y = zBackwards $\stackrel{\text{pyk}}{\rightarrow}$ “lemma x+y=zBackwards”]

[x ∗ y = zBackwards $\stackrel{\text{pyk}}{\rightarrow}$ “lemma x∗y=zBackwards”]

[x = x + (y − y) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma x=x+(y-y)”]

[x = x + y − y $\stackrel{\text{pyk}}{\rightarrow}$ “lemma x=x+y-y”]

[x = x ∗ y ∗ (1/y) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma x=x∗y∗(1/y)”]

[insertMiddleTerm(Sum) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma insertMiddleTerm(Sum)”]

[insertTwoMiddleTerms(Sum) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma insertTwoMiddleTerms(Sum)”]

[insertMiddleTerm(Difference) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma insertMiddleTerm(Difference)”]

[x ∗ 0 + x = x $\stackrel{\text{pyk}}{\rightarrow}$ “lemma x∗0+x=x”]

[x ∗ 0 = 0 $\stackrel{\text{pyk}}{\rightarrow}$ “lemma x∗0=0”]

[NonnegativeFactors $\stackrel{\text{pyk}}{\rightarrow}$ “lemma nonnegativeFactors”]

[NonzeroFactors $\stackrel{\text{pyk}}{\rightarrow}$ “lemma nonzeroFactors”]

[PositiveFactors $\stackrel{\text{pyk}}{\rightarrow}$ “lemma positiveFactors”]

[PlusTimesMinus $\stackrel{\text{pyk}}{\rightarrow}$ “lemma plusTimesMinus”]

[MinusTimesMinus $\stackrel{\text{pyk}}{\rightarrow}$ “lemma minusTimesMinus”]

[(−1) ∗ (−1) + (−1) ∗ 1 = 0 $\stackrel{\text{pyk}}{\rightarrow}$ “lemma (-1)∗(-1)+(-1)∗1=0”]

[(−1) ∗ (−1) = 1 $\stackrel{\text{pyk}}{\rightarrow}$ “lemma (-1)∗(-1)=1”]

[0 < 1Helper $\stackrel{\text{pyk}}{\rightarrow}$ “lemma 0<1Helper”]

[0 < 1 $\stackrel{\text{pyk}}{\rightarrow}$ “lemma 0<1”]

[0 < 2 $\overset{\text{pyk}}{\rightarrow}$ “lemma 0<2”]

[0 < 3 $\overset{\text{pyk}}{\rightarrow}$ “lemma 0<3”]

[0 < 1/2 $\overset{\text{pyk}}{\rightarrow}$ “lemma 0<1/2”]

[0 < 1/3 $\overset{\text{pyk}}{\rightarrow}$ “lemma 0<1/3”]

[TwoWholes $\overset{\text{pyk}}{\rightarrow}$ “lemma x+x=2∗x”]

[ThreeWholes $\overset{\text{pyk}}{\rightarrow}$ “lemma x+x+x=3∗x”]

[TwoHalves $\overset{\text{pyk}}{\rightarrow}$ “lemma (1/2)x+(1/2)x=x”]

[ThreeThirds $\overset{\text{pyk}}{\rightarrow}$ “lemma (1/3)x+(1/3)x+(1/3)x=x”]

[$-x - y = -(x + y)$ $\overset{\text{pyk}}{\rightarrow}$ “lemma -x-y=-(x+y)”]

[$-x * y = -(x * y)$ $\overset{\text{pyk}}{\rightarrow}$ “lemma -x∗y=-(x∗y)”]

[$-0 = 0$ $\overset{\text{pyk}}{\rightarrow}$ “lemma -0=0”]

[SFsymmetry $\overset{\text{pyk}}{\rightarrow}$ “lemma sameFsymmetry”]

[SFtransitivity $\overset{\text{pyk}}{\rightarrow}$ “lemma sameFtransitivity”]

[f2R(Plus) $\overset{\text{pyk}}{\rightarrow}$ “lemma f2R(Plus)”]

[f2R(Times) $\overset{\text{pyk}}{\rightarrow}$ “lemma f2R(Times)”]

[<< TransitivityHelper(Q) $\overset{\text{pyk}}{\rightarrow}$ “lemma <<TransitivityHelper(Q)”]

[<< Transitivity $\overset{\text{pyk}}{\rightarrow}$ “lemma <<Transitivity”]

[<<== Reflexivity $\overset{\text{pyk}}{\rightarrow}$ “lemma <<==Reflexivity”]

[<<== AntisymmetryHelper(Q) $\overset{\text{pyk}}{\rightarrow}$ “lemma <<==AntisymmetryHelper(Q)”]

[FromNot < f(Weak)(Helper) $\overset{\text{pyk}}{\rightarrow}$ “lemma fromNot<f(Weak) helper”]

[FromNot < f(Weak) $\overset{\text{pyk}}{\rightarrow}$ “lemma fromNot<f(Weak)”]

[FromNot < f(Strong)(Helper2) $\overset{\text{pyk}}{\rightarrow}$ “lemma fromNot<f(Strong) helper2”]

[FromNot < f(Strong)(Helper) $\overset{\text{pyk}}{\rightarrow}$ “lemma fromNot<f(Strong) helper”]

[FromNot < f(Strong) $\overset{\text{pyk}}{\rightarrow}$ “lemma fromNot<f(Strong)”]

[fromNotSameF(Strongest)(Helper2) $\overset{\text{pyk}}{\rightarrow}$ “lemma fromNotSameF(Strongest) helper2”]

[fromNotSameF(Strongest)(Helper) $\overset{\text{pyk}}{\rightarrow}$ “lemma fromNotSameF(Strongest) helper”]

[fromNotSameF(Strongest) $\overset{\text{pyk}}{\rightarrow}$ “lemma fromNotSameF(Strongest)”]

[ToLess(F)(Helper) $\overset{\text{pyk}}{\rightarrow}$ “lemma toLess(F) helper”]

[ToLess(F) $\overset{\text{pyk}}{\rightarrow}$ “lemma toLess(F)”]

[FromNot <<$\overset{\text{pyk}}{\rightarrow}$ “lemma fromNot<<”]

[ToLess(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma toLess(R)”]

[LeqTotality(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma leqTotality(R)”]

[FromNotSameF(Weak)(Helper) $\overset{\text{pyk}}{\rightarrow}$ “lemma fromNotSameF(Weak)(Helper)”]

[FromNotSameF(Weak) $\stackrel{\text{pyk}}{\to}$ “lemma fromNotSameF(Weak)”]

[FromNotLess(F) $\stackrel{\text{pyk}}{\to}$ “lemma fromNotLess(F)”]

[== Addition $\stackrel{\text{pyk}}{\to}$ “lemma ==Addition”]

[== AdditionLeft $\stackrel{\text{pyk}}{\to}$ “lemma ==AdditionLeft”]

[Fpart − Bounded(Base) $\stackrel{\text{pyk}}{\to}$ “lemma fpart-Bounded base”]

[Fpart − Bounded(InduHelper) $\stackrel{\text{pyk}}{\to}$ “lemma fpart-Bounded indu helper”]

[Fpart − Bounded(Indu) $\stackrel{\text{pyk}}{\to}$ “lemma fpart-Bounded indu”]

[Fpart − Bounded $\stackrel{\text{pyk}}{\to}$ “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”]

[ReciprocalFnynonzero $\stackrel{\text{pyk}}{\to}$ “lemma reciprocalFny 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"]

[PositiveToRight(Less)(1term) $\stackrel{\text{pyk}}{\to}$ "lemma positiveToRight(Less)(1 term)"]

[(A)to(E) $\stackrel{\text{pyk}}{\to}$ "pred lemma (A˜)to(˜E)"]

[lemma ==Transitivity4 $\stackrel{\text{pyk}}{\to}$ "lemma ==Transitivity4"]

[Plus0Left(R) $\stackrel{\text{pyk}}{\to}$ "lemma plus0Left(R)"]

[x = x + (y − y)(R) $\stackrel{\text{pyk}}{\to}$ "lemma x=x+(y-y)(R)"]

[x = x + y − y(R) $\stackrel{\text{pyk}}{\to}$ "lemma x=x+y-y(R)"]

[PositiveToRight(Eq)(R) $\stackrel{\text{pyk}}{\to}$ "lemma positiveToRight(Eq)(R)"]

[SubtractEquations(R) $\stackrel{\text{pyk}}{\to}$ "lemma subtractEquations(R)"]

[NeqAddition(R) $\stackrel{\text{pyk}}{\to}$ "lemma neqAddition(R)"]

[EqAdditionLeft(R) $\stackrel{\text{pyk}}{\to}$ "lemma eqAdditionLeft(R)"]

[Three2twoTerms(R) $\stackrel{\text{pyk}}{\to}$ "lemma three2twoTerms(R)"]

[PositiveToRight(Less)(R) $\stackrel{\text{pyk}}{\to}$ "lemma positiveToRight(Less)(R)"]

[Three2threeTerms(R) $\stackrel{\text{pyk}}{\to}$ "lemma three2threeTerms(R)"]

[PositiveToRight(Less)(1term)(R) $\stackrel{\text{pyk}}{\to}$ "lemma positiveToRight(Less)(1 term)(R)"]

[ToLeq(Advanced)(R) $\stackrel{\text{pyk}}{\to}$ "lemma toLeq(Advanced)(R)"]

[LeqNeqLess(R) $\stackrel{\text{pyk}}{\to}$ "lemma leqNeqLess(R)"]

[SubLeqLeft(R) $\stackrel{\text{pyk}}{\to}$ "lemma subLeqLeft(R)"]

[LeqLessTransitivity(R) $\stackrel{\text{pyk}}{\to}$ "lemma leqLessTransitivity(R)"]

[NegativeToLeft(Eq)(R) $\stackrel{\text{pyk}}{\to}$ "lemma negativeToLeft(Eq)(R)"]

[NegativeToRight(Less)(R) $\stackrel{\text{pyk}}{\to}$ "lemma negativeToRight(Less)(R)"]

[!! == Symmetry $\stackrel{\text{pyk}}{\to}$ "lemma !!==Symmetry"]

[NegativeToRight(Eq)(R) $\stackrel{\text{pyk}}{\to}$ "lemma negativeToRight(Eq)(R)"]

[NegativeToRight(Eq)(1term)(R) $\stackrel{\text{pyk}}{\to}$ "lemma negativeToRight(Eq)(1 term)(R)"]

[DoubleMinus(R) $\stackrel{\text{pyk}}{\to}$ "lemma doubleMinus(R)"]

[UniqueNegative(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma uniqueNegative(R)”]

[SubtractEquationsLeft(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma subtractEquationsLeft(R)”]

[EqNegated(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma eqNegated(R)”]

[NeqNegated(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma neqNegated(R)”]

[LeqNegated(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqNegated(R)”]

[LessNegated(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma lessNegated(R)”]

[$-0 = 0$(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma -0=0(R)”]

[NegativeNegated(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma negativeNegated(R)”]

[FromLeqGeq(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma from leqGeq(R)”]

[SubLeqRight(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma subLeqRight(R)”]

[FromLess(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromLess(R)”]

[NonnegativeNumerical(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma nonnegativeNumerical(R)”]

[NegativeNumerical(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma negativeNumerical(R)”]

[$0 <= |x|$(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma 0<=|x|(R)”]

[PositiveNegated(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma positiveNegated(R)”]

[AddEquations(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma addEquations(R)”]

[DistributionOut(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma distributionOut(R)”]

[== Transitivity5 $\stackrel{\text{pyk}}{\rightarrow}$ “lemma ==Transitivity5”]

[$x * 0 + x = x$(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma x∗0+x=x(R)”]

[$x * 0 = 0$(R)(fff) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma x∗0=0(R)fff”]

[Times(-1)(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma times(-1)(R)”]

[Times(-1)Left(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma times(-1)Left(R)”]

[$-x - y = -(x + y)$(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma -x-y=-(x+y)(R)”]

[LessTotality(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma lessTotality(R)”]

[PositiveNumerical(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma positiveNumerical(R)”]

[SignNumerical(+)(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma signNumerical(+)(R)”]

[SameNumerical(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma sameNumerical(R)”]

[MinusNegated(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma minusNegated(R)”]

[SignNumerical(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma signNumerical(R)”]

[NumericalDifference(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma numericalDifference(R)”]

[$x <= |x|$(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma x<=|x|(R)”]

[USlimitIsUpperBound(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma USlimitIsUpperBound helper”]

[USlimitIsUpperBound $\stackrel{\text{pyk}}{\rightarrow}$ “lemma USlimitIsUpperBound”]

[$(-1) * (-1) + (-1) * 1 = 0$(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma (-1)∗(-1)+(-1)∗1=0(R)”]

[$(-1) * (-1) = 1$(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma (-1)∗(-1)=1(R)”]

[$0 < 1$Helper(R) $\overset{\text{pyk}}{\to}$ “lemma 0<1Helper(R)”]

[$0 < 1$(R) $\overset{\text{pyk}}{\to}$ “lemma 0<1(R)”]

[ExpZero(Exact)(R) $\overset{\text{pyk}}{\to}$ “lemma expZero exact(R)”]

[PositiveBase(R)(Base) $\overset{\text{pyk}}{\to}$ “lemma positiveBase(R) base”]

[Three2twoFactors(R) $\overset{\text{pyk}}{\to}$ “lemma three2twoFactors(R)”]

[$x = x * y * (1/y)$(R) $\overset{\text{pyk}}{\to}$ “lemma x=x*y*(1/y)(R)”]

[NeqMultiplication(R) $\overset{\text{pyk}}{\to}$ “lemma neqMultiplication(R)”]

[LessTransitivity(R) $\overset{\text{pyk}}{\to}$ “lemma lessTransitivity(R)”]

[$0 < 2$(R) $\overset{\text{pyk}}{\to}$ “lemma 0<2(R)”]

[SameExp(R)(Base) $\overset{\text{pyk}}{\to}$ “lemma sameExp(R) base”]

[SameExp(R)(Indu) $\overset{\text{pyk}}{\to}$ “lemma sameExp(R) indu”]

[SameExp(R) $\overset{\text{pyk}}{\to}$ “lemma sameExp(R)”]

[SubNeqLeft(R) $\overset{\text{pyk}}{\to}$ “lemma subNeqLeft(R)”]

[SubNeqRight(R) $\overset{\text{pyk}}{\to}$ “lemma subNeqRight(R)”]

[NonzeroFactors(R) $\overset{\text{pyk}}{\to}$ “lemma nonzeroFactors(R)”]

[NonnegativeFactors(R) $\overset{\text{pyk}}{\to}$ “lemma nonnegativeFactors(R)”]

[PositiveFactors(R) $\overset{\text{pyk}}{\to}$ “lemma positiveFactors(R)”]

[LessDivision(R) $\overset{\text{pyk}}{\to}$ “lemma lessDivision(R)”]

[$0 < 1/2$(R) $\overset{\text{pyk}}{\to}$ “lemma 0<1/2(R)”]

[PositiveToRight(Eq)(1term)(R) $\overset{\text{pyk}}{\to}$ “lemma positiveToRight(Eq)(1 term)(R)”]

[Exp(+1)(R) $\overset{\text{pyk}}{\to}$ “lemma exp(+1)(R)”]

[PositiveBase(R)(Indu) $\overset{\text{pyk}}{\to}$ “lemma positiveBase(R) indu”]

[PositiveBase(R) $\overset{\text{pyk}}{\to}$ “lemma positiveBase(R)”]

[$-x * y = -(x * y)$(R) $\overset{\text{pyk}}{\to}$ “lemma -x*y=-(x*y)(R)”]

[PositiveToLeft(Eq)(R) $\overset{\text{pyk}}{\to}$ “lemma positiveToLeft(Eq)(R)”]

[Times1Left(R) $\overset{\text{pyk}}{\to}$ “lemma times1Left(R)”]

[== Transitivity6 $\overset{\text{pyk}}{\to}$ “lemma ==Transitivity6”]

[$x + x = 2 * x$(R) $\overset{\text{pyk}}{\to}$ “lemma x+x=2*x(R)”]

[$(1/2)x + (1/2)x = x$(R) $\overset{\text{pyk}}{\to}$ “lemma (1/2)x+(1/2)x=x(R)”]

[DistributionOut(Minus)(R) $\overset{\text{pyk}}{\to}$ “lemma distributionOut(Minus)(R)”]

[$(1/2)(x + y) - x = (1/2)(y - x)$(R) $\overset{\text{pyk}}{\to}$ “lemma (1/2)(x+y)-x=(1/2)(y-x)(R)”]

[IntervalSize(R)(Base) $\overset{\text{pyk}}{\to}$ “lemma intervalSize(R) base”]

[LessMultiplicationLeft(R) $\overset{\text{pyk}}{\to}$ “lemma lessMultiplicationLeft(R)”]

[NegativeToLeft(Less)(R) $\overset{\text{pyk}}{\to}$ “lemma negativeToLeft(Less)(R)”]

[NegativeToLeft(Less)(1term)(R) $\overset{\text{pyk}}{\to}$ “lemma negativeToLeft(Less)(1 term)(R)”]

[y − (1/2)(x + y) = (1/2)(y − x)(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma y-(1/2)(x+y)=(1/2)(y-x)(R)”]

[IntervalSize(R)(Indu) $\overset{\text{pyk}}{\rightarrow}$ “lemma intervalSize(R) indu”]

[IntervalSize(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma intervalSize(R)”]

[XSlessUS(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma XSlessUS(R)”]

[USdecreasing(+1)(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma USdecreasing(+1)(R)”]

[ExpUnbounded(Base) $\overset{\text{pyk}}{\rightarrow}$ “lemma expUnbounded base”]

[ExpUnbounded(Indu) $\overset{\text{pyk}}{\rightarrow}$ “lemma expUnbounded indu”]

[ExpUnbounded $\overset{\text{pyk}}{\rightarrow}$ “lemma expUnbounded”]

[1 <= x + 1(N) $\overset{\text{pyk}}{\rightarrow}$ “lemma 1<=x+1(N)”]

[NonzeroProduct(2)(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma nonzeroProduct(2)(R)”]

[PositiveNonzero(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma positiveNonzero(R)”]

[NonreciprocalToRight(Eq)(1term)(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma nonreciprocalToRight(Eq)(1 term)(R)”]

[ExpNonzero(Base) $\overset{\text{pyk}}{\rightarrow}$ “lemma expNonzero base”]

[ExpNonzero(Indu) $\overset{\text{pyk}}{\rightarrow}$ “lemma expNonzero indu”]

[ExpNonzero $\overset{\text{pyk}}{\rightarrow}$ “lemma expNonzero”]

[ExpNonzero(2) $\overset{\text{pyk}}{\rightarrow}$ “lemma expNonzero(2)”]

[MultiplyEquations(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma multiplyEquations(R)”]

[HalfBase(Base) $\overset{\text{pyk}}{\rightarrow}$ “lemma halfBase base”]

[HalfBase(Indu) $\overset{\text{pyk}}{\rightarrow}$ “lemma halfBase indu”]

[HalfBase $\overset{\text{pyk}}{\rightarrow}$ “lemma halfBase”]

[Three2threeFactors(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma three2threeFactors(R)”]

[x ∗ y = zBackwards(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma x∗y=zBackwards(R)”]

[PositiveInverted(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma positiveInverted(R)”]

[ReciprocalToRight(Less)(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma reciprocalToRight(Less)(R)”]

[ReciprocalToRight(Less)(1term)(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma reciprocalToRight(Less)(1 term)(R)”]

[NonreciprocalToLeft(Less)(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma nonreciprocalToLeft(Less)(R)”]

[1 < x ∗ y(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma 1<x∗y(R)”]

[SwitchFactors(1/x < y)(R) $\overset{\text{pyk}}{\rightarrow}$ “lemma switchFactors(1/x<y)(R)”]

[SmallHalving $\overset{\text{pyk}}{\rightarrow}$ “lemma smallHalving”]

[IntervalSize(anyPositive) $\overset{\text{pyk}}{\rightarrow}$ “lemma intervalSize(anyPositive)”]

[USdecreasing(+n)(Base) $\overset{\text{pyk}}{\rightarrow}$ “lemma USdecreasing(+n) base”]

[USdecreasing(+n)(Indu) $\overset{\text{pyk}}{\rightarrow}$ “lemma USdecreasing(+n) indu”]

[USdecreasing(+n) $\overset{\text{pyk}}{\rightarrow}$ “lemma USdecreasing(+n)”]

[USdecreasing $\stackrel{\text{pyk}}{\rightarrow}$ “lemma USdecreasing”]

[LeqAdditionLeft(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqAdditionLeft(R)”]

[ToNotLess(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma toNotLess(R)”]

[LimitOfUSIsLeq $\stackrel{\text{pyk}}{\rightarrow}$ “lemma limitOfUSIsLeq”]

[SubtractEquations(Less)(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma subtractEquations(Less)(R)”]

[SubtractEquationsLeft(Less)(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma subtractEquationsLeft(Less)(R)”]

[LessNegated(Negative)(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma lessNegated(Negative)(R)”]

[FromNegatedAnd(Imply) $\stackrel{\text{pyk}}{\rightarrow}$ “prop lemma from negated and (imply)”]

[RemoveDoubleNeg(Consequent) $\stackrel{\text{pyk}}{\rightarrow}$ “prop lemma remove double neg (consequent)”]

[FromNotUpperBound $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNotUpperBound”]

[DistributionOut $\stackrel{\text{pyk}}{\rightarrow}$ “lemma distributionOut”]

[DistributionOutLeft $\stackrel{\text{pyk}}{\rightarrow}$ “lemma distributionOutLeft”]

[DistributionLeft $\stackrel{\text{pyk}}{\rightarrow}$ “lemma distributionLeft”]

[LeqNUB $\stackrel{\text{pyk}}{\rightarrow}$ “lemma leqNUB”]

[USlimitIsLeastUpperBound(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma USlimitIsLeastUpperBound helper”]

[USlimitIsLeastUpperBound $\stackrel{\text{pyk}}{\rightarrow}$ “lemma USlimitIsLeastUpperBound”]

[FromNotLess(R) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromNotLess(R)”]

[ExistMP3 $\stackrel{\text{pyk}}{\rightarrow}$ “pred lemma exist mp3”]

[GreaterPositive(N) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma greaterPositive(N)”]

[ysFClose(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma ysFClose helper”]

[ysFClose $\stackrel{\text{pyk}}{\rightarrow}$ “lemma ysFClose”]

[ysFCauchy(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma ysFCauchy helper”]

[ysFCauchy $\stackrel{\text{pyk}}{\rightarrow}$ “lemma ysFCauchy”]

[CartProdIsRelation $\stackrel{\text{pyk}}{\rightarrow}$ “lemma cartProdIsRelation”]

[FromSubset $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromSubset”]

[SubsetIsRelation $\stackrel{\text{pyk}}{\rightarrow}$ “lemma subsetIsRelation”]

[ToSeries $\stackrel{\text{pyk}}{\rightarrow}$ “lemma toSeries”]

[FromSeries $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromSeries”]

[SeriesSubsetCP $\stackrel{\text{pyk}}{\rightarrow}$ “lemma seriesSubsetCP”]

[ValueType $\stackrel{\text{pyk}}{\rightarrow}$ “lemma valueType”]

[RemoveOr $\stackrel{\text{pyk}}{\rightarrow}$ “prop lemma remove or”]

[FromSingleton $\stackrel{\text{pyk}}{\rightarrow}$ “lemma fromSingleton”]

[InPair(1) $\stackrel{\text{pyk}}{\rightarrow}$ “lemma inPair(1)”]

[InPair(2) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma inPair(2)"]

[SameMember(2) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma sameMember(2)"]

[ToBinaryUnion(1) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma toBinaryUnion(1)"]

[ToBinaryUnion(2) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma toBinaryUnion(2)"]

[FromOrderedPair(TwoLevels) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma fromOrderedPair(twoLevels)"]

[ToCartProd(Helper) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma toCartProd helper"]

[ToCartProd $\stackrel{\text{pyk}}{\rightarrow}$ "lemma toCartProd"]

[NonreciprocalToRight(Eq) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma nonreciprocalToRight(Eq)"]

[NonreciprocalToLeft(Eq)(1term) $\stackrel{\text{pyk}}{\rightarrow}$ "lemma nonreciprocalToLeft(Eq)(1 term)"]

[SameReciprocal $\stackrel{\text{pyk}}{\rightarrow}$ "lemma sameReciprocal"]

[CPseparationIsRelation $\stackrel{\text{pyk}}{\rightarrow}$ "lemma CPseparationIsRelation"]

[OrderedPairEquality $\stackrel{\text{pyk}}{\rightarrow}$ "lemma orderedPairEquality"]

[ReciprocalIsFunction $\stackrel{\text{pyk}}{\rightarrow}$ "lemma reciprocalIsFunction"]

[ReciprocalIsTotal $\stackrel{\text{pyk}}{\rightarrow}$ "lemma reciprocalIsTotal"]

[ReciprocalIsRationalSeries $\stackrel{\text{pyk}}{\rightarrow}$ "lemma reciprocalIsRationalSeries"]

[CrsIsRelation $\stackrel{\text{pyk}}{\rightarrow}$ "lemma crsIsRelation"]

[CrsIsFunction $\stackrel{\text{pyk}}{\rightarrow}$ "lemma crsIsFunction"]

[CrsIsTotal $\stackrel{\text{pyk}}{\rightarrow}$ "lemma crsIsTotal"]

[CrsIsSeries $\stackrel{\text{pyk}}{\rightarrow}$ "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 $\stackrel{\text{pyk}}{\to}$ “lemma inSeries helper”]

[InSeries $\stackrel{\text{pyk}}{\to}$ “lemma inSeries”]

[To = f(Subset)(Helper) $\stackrel{\text{pyk}}{\to}$ “lemma to=f subset helper”]

[To = f(Subset) $\stackrel{\text{pyk}}{\to}$ “lemma to=f subset”]

[To = f $\stackrel{\text{pyk}}{\to}$ “lemma to=f”]

[productIsFunction $\stackrel{\text{pyk}}{\to}$ “lemma productIsFunction”]

[productIsTotal $\stackrel{\text{pyk}}{\to}$ “lemma productIsTotal”]

[ProductIsRationalSeries $\stackrel{\text{pyk}}{\to}$ “lemma productIsRationalSeries”]

[TimesF $\stackrel{\text{pyk}}{\to}$ “lemma timesF”]

[$-\mathrm{x} + (1/2)\mathrm{x} = -(1/2)\mathrm{x}$ $\stackrel{\text{pyk}}{\to}$ “lemma -x+(1/2)x=-(1/2)x”]

[PositiveTripled $\stackrel{\text{pyk}}{\to}$ “lemma positiveTripled”]

[PositiveDividedBy3 $\stackrel{\text{pyk}}{\to}$ “lemma positiveDividedBy3”]

[$|\mathrm{x} - \mathrm{x}| = 0$ $\stackrel{\text{pyk}}{\to}$ “lemma |x-x|=0”]

[$1 < 2$ $\stackrel{\text{pyk}}{\to}$ “lemma 1<2”]

[$1/3 < 2/3$ $\stackrel{\text{pyk}}{\to}$ “lemma 1/3<2/3”]

[$(1/3)\mathrm{x} + (1/3)\mathrm{x} = (2/3)\mathrm{x}$ $\stackrel{\text{pyk}}{\to}$ “lemma (1/3)x+(1/3)x=(2/3)x”]

[$(2/3)\mathrm{x} + (1/3)\mathrm{x} = \mathrm{x}$ $\stackrel{\text{pyk}}{\to}$ “lemma (2/3)x+(1/3)x=x”]

[$-\mathrm{x} + (2/3)\mathrm{x} = -(1/3)\mathrm{x}$ $\stackrel{\text{pyk}}{\to}$ “lemma -x+(2/3)x=-(1/3)x”]

[$-(1/3)\mathrm{x} - (1/3)\mathrm{x} = -(2/3)\mathrm{x}$ $\stackrel{\text{pyk}}{\to}$ “lemma -(1/3)x-(1/3)x=-(2/3)x”]

[$-\mathrm{x} + (1/3)\mathrm{x} = -(2/3)\mathrm{x}$ $\stackrel{\text{pyk}}{\to}$ “lemma -x+(1/3)x=-(2/3)x”]

[PreserveLessGreater $\stackrel{\text{pyk}}{\to}$ “lemma preserveLessGreater”]

[ClosetolessIsLess $\stackrel{\text{pyk}}{\to}$ “lemma closetolessIsLess”]

[SubLessLeft(F) $\stackrel{\text{pyk}}{\to}$ “lemma subLessLeft(F)”]

[SubLessLeft(R) $\stackrel{\text{pyk}}{\to}$ “lemma subLessLeft(R)”]

[ClosetogreaterIsGreater $\stackrel{\text{pyk}}{\to}$ “lemma closetogreaterIsGreater”]

[SubLessRight(F) $\stackrel{\text{pyk}}{\to}$ “lemma subLessRight(F)”]

[SubLessRight(R) $\stackrel{\text{pyk}}{\to}$ “lemma subLessRight(R)”]

[Tester1 $\stackrel{\text{pyk}}{\to}$ “tester1”]

[Tester2 $\stackrel{\text{pyk}}{\to}$ “tester2”]

[Tester3 $\stackrel{\text{pyk}}{\to}$ “tester3”]

[Tester4 $\stackrel{\text{pyk}}{\to}$ “tester4”]

[Tester5 $\stackrel{\text{pyk}}{\to}$ “tester5”]

[Tester6 $\stackrel{\text{pyk}}{\to}$ “tester6”]

[sup $\stackrel{\text{pyk}}{\to}$ “sup”]

[sup $\stackrel{\text{tex}}{\to}$ “sup”]

[x(exp)y $\stackrel{\text{tex}}{\to}$ “(#1.
(expARGH!) #2.
)”]

[To!! ==$\stackrel{\text{tex}}{\to}$ “To!!==”]

[ToNegatedDoubleImply $\stackrel{\text{tex}}{\to}$ “ToNegatedDoubleImply”]

[AddNegatedAll $\stackrel{\text{tex}}{\to}$ “AddNegatedAll”]

[(A)to(E)(Imply) $\stackrel{\text{tex}}{\to}$ “(A)to(˜E˜)(Imply)”]

[(E)to(A)(Imply) $\stackrel{\text{tex}}{\to}$ “(E)to(˜A˜)(Imply)”]

[(E)to(A)(Imply) $\stackrel{\text{tex}}{\to}$ “(E˜)to(˜A)(Imply)”]

[ToNegatedAEA $\stackrel{\text{tex}}{\to}$ “ToNegatedAEA ”]

[NonreciprocalToRight(Eq)(1term) $\stackrel{\text{tex}}{\to}$ “NonreciprocalToRight(Eq)(1 term)”]

[DistributionOut(Minus) $\stackrel{\text{tex}}{\to}$ “DistributionOut(Minus)”]

[PositiveToRight(Eq)(1term) $\stackrel{\text{tex}}{\to}$ “PositiveToRight(Eq)(1 term)”]

[SameSeries(NumDiff) $\stackrel{\text{tex}}{\to}$ “SameSeries(NumDiff)”]

[PlusAssociativity(4terms) $\stackrel{\text{tex}}{\to}$ “PlusAssociativity(4 terms)”]

[NonzeroProduct(2) $\stackrel{\text{tex}}{\to}$ “NonzeroProduct(2)”]

[SwitchTerms($\mathrm{x} <= \mathrm{y} - \mathrm{z}$) $\stackrel{\text{tex}}{\to}$ “SwitchTerms(x<=y-z)”]

[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)”]

[NegativeToLeft(Less)(1term) $\stackrel{\text{tex}}{\to}$ “NegativeToLeft(Less)(1 term)”]

[$(1/2)(\mathrm{x}+\mathrm{y}) - \mathrm{x} = (1/2)(\mathrm{y}-\mathrm{x})$ $\stackrel{\text{tex}}{\to}$ “(1/2)(x+y)-x=(1/2)(y-x)”]

[$\mathrm{y} - (1/2)(\mathrm{x}+\mathrm{y}) = (1/2)(\mathrm{y}-\mathrm{x})$ $\stackrel{\text{tex}}{\to}$ “y-(1/2)(x+y)=(1/2)(y-x)”]

[(+1)IsPositive(N) $\stackrel{\text{tex}}{\to}$ "(+1)IsPositive(N)"]

[ExpZero(Exact) $\stackrel{\text{tex}}{\to}$ "ExpZero(Exact) "]

[SameExp(Base) $\stackrel{\text{tex}}{\to}$ "SameExp(Base)"]

[SameExp(Indu) $\stackrel{\text{tex}}{\to}$ "SameExp(Indu)"]

[SameExp $\stackrel{\text{tex}}{\to}$ "SameExp"]

[Exp(+1) $\stackrel{\text{tex}}{\to}$ "Exp(+1)"]

[BSzero(Exact) $\stackrel{\text{tex}}{\to}$ "BSzero(Exact)"]

[SameBS(2)(Base) $\stackrel{\text{tex}}{\to}$ "SameBS(2)(Base)"]

[SameBS(2)(Indu) $\stackrel{\text{tex}}{\to}$ "SameBS(2)(Indu)"]

[SameBS(2) $\stackrel{\text{tex}}{\to}$ "SameBS(2)"]

[BS(+1) $\stackrel{\text{tex}}{\to}$ "BS(+1)"]

[BSbound(Exact)(Base) $\stackrel{\text{tex}}{\to}$ "BSbound(Exact)(Base)"]

[BSbound(Exact)(Indu) $\stackrel{\text{tex}}{\to}$ "BSbound(Exact)(Indu)"]

[BSbound(Exact) $\stackrel{\text{tex}}{\to}$ "BSbound(Exact)"]

[BSbound $\stackrel{\text{tex}}{\to}$ "BSbound"]

[UStelescope(Zero)(Exact) $\stackrel{\text{tex}}{\to}$ "UStelescope(Zero)(Exact)"]

[SameTelescope(2)(Base) $\stackrel{\text{tex}}{\to}$ "SameTelescope(2)(Base)"]

[SameTelescope(2)(Indu) $\stackrel{\text{tex}}{\to}$ "SameTelescope(2)(Indu)"]

[SameTelescope(2) $\stackrel{\text{tex}}{\to}$ "SameTelescope(2)"]

[UStelescope(+1) $\stackrel{\text{tex}}{\to}$ "UStelescope(+1)"]

[TelescopeNumerical(Base) $\stackrel{\text{tex}}{\to}$ "TelescopeNumerical(Base)"]

[TelescopeNumerical(Indu) $\stackrel{\text{tex}}{\to}$ "TelescopeNumerical(Indu)"]

[TelescopeNumerical $\stackrel{\text{tex}}{\to}$ "TelescopeNumerical"]

[TelescopeBound(Base) $\stackrel{\text{tex}}{\to}$ "TelescopeBound(Base)"]

[TelescopeBound(Indu) $\stackrel{\text{tex}}{\to}$ "TelescopeBound(Indu)"]

[TelescopeBound $\stackrel{\text{tex}}{\to}$ "TelescopeBound"]

[LessNeq(F)(Helper) $\stackrel{\text{tex}}{\to}$ "LessNeq(F)(Helper)"]

[LessNeq(F) $\stackrel{\text{tex}}{\to}$ "LessNeq(F)"]

[LessNeq(R) $\stackrel{\text{tex}}{\to}$ "LessNeq(R)"]

[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"]

[PositiveBase(Base) $\stackrel{\text{tex}}{\to}$ "PositiveBase(Base)"]

[PositiveBase(Indu) $\stackrel{\text{tex}}{\to}$ "PositiveBase(Indu)"]

[PositiveBase $\stackrel{\text{tex}}{\to}$ "PositiveBase"]

[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"]

[lemma plus0Left $\stackrel{\text{tex}}{\to}$ "plus0Left"]

[lemma times1Left $\stackrel{\text{tex}}{\to}$ "times1Left"]

[lemma 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) $\stackrel{\text{tex}}{\to}$ "PositiveToLeft(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 $\stackrel{\text{tex}}{\to}$ “leqLessTransitivity”]

[LessLeqTransitivity $\stackrel{\text{tex}}{\to}$ “LessLeqTransitivity”]

[LessTransitivity $\stackrel{\text{tex}}{\to}$ “LessTransitivity”]

[LessTotality $\stackrel{\text{tex}}{\to}$ “LessTotality”]

[SubLessRight $\stackrel{\text{tex}}{\to}$ “SubLessRight”]

[SubLessLeft $\stackrel{\text{tex}}{\to}$ “SubLessLeft”]

[SwitchTerms($\mathrm{x} < \mathrm{y} - \mathrm{z}$) $\stackrel{\text{tex}}{\to}$ “SwitchTerms(x<y-z)”]

[SwitchTerms(x − y < z) $\stackrel{\text{tex}}{\to}$ “SwitchTerms(x-y<z)”]

[LessNegated $\stackrel{\text{tex}}{\to}$ “LessNegated”]

[PositiveNonzero $\stackrel{\text{tex}}{\to}$ “PositiveNonzero”]

[PositiveNegated $\stackrel{\text{tex}}{\to}$ “PositiveNegated”]

[NonpositiveNegated $\stackrel{\text{tex}}{\to}$ “NonpositiveNegated”]

[NegativeNegated $\stackrel{\text{tex}}{\to}$ “NegativeNegated”]

[NonnegativeNegated $\stackrel{\text{tex}}{\to}$ “NonnegativeNegated”]

[PositiveInverted $\stackrel{\text{tex}}{\to}$ “PositiveInverted”]

[PositiveHalved $\stackrel{\text{tex}}{\to}$ “PositiveHalved”]

[NonnegativeNumerical $\stackrel{\text{tex}}{\to}$ “NonnegativeNumerical”]

[NegativeNumerical $\stackrel{\text{tex}}{\to}$ “NegativeNumerical”]

[PositiveNumerical $\stackrel{\text{tex}}{\to}$ “PositiveNumerical”]

[|0| = 0 $\stackrel{\text{tex}}{\to}$ “|0|=0”]

[0 <= |x| $\stackrel{\text{tex}}{\to}$ “0<=|x|”]

[x <= |x| $\stackrel{\text{tex}}{\to}$ “x<=|x|”]

[FromPositiveNumerical $\stackrel{\text{tex}}{\to}$ “FromPositiveNumerical”]

[SameNumerical $\stackrel{\text{tex}}{\to}$ “SameNumerical”]

[SignNumerical(+) $\stackrel{\text{tex}}{\to}$ “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(++) $\overset{\text{tex}}{\to}$ "splitNumericalSum(++)"]

[splitNumericalSum(−−) $\overset{\text{tex}}{\to}$ "splitNumericalSum(--)"]

[splitNumericalSum(+ − small) $\overset{\text{tex}}{\to}$ "splitNumericalSum(+-small)"]

[splitNumericalSum(+ − big) $\overset{\text{tex}}{\to}$ "splitNumericalSum(+-big)"]

[splitNumericalSum(+−) $\overset{\text{tex}}{\to}$ "splitNumericalSum(+-)"]

[splitNumericalSum(−+) $\overset{\text{tex}}{\to}$ "splitNumericalSum(-+)"]

[splitNumericalSum $\overset{\text{tex}}{\to}$ "splitNumericalSum"]

[SplitNumericalProduct(++) $\overset{\text{tex}}{\to}$ "SplitNumericalProduct(++)"]

[SplitNumericalProduct(+−) $\overset{\text{tex}}{\to}$ "SplitNumericalProduct(+-)"]

[SplitNumericalProduct $\overset{\text{tex}}{\to}$ "SplitNumericalProduct"]

[insertMiddleTerm(Numerical) $\overset{\text{tex}}{\to}$ "insertMiddleTerm(Numerical)"]

[insertTwoMiddleTerms(Numerical) $\overset{\text{tex}}{\to}$ "insertTwoMiddleTerms(Numerical)"]

[MaxLeq(1) $\overset{\text{tex}}{\to}$ "MaxLeq(1)"]

[MaxLeq(2) $\overset{\text{tex}}{\to}$ "MaxLeq(2)"]

[LessThanMax $\overset{\text{tex}}{\to}$ "LessThanMax"]

[$\mathrm{x} + \mathrm{y} = \mathrm{zBackwards}$ $\overset{\text{tex}}{\to}$ "x+y=zBackwards"]

[$\mathrm{x} * \mathrm{y} = \mathrm{zBackwards}$ $\overset{\text{tex}}{\to}$ "x*y=zBackwards"]

[$\mathrm{x} = \mathrm{x} + (\mathrm{y} - \mathrm{y})$ $\overset{\text{tex}}{\to}$ "x=x+(y-y)"]

[$\mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y}$ $\overset{\text{tex}}{\to}$ "x=x+y-y"]

[$\mathrm{x} = \mathrm{x} * \mathrm{y} * (1/\mathrm{y})$ $\overset{\text{tex}}{\to}$ "x=x*y*(1/y)"]

[insertMiddleTerm(Sum) $\overset{\text{tex}}{\to}$ "insertMiddleTerm(Sum)"]

[insertTwoMiddleTerms(Sum) $\overset{\text{tex}}{\to}$ "insertTwoMiddleTerms(Sum)"]

[insertMiddleTerm(Difference) $\overset{\text{tex}}{\to}$ "insertMiddleTerm(Difference)"]

[$\mathrm{x} * 0 + \mathrm{x} = \mathrm{x}$ $\overset{\text{tex}}{\to}$ "x*0+x=x"]

[NonnegativeFactors $\overset{\text{tex}}{\to}$ "NonnegativeFactors"]

$[\mathrm{NonzeroFactors} \stackrel{\mathrm{tex}}{\rightarrow} \text{“NonzeroFactors”}]$

$[\mathrm{PositiveFactors} \stackrel{\mathrm{tex}}{\rightarrow} \text{“PositiveFactors”}]$

$[\mathrm{PlusTimesMinus} \stackrel{\mathrm{tex}}{\rightarrow} \text{“PlusTimesMinus”}]$

$[\mathrm{MinusTimesMinus} \stackrel{\mathrm{tex}}{\rightarrow} \text{“MinusTimesMinus”}]$

$[\mathrm{x} * 0 = 0 \stackrel{\mathrm{tex}}{\rightarrow} \text{“x}{*}\text{0=0”}]$

$[(-1) * (-1) + (-1) * 1 = 0 \stackrel{\mathrm{tex}}{\rightarrow} \text{“(-1)}{*}\text{(-1)+(-1)}{*}\text{1=0”}]$

$[(-1) * (-1) = 1 \stackrel{\mathrm{tex}}{\rightarrow} \text{“(-1)}{*}\text{(-1)=1”}]$

$[0 < 1\mathrm{Helper} \stackrel{\mathrm{tex}}{\rightarrow} \text{“0<1Helper”}]$

$[0 < 1 \stackrel{\mathrm{tex}}{\rightarrow} \text{“0<1”}]$

$[0 < 2 \stackrel{\mathrm{tex}}{\rightarrow} \text{“0<2”}]$

$[0 < 3 \stackrel{\mathrm{tex}}{\rightarrow} \text{“0<3”}]$

$[0 < 1/2 \stackrel{\mathrm{tex}}{\rightarrow} \text{“0<1/2”}]$

$[0 < 1/3 \stackrel{\mathrm{tex}}{\rightarrow} \text{“0<1/3”}]$

$[\mathrm{TwoWholes} \stackrel{\mathrm{tex}}{\rightarrow} \text{“TwoWholes”}]$

$[\mathrm{ThreeWholes} \stackrel{\mathrm{tex}}{\rightarrow} \text{“ThreeWholes”}]$

$[\mathrm{TwoHalves} \stackrel{\mathrm{tex}}{\rightarrow} \text{“TwoHalves”}]$

$[\mathrm{ThreeThirds} \stackrel{\mathrm{tex}}{\rightarrow} \text{“ThreeThirds”}]$

$[-\mathrm{x} - \mathrm{y} = -(\mathrm{x} + \mathrm{y}) \stackrel{\mathrm{tex}}{\rightarrow} \text{“-x-y=-(x+y)”}]$

$[-\mathrm{x} * \mathrm{y} = -(\mathrm{x} * \mathrm{y}) \stackrel{\mathrm{tex}}{\rightarrow} \text{“-x}{*}\text{y=-(x}{*}\text{y)”}]$

$[\mathrm{MinusNegated} \stackrel{\mathrm{tex}}{\rightarrow} \text{“MinusNegated”}]$

$[\mathrm{Times}(-1) \stackrel{\mathrm{tex}}{\rightarrow} \text{“Times(-1)”}]$

$[\mathrm{Times}(-1)\mathrm{Left} \stackrel{\mathrm{tex}}{\rightarrow} \text{“Times(-1)Left”}]$

$[-0 = 0 \stackrel{\mathrm{tex}}{\rightarrow} \text{“-0=0”}]$

$[\mathrm{AllNegated}(\mathrm{Imply}) \stackrel{\mathrm{tex}}{\rightarrow} \text{“AllNegated(Imply)”}]$

$[\mathrm{ExistNegated}(\mathrm{Imply}) \stackrel{\mathrm{tex}}{\rightarrow} \text{“ExistNegated(Imply)”}]$

[IntroExist(Helper) $\stackrel{\text{tex}}{\to}$ “IntroExist(Helper)”]

[IntroExist $\stackrel{\text{tex}}{\to}$ “IntroExist”]

[ExistMP $\stackrel{\text{tex}}{\to}$ “ExistMP”]

[ExistMP2 $\stackrel{\text{tex}}{\to}$ “ExistMP2”]

[TwiceExistMP $\stackrel{\text{tex}}{\to}$ “TwiceExistMP”]

[TwiceExistMP2 $\stackrel{\text{tex}}{\to}$ “TwiceExistMP2”]

[$\mathrm{EAE} - \mathrm{MP}$ $\stackrel{\text{tex}}{\to}$ “EAE-MP”]

[AddAll $\stackrel{\text{tex}}{\to}$ “AddAll ”]

[AddExist(Helper1) $\stackrel{\text{tex}}{\to}$ “AddExist(Helper1)”]

[AddExist(Helper2) $\stackrel{\text{tex}}{\to}$ “AddExist(Helper2)”]

[AddExist $\stackrel{\text{tex}}{\to}$ “AddExist”]

[AddExist(SimpleAnt) $\stackrel{\text{tex}}{\to}$ “AddExist(SimpleAnt)”]

[AddExist(Simple) $\stackrel{\text{tex}}{\to}$ “AddExist(Simple)”]

[AddEAE $\stackrel{\text{tex}}{\to}$ “AddEAE”]

[$\mathrm{AEA} - \mathrm{negated}$ $\stackrel{\text{tex}}{\to}$ “AEA-negated”]

[$\mathrm{EEA} - \mathrm{negated}$ $\stackrel{\text{tex}}{\to}$ “EEA-negated”]

[ToNegatedAnd $\stackrel{\text{tex}}{\to}$ “ToNegatedAnd”]

[PositiveToRight(Less)(1term) $\stackrel{\text{tex}}{\to}$ “PositiveToRight(Less)(1 term)”]

[(A)to(E) $\stackrel{\text{tex}}{\to}$ “(A˜)to(˜E)”]

[eqTransitivity4 $\stackrel{\text{tex}}{\to}$ “eqTransitivity4”]

[Plus0Left(R) $\stackrel{\text{tex}}{\to}$ “Plus0Left(R)”]

[$\mathrm{x} = \mathrm{x} + (\mathrm{y} - \mathrm{y})(\mathrm{R})$ $\stackrel{\text{tex}}{\to}$ “x=x+(y-y)(R)”]

[$\mathrm{x} = \mathrm{x} + \mathrm{y} - \mathrm{y}(\mathrm{R})$ $\stackrel{\text{tex}}{\to}$ “x=x+y-y(R)”]

[PositiveToRight(Eq)(R) $\stackrel{\text{tex}}{\to}$ “PositiveToRight(Eq)(R)”]

[SubtractEquations(R) $\stackrel{\text{tex}}{\to}$ “SubtractEquations(R)”]

[NeqAddition(R) $\stackrel{\text{tex}}{\rightarrow}$ "NeqAddition(R)"]

[EqAdditionLeft(R) $\stackrel{\text{tex}}{\rightarrow}$ "EqAdditionLeft(R)"]

[Three2twoTerms(R) $\stackrel{\text{tex}}{\rightarrow}$ "Three2twoTerms(R)"]

[PositiveToRight(Less)(R) $\stackrel{\text{tex}}{\rightarrow}$ "PositiveToRight(Less)(R)"]

[Three2threeTerms(R) $\stackrel{\text{tex}}{\rightarrow}$ "Three2threeTerms(R)"]

[PositiveToRight(Less)(1term)(R) $\stackrel{\text{tex}}{\rightarrow}$ "PositiveToRight(Less)(1 term)(R)"]

[ToLeq(Advanced)(R) $\stackrel{\text{tex}}{\rightarrow}$ "ToLeq(Advanced)(R)"]

[LeqNeqLess(R) $\stackrel{\text{tex}}{\rightarrow}$ "LeqNeqLess(R)"]

[SubLeqLeft(R) $\stackrel{\text{tex}}{\rightarrow}$ "SubLeqLeft(R)"]

[LeqLessTransitivity(R) $\stackrel{\text{tex}}{\rightarrow}$ "LeqLessTransitivity(R)"]

[NegativeToLeft(Eq)(R) $\stackrel{\text{tex}}{\rightarrow}$ "NegativeToLeft(Eq)(R)"]

[NegativeToRight(Less)(R) $\stackrel{\text{tex}}{\rightarrow}$ "NegativeToRight(Less)(R)"]

[!! == Symmetry $\stackrel{\text{tex}}{\rightarrow}$ "!!==Symmetry"]

[NegativeToRight(Eq)(R) $\stackrel{\text{tex}}{\rightarrow}$ "NegativeToRight(Eq)(R)"]

[NegativeToRight(Eq)(1term)(R) $\stackrel{\text{tex}}{\rightarrow}$ "NegativeToRight(Eq)(1 term)(R)"]

[SubLeqRight(R) $\stackrel{\text{tex}}{\rightarrow}$ "SubLeqRight(R)"]

[DoubleMinus(R) $\stackrel{\text{tex}}{\rightarrow}$ "DoubleMinus(R)"]

[UniqueNegative(R) $\stackrel{\text{tex}}{\rightarrow}$ "UniqueNegative(R)"]

[SubtractEquationsLeft(R) $\stackrel{\text{tex}}{\rightarrow}$ "SubtractEquationsLeft(R)"]

[EqNegated(R) $\stackrel{\text{tex}}{\rightarrow}$ "EqNegated(R)"]

[NeqNegated(R) $\stackrel{\text{tex}}{\rightarrow}$ "NeqNegated(R)"]

[LeqNegated(R) $\stackrel{\text{tex}}{\rightarrow}$ "LeqNegated(R)"]

[LessNegated(R) $\stackrel{\text{tex}}{\rightarrow}$ "LessNegated(R)"]

[$-0 = 0$(R) $\stackrel{\text{tex}}{\rightarrow}$ "-0=0(R)"]

[NegativeNegated(R) $\stackrel{\text{tex}}{\rightarrow}$ "NegativeNegated(R)"]

[FromLeqGeq(R) $\stackrel{\text{tex}}{\rightarrow}$ “FromLeqGeq(R)”]

[FromLess(R) $\stackrel{\text{tex}}{\rightarrow}$ “FromLess(R)”]

[NonnegativeNumerical(R) $\stackrel{\text{tex}}{\rightarrow}$ “NonnegativeNumerical(R)”]

[NegativeNumerical(R) $\stackrel{\text{tex}}{\rightarrow}$ “NegativeNumerical(R)”]

[0 <= |x|(R) $\stackrel{\text{tex}}{\rightarrow}$ “0<=|x|(R)”]

[PositiveNegated(R) $\stackrel{\text{tex}}{\rightarrow}$ “PositiveNegated(R)”]

[AddEquations(R) $\stackrel{\text{tex}}{\rightarrow}$ “AddEquations(R)”]

[DistributionOut(R) $\stackrel{\text{tex}}{\rightarrow}$ “DistributionOut(R)”]

[== Transitivity5 $\stackrel{\text{tex}}{\rightarrow}$ “==Transitivity5”]

[$x * 0 = 0$(R)(fff) $\stackrel{\text{tex}}{\rightarrow}$ “x∗0=0(R)(fff)”]

[$x * 0 + x = x$(R) $\stackrel{\text{tex}}{\rightarrow}$ “x∗0+x=x(R)”]

[Times(-1)(R) $\stackrel{\text{tex}}{\rightarrow}$ “Times(-1)(R)”]

[Times(-1)Left(R) $\stackrel{\text{tex}}{\rightarrow}$ “Times(-1)Left(R)”]

[$-x - y = -(x + y)$(R) $\stackrel{\text{tex}}{\rightarrow}$ “-x-y=-(x+y)(R)”]

[LessTotality(R) $\stackrel{\text{tex}}{\rightarrow}$ “LessTotality(R)”]

[SignNumerical(+)(R) $\stackrel{\text{tex}}{\rightarrow}$ “SignNumerical(+)(R)”]

[PositiveNumerical(R) $\stackrel{\text{tex}}{\rightarrow}$ “PositiveNumerical(R)”]

[SameNumerical(R) $\stackrel{\text{tex}}{\rightarrow}$ “SameNumerical(R)”]

[MinusNegated(R) $\stackrel{\text{tex}}{\rightarrow}$ “MinusNegated(R)”]

[SignNumerical(R) $\stackrel{\text{tex}}{\rightarrow}$ “SignNumerical(R)”]

[NumericalDifference(R) $\stackrel{\text{tex}}{\rightarrow}$ “NumericalDifference(R)”]

[USlimitIsUpperBound(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “USlimitIsUpperBound(Helper)”]

[USlimitIsUpperBound $\stackrel{\text{tex}}{\rightarrow}$ “USlimitIsUpperBound”]

[x <= |x|(R) $\stackrel{\text{tex}}{\rightarrow}$ “x<=|x|(R)”]

[$(-1) * (-1) + (-1) * 1 = 0$(R) $\stackrel{\text{tex}}{\rightarrow}$ “(-1)∗(-1)+(-1)∗1=0(R)”]

[$(-1)*(-1)=1(\mathrm{R})$ $\overset{\text{tex}}{\to}$ “(-1)*(-1)=1(R)”]

[$0<1\mathrm{Helper}(\mathrm{R})$ $\overset{\text{tex}}{\to}$ “0<1Helper(R)”]

[$0<1(\mathrm{R})$ $\overset{\text{tex}}{\to}$ “0<1(R)”]

[ExpZero(Exact)(R) $\overset{\text{tex}}{\to}$ “ExpZero(Exact)(R)”]

[PositiveBase(R)(Base) $\overset{\text{tex}}{\to}$ “PositiveBase(R)(Base)”]

[Three2twoFactors(R) $\overset{\text{tex}}{\to}$ “Three2twoFactors(R)”]

[$\mathrm{x}=\mathrm{x}*\mathrm{y}*(1/\mathrm{y})(\mathrm{R})$ $\overset{\text{tex}}{\to}$ “x=x*y*(1/y)(R)”]

[NeqMultiplication(R) $\overset{\text{tex}}{\to}$ “NeqMultiplication(R)”]

[LessTransitivity(R) $\overset{\text{tex}}{\to}$ “LessTransitivity(R)”]

[$0<2(\mathrm{R})$ $\overset{\text{tex}}{\to}$ “0<2(R)”]

[SameExp(R)(Base) $\overset{\text{tex}}{\to}$ “SameExp(R)(Base)”]

[SameExp(R)(Indu) $\overset{\text{tex}}{\to}$ “SameExp(R)(Indu)”]

[SameExp(R) $\overset{\text{tex}}{\to}$ “SameExp(R)”]

[SubNeqLeft(R) $\overset{\text{tex}}{\to}$ “SubNeqLeft(R)”]

[SubNeqRight(R) $\overset{\text{tex}}{\to}$ “SubNeqRight(R)”]

[NonzeroFactors(R) $\overset{\text{tex}}{\to}$ “NonzeroFactors(R)”]

[NonnegativeFactors(R) $\overset{\text{tex}}{\to}$ “NonnegativeFactors(R)”]

[PositiveFactors(R) $\overset{\text{tex}}{\to}$ “PositiveFactors(R)”]

[LessDivision(R) $\overset{\text{tex}}{\to}$ “LessDivision(R)”]

[$0<1/2(\mathrm{R})$ $\overset{\text{tex}}{\to}$ “0<1/2(R)”]

[PositiveToRight(Eq)(1term)(R) $\overset{\text{tex}}{\to}$ “PositiveToRight(Eq)(1 term)(R)”]

[Exp(+1)(R) $\overset{\text{tex}}{\to}$ “Exp(+1)(R)”]

[PositiveBase(R)(Indu) $\overset{\text{tex}}{\to}$ “PositiveBase(R)(Indu)”]

[PositiveBase(R) $\overset{\text{tex}}{\to}$ “PositiveBase(R)”]

[$-\mathrm{x}*\mathrm{y}=-(\mathrm{x}*\mathrm{y})(\mathrm{R})$ $\overset{\text{tex}}{\to}$ “-x*y=-(x*y)(R)”]

[PositiveToLeft(Eq)(R) $\stackrel{\text{tex}}{\to}$ “PositiveToLeft(Eq)(R)”]

[Times1Left(R) $\stackrel{\text{tex}}{\to}$ “Times1Left(R)”]

[== Transitivity6 $\stackrel{\text{tex}}{\to}$ “==Transitivity6”]

[$\mathrm{x} + \mathrm{x} = 2 * \mathrm{x}$(R) $\stackrel{\text{tex}}{\to}$ “x+x=2∗x(R)”]

[$(1/2)\mathrm{x} + (1/2)\mathrm{x} = \mathrm{x}$(R) $\stackrel{\text{tex}}{\to}$ “(1/2)x+(1/2)x=x(R)”]

[DistributionOut(Minus)(R) $\stackrel{\text{tex}}{\to}$ “DistributionOut(Minus)(R)”]

[$(1/2)(\mathrm{x} + \mathrm{y}) - \mathrm{x} = (1/2)(\mathrm{y} - \mathrm{x})$(R) $\stackrel{\text{tex}}{\to}$ “(1/2)(x+y)-x=(1/2)(y-x)(R)”]

[IntervalSize(R)(Base) $\stackrel{\text{tex}}{\to}$ “IntervalSize(R)(Base)”]

[LessMultiplicationLeft(R) $\stackrel{\text{tex}}{\to}$ “LessMultiplicationLeft(R)”]

[NegativeToLeft(Less)(R) $\stackrel{\text{tex}}{\to}$ “NegativeToLeft(Less)(R)”]

[NegativeToLeft(Less)(1term)(R) $\stackrel{\text{tex}}{\to}$ “NegativeToLeft(Less)(1 term)(R)”]

[$\mathrm{y} - (1/2)(\mathrm{x} + \mathrm{y}) = (1/2)(\mathrm{y} - \mathrm{x})$(R) $\stackrel{\text{tex}}{\to}$ “y-(1/2)(x+y)=(1/2)(y-x)(R)”]

[IntervalSize(R)(Indu) $\stackrel{\text{tex}}{\to}$ “IntervalSize(R)(Indu)”]

[IntervalSize(R) $\stackrel{\text{tex}}{\to}$ “IntervalSize(R)”]

[XSlessUS(R) $\stackrel{\text{tex}}{\to}$ “XSlessUS(R)”]

[USdecreasing(+1)(R) $\stackrel{\text{tex}}{\to}$ “USdecreasing(+1)(R)”]

[ExpUnbounded(Base) $\stackrel{\text{tex}}{\to}$ “ExpUnbounded(Base)”]

[ExpUnbounded(Indu) $\stackrel{\text{tex}}{\to}$ “ExpUnbounded(Indu)”]

[ExpUnbounded $\stackrel{\text{tex}}{\to}$ “ExpUnbounded”]

[$1 <= \mathrm{x} + 1$(N) $\stackrel{\text{tex}}{\to}$ “1<=x+1(N)”]

[NonzeroProduct(2)(R) $\stackrel{\text{tex}}{\to}$ “NonzeroProduct(2)(R)”]

[PositiveNonzero(R) $\stackrel{\text{tex}}{\to}$ “PositiveNonzero(R)”]

[NonreciprocalToRight(Eq)(1term)(R) $\stackrel{\text{tex}}{\to}$ “NonreciprocalToRight(Eq)(1 term)(R)”]

[ExpNonzero(Base) $\stackrel{\text{tex}}{\to}$ “ExpNonzero(Base)”]

[ExpNonzero(Indu) $\stackrel{\text{tex}}{\to}$ “ExpNonzero(Indu)”]

[ExpNonzero $\stackrel{\text{tex}}{\to}$ “ExpNonzero”]

[ExpNonzero(2) $\stackrel{\text{tex}}{\to}$ “ExpNonzero(2)”]

[MultiplyEquations(R) $\stackrel{\text{tex}}{\to}$ “MultiplyEquations(R)”]

[HalfBase(Base) $\stackrel{\text{tex}}{\to}$ “HalfBase(Base)”]

[HalfBase(Indu) $\stackrel{\text{tex}}{\to}$ “HalfBase(Indu)”]

[HalfBase $\stackrel{\text{tex}}{\to}$ “HalfBase”]

[Three2threeFactors(R) $\stackrel{\text{tex}}{\to}$ “Three2threeFactors(R)”]

[$x * y = z$Backwards(R) $\stackrel{\text{tex}}{\to}$ “x*y=zBackwards(R)”]

[PositiveInverted(R) $\stackrel{\text{tex}}{\to}$ “PositiveInverted(R)”]

[ReciprocalToRight(Less)(R) $\stackrel{\text{tex}}{\to}$ “ReciprocalToRight(Less)(R)”]

[ReciprocalToRight(Less)(1term)(R) $\stackrel{\text{tex}}{\to}$ “ReciprocalToRight(Less)(1 term)(R)”]

[NonreciprocalToLeft(Less)(R) $\stackrel{\text{tex}}{\to}$ “NonreciprocalToLeft(Less)(R)”]

[$1 < x * y$(R) $\stackrel{\text{tex}}{\to}$ “1<x*y(R)”]

[SwitchFactors($1/x < y$)(R) $\stackrel{\text{tex}}{\to}$ “SwitchFactors(1/x<y)(R)”]

[SmallHalving $\stackrel{\text{tex}}{\to}$ “SmallHalving”]

[IntervalSize(anyPositive) $\stackrel{\text{tex}}{\to}$ “IntervalSize(anyPositive)”]

[USdecreasing(+n)(Base) $\stackrel{\text{tex}}{\to}$ “USdecreasing(+n)(Base)”]

[USdecreasing(+n)(Indu) $\stackrel{\text{tex}}{\to}$ “USdecreasing(+n)(Indu)”]

[USdecreasing(+n) $\stackrel{\text{tex}}{\to}$ “USdecreasing(+n)”]

[USdecreasing $\stackrel{\text{tex}}{\to}$ “USdecreasing”]

[LeqAdditionLeft(R) $\stackrel{\text{tex}}{\to}$ “LeqAdditionLeft(R)”]

[ToNotLess(R) $\stackrel{\text{tex}}{\to}$ “ToNotLess(R)”]

[LimitOfUSIsLeq $\stackrel{\text{tex}}{\to}$ “LimitOfUSIsLeq”]

[SubtractEquations(Less)(R) $\stackrel{\text{tex}}{\to}$ “SubtractEquations(Less)(R)”]

[SubtractEquationsLeft(Less)(R) $\stackrel{\text{tex}}{\to}$ “SubtractEquationsLeft(Less)(R)”]

[LessNegated(Negative)(R) $\stackrel{\text{tex}}{\to}$ “LessNegated(Negative)(R)”]

[FromNegatedAnd(Imply) $\stackrel{\text{tex}}{\to}$ “FromNegatedAnd(Imply)”]

[RemoveDoubleNeg(Consequent) $\stackrel{\text{tex}}{\to}$ “RemoveDoubleNeg(Consequent)”]

[FromNotUpperBound $\stackrel{\text{tex}}{\to}$ “FromNotUpperBound”]

[LeqNUB $\stackrel{\text{tex}}{\to}$ “LeqNUB”]

[USlimitIsLeastUpperBound(Helper) $\stackrel{\text{tex}}{\to}$ “USlimitIsLeastUpperBound(Helper)”]

[USlimitIsLeastUpperBound $\stackrel{\text{tex}}{\to}$ “USlimitIsLeastUpperBound”]

[ExistMP3 $\stackrel{\text{tex}}{\to}$ “ExistMP3”]

[GreaterPositive(N) $\stackrel{\text{tex}}{\to}$ “GreaterPositive(N)”]

[ysFClose(Helper) $\stackrel{\text{tex}}{\to}$ “ysFClose(Helper)”]

[ysFClose $\stackrel{\text{tex}}{\to}$ “ysFClose”]

[ysFCauchy(Helper) $\stackrel{\text{tex}}{\to}$ “ysFCauchy(Helper)”]

[ysFCauchy $\stackrel{\text{tex}}{\to}$ “ysFCauchy”]

[SFsymmetry $\stackrel{\text{tex}}{\to}$ “SFsymmetry”]

[SFtransitivity $\stackrel{\text{tex}}{\to}$ “SFtransitivity”]

[lemma =f to sameF $\stackrel{\text{tex}}{\to}$ “=fToSameF ”]

[lemma plusF(Sym) $\stackrel{\text{tex}}{\to}$ “PlusF(Sym)”]

[lemma timesF(Sym) $\stackrel{\text{tex}}{\to}$ “TimesF(Sym)”]

[f2R(Plus) $\stackrel{\text{tex}}{\to}$ “f2R(Plus)”]

[f2R(Times) $\stackrel{\text{tex}}{\to}$ “f2R(Times)”]

[<< TransitivityHelper(Q) $\stackrel{\text{tex}}{\to}$ “<<TransitivityHelper(Q)”]

[<< Transitivity $\stackrel{\text{tex}}{\to}$ “<<Transitivity”]

[<<== Reflexivity $\stackrel{\text{tex}}{\to}$ “<<==Reflexivity”]

[<<== AntisymmetryHelper(Q) $\stackrel{\text{tex}}{\to}$ “<<==AntisymmetryHelper(Q)”]

[FromNotSameF(Weak)(Helper) $\stackrel{\text{tex}}{\to}$ “FromNotSameF(Weak)(Helper)”]

[FromNotSameF(Weak) $\stackrel{\text{tex}}{\to}$ “FromNotSameF(Weak)”]

[FromNotLess(F) $\stackrel{\text{tex}}{\to}$ “FromNotLess(F)”]

[Plus0(F) $\stackrel{\text{tex}}{\to}$ “Plus0(F)”]

[== Addition $\stackrel{\text{tex}}{\to}$ “==Addition”]

[== AdditionLeft $\stackrel{\text{tex}}{\to}$ “==AdditionLeft”]

[Fpart − Bounded(Base) $\stackrel{\text{tex}}{\to}$ “Fpart-Bounded(Base)”]

[Fpart − Bounded(InduHelper) $\stackrel{\text{tex}}{\to}$ “Fpart-Bounded(InduHelper)”]

[Fpart − Bounded(Indu) $\stackrel{\text{tex}}{\to}$ “Fpart-Bounded(Indu)”]

[Fpart − Bounded $\stackrel{\text{tex}}{\to}$ “Fpart-Bounded”]

[F − Bounded $\stackrel{\text{tex}}{\to}$ “F-Bounded”]

[F − Bounded(Helper) $\stackrel{\text{tex}}{\to}$ “F-Bounded(Helper)”]

[SameFmultiplication(Helper) $\stackrel{\text{tex}}{\to}$ “SameFmultiplication(Helper)”]

[SameFmultiplication $\stackrel{\text{tex}}{\to}$ “SameFmultiplication”]

[FromNot < f(Weak)(Helper) $\stackrel{\text{tex}}{\to}$ “FromNot<f(Weak)(Helper)”]

[FromNot < f(Weak) $\stackrel{\text{tex}}{\to}$ “FromNot<f(Weak)”]

[FromNot < f(Strong)(Helper2) $\stackrel{\text{tex}}{\to}$ “FromNot<f(Strong)(Helper2)”]

[FromNot < f(Strong)(Helper) $\stackrel{\text{tex}}{\to}$ “FromNot<f(Strong)(Helper)”]

[FromNot < f(Strong) $\stackrel{\text{tex}}{\to}$ “FromNot<f(Strong)”]

[fromNotSameF(Strongest)(Helper2) $\stackrel{\text{tex}}{\to}$ “fromNotSameF(Strongest)(Helper2)”]

[fromNotSameF(Strongest)(Helper) $\stackrel{\text{tex}}{\to}$ “fromNotSameF(Strongest)(Helper)”]

[fromNotSameF(Strongest) $\stackrel{\text{tex}}{\to}$ “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)”]

[LeqTotality(R) $\stackrel{\text{tex}}{\rightarrow}$ “LeqTotality(R)”]

[$\mathrm{x} * 0 = 0(\mathrm{F})$ $\stackrel{\text{tex}}{\rightarrow}$ “x∗0=0(F)”]

[$\mathrm{x} * 0 = 0(\mathrm{R})$ $\stackrel{\text{tex}}{\rightarrow}$ “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) $\stackrel{\text{tex}}{\rightarrow}$ “LeqMultiplication(R)”]

[Times1f $\stackrel{\text{tex}}{\rightarrow}$ “Times1f”]

[ReciprocalFnonzero $\stackrel{\text{tex}}{\rightarrow}$ “ReciprocalFnonzero”]

[ReciprocalFnynonzero $\stackrel{\text{tex}}{\rightarrow}$ “ReciprocalFnynonzero”]

[(Eventually $=$ f)2sameF(Helper) $\stackrel{\text{tex}}{\rightarrow}$ “(Eventually=f)2sameF(Helper)”]

[(Eventually $=$ f)2sameF $\stackrel{\text{tex}}{\rightarrow}$ “(Eventually=f)2sameF”]

[FromNotSameF(Strong)(Helper2) $\stackrel{\text{tex}}{\rightarrow}$ “FromNotSameF(Strong)(Helper2)”]

$[\text{FromNotSameF(Strong)(Helper)} \overset{\text{tex}}{\rightarrow} \text{“FromNotSameF(Strong)(Helper)”}]$

$[\text{FromNotSameF(Strong)} \overset{\text{tex}}{\rightarrow} \text{“FromNotSameF(Strong)”}]$

$[\text{SameFreciprocal(Helper)} \overset{\text{tex}}{\rightarrow} \text{“SameFreciprocal(Helper)”}]$

$[\text{SameFreciprocal} \overset{\text{tex}}{\rightarrow} \text{“SameFreciprocal”}]$

$[\text{From!!} == \overset{\text{tex}}{\rightarrow} \text{“From!!==”}]$

$[\text{Reciprocal(R)} \overset{\text{tex}}{\rightarrow} \text{“Reciprocal(R)”}]$

$[\text{TimesCommutativity(F)} \overset{\text{tex}}{\rightarrow} \text{“TimesCommutativity(F)”}]$

$[\text{Distribution(F)} \overset{\text{tex}}{\rightarrow} \text{“Distribution(F)”}]$

$[\text{FromNotLess(R)} \overset{\text{tex}}{\rightarrow} \text{“FromNotLess(R)”}]$

$[\text{ToNegatedAnd(1)} \overset{\text{tex}}{\rightarrow} \text{“ToNegatedAnd(1)”}]$

$[\text{FromMax(1)} \overset{\text{tex}}{\rightarrow} \text{“FromMax(1)”}]$

$[\text{FromMax(2)} \overset{\text{tex}}{\rightarrow} \text{“FromMax(2)”}]$

$[\text{CartProdIsRelation} \overset{\text{tex}}{\rightarrow} \text{“CartProdIsRelation”}]$

$[\text{FromSubset} \overset{\text{tex}}{\rightarrow} \text{“FromSubset”}]$

$[\text{SubsetIsRelation} \overset{\text{tex}}{\rightarrow} \text{“SubsetIsRelation”}]$

$[\text{SeriesSubsetCP} \overset{\text{tex}}{\rightarrow} \text{“SeriesSubsetCP”}]$

$[\text{ValueType} \overset{\text{tex}}{\rightarrow} \text{“ValueType”}]$

$[\text{ToSeries} \overset{\text{tex}}{\rightarrow} \text{“ToSeries”}]$

$[\text{FromSeries} \overset{\text{tex}}{\rightarrow} \text{“FromSeries”}]$

$[\text{RemoveOr} \overset{\text{tex}}{\rightarrow} \text{“RemoveOr”}]$

$[\text{FromSingleton} \overset{\text{tex}}{\rightarrow} \text{“FromSingleton”}]$

$[\text{InPair(1)} \overset{\text{tex}}{\rightarrow} \text{“InPair(1)”}]$

$[\text{InPair(2)} \overset{\text{tex}}{\rightarrow} \text{“InPair(2)”}]$

$[\text{SameMember(2)} \overset{\text{tex}}{\rightarrow} \text{“SameMember(2)”}]$

$[\text{ToBinaryUnion(1)} \overset{\text{tex}}{\rightarrow} \text{“ToBinaryUnion(1)”}]$

[ToBinaryUnion(2) $\stackrel{\text{tex}}{\rightarrow}$ "ToBinaryUnion(2)"]

[FromOrderedPair(TwoLevels) $\stackrel{\text{tex}}{\rightarrow}$ "FromOrderedPair(TwoLevels)"]

[ToCartProd(Helper) $\stackrel{\text{tex}}{\rightarrow}$ "ToCartProd(Helper)"]

[ToCartProd $\stackrel{\text{tex}}{\rightarrow}$ "ToCartProd"]

[NonreciprocalToRight(Eq) $\stackrel{\text{tex}}{\rightarrow}$ "NonreciprocalToRight(Eq)"]

[NonreciprocalToLeft(Eq)(1term) $\stackrel{\text{tex}}{\rightarrow}$ "NonreciprocalToLeft(Eq)(1 term)"]

[SameReciprocal $\stackrel{\text{tex}}{\rightarrow}$ "SameReciprocal"]

[CPseparationIsRelation $\stackrel{\text{tex}}{\rightarrow}$ "CPseparationIsRelation"]

[OrderedPairEquality $\stackrel{\text{tex}}{\rightarrow}$ "OrderedPairEquality"]

[ReciprocalIsFunction $\stackrel{\text{tex}}{\rightarrow}$ "ReciprocalIsFunction"]

[ReciprocalIsTotal $\stackrel{\text{tex}}{\rightarrow}$ "ReciprocalIsTotal"]

[ReciprocalIsRationalSeries $\stackrel{\text{tex}}{\rightarrow}$ "ReciprocalIsRationalSeries"]

[CrsIsRelation $\stackrel{\text{tex}}{\rightarrow}$ "CrsIsRelation"]

[CrsIsFunction $\stackrel{\text{tex}}{\rightarrow}$ "CrsIsFunction "]

[CrsIsTotal $\stackrel{\text{tex}}{\rightarrow}$ "CrsIsTotal"]

[CrsIsSeries $\stackrel{\text{tex}}{\rightarrow}$ "CrsIsSeries"]

[CrsLookup $\stackrel{\text{tex}}{\rightarrow}$ "CrsLookup"]

[0f $\stackrel{\text{tex}}{\rightarrow}$ "0f"]

[1f $\stackrel{\text{tex}}{\rightarrow}$ "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"]

$[\mathrm{FromOrderedPair(1)} \stackrel{\mathrm{tex}}{\to}$ "FromOrderedPair(1)"]

$[\mathrm{FromOrderedPair(2)} \stackrel{\mathrm{tex}}{\to}$ "FromOrderedPair(2)"]

$[\mathrm{FromCartProd} \stackrel{\mathrm{tex}}{\to}$ "FromCartProd"]

$[\mathrm{FromCartProd(1)} \stackrel{\mathrm{tex}}{\to}$ "FromCartProd(1)"]

$[\mathrm{FromCartProd(2)} \stackrel{\mathrm{tex}}{\to}$ "FromCartProd(2)"]

$[\mathrm{sameOrderedPair} \stackrel{\mathrm{tex}}{\to}$ "sameOrderedPair"]

$[\mathrm{InSeriesHelper} \stackrel{\mathrm{tex}}{\to}$ "InSeriesHelper"]

$[\mathrm{InSeries} \stackrel{\mathrm{tex}}{\to}$ "InSeries"]

$[\mathrm{To} = \mathrm{f(Subset)(Helper)} \stackrel{\mathrm{tex}}{\to}$ "To=f(Subset)(Helper)"]

$[\mathrm{To} = \mathrm{f(Subset)} \stackrel{\mathrm{tex}}{\to}$ "To=f(Subset)"]

$[\mathrm{To} = \mathrm{f} \stackrel{\mathrm{tex}}{\to}$ "To=f"]

$[\mathrm{Tester1} \stackrel{\mathrm{tex}}{\to}$ "Tester1"]

$[\mathrm{Tester2} \stackrel{\mathrm{tex}}{\to}$ "Tester2"]

$[\mathrm{Tester3} \stackrel{\mathrm{tex}}{\to}$ "Tester3"]

$[\mathrm{Tester4} \stackrel{\mathrm{tex}}{\to}$ "Tester4"]

$[\mathrm{Tester5} \stackrel{\mathrm{tex}}{\to}$ "Tester5"]

$[\mathrm{Tester6} \stackrel{\mathrm{tex}}{\to}$ "Tester6"]

$[\mathrm{productIsFunction} \stackrel{\mathrm{tex}}{\to}$ "productIsFunction"]

$[\mathrm{productIsTotal} \stackrel{\mathrm{tex}}{\to}$ "productIsTotal"]

$[\mathrm{ProductIsRationalSeries} \stackrel{\mathrm{tex}}{\to}$ "ProductIsRationalSeries"]

$[\mathrm{TimesF} \stackrel{\mathrm{tex}}{\to}$ "TimesF"]

$[-\mathrm{x} + (1/2)\mathrm{x} = -(1/2)\mathrm{x} \stackrel{\mathrm{tex}}{\to}$ "-x+(1/2)x=-(1/2)x"]

$[\mathrm{ClosetolessIsLess} \stackrel{\mathrm{tex}}{\to}$ "ClosetolessIsLess"]

$[\mathrm{SubLessLeft(F)} \stackrel{\mathrm{tex}}{\to}$ "SubLessLeft(F)"]

$[\mathrm{SubLessLeft(R)} \stackrel{\mathrm{tex}}{\to}$ "SubLessLeft(R)"]

[ClosetogreaterIsGreater $\overset{\text{tex}}{\to}$ “ClosetogreaterIsGreater”]

[SubLessRight(F) $\overset{\text{tex}}{\to}$ “SubLessRight(F)”]

[SubLessRight(R) $\overset{\text{tex}}{\to}$ “SubLessRight(R)”]

[PositiveTripled $\overset{\text{tex}}{\to}$ “PositiveTripled”]

[PositiveDividedBy3 $\overset{\text{tex}}{\to}$ “PositiveDividedBy3”]

[$|\mathrm{x} - \mathrm{x}| = 0$ $\overset{\text{tex}}{\to}$ “|x-x|=0”]

[$1 < 2$ $\overset{\text{tex}}{\to}$ “1<2”]

[$1/3 < 2/3$ $\overset{\text{tex}}{\to}$ “1/3<2/3”]

[$(1/3)\mathrm{x} + (1/3)\mathrm{x} = (2/3)\mathrm{x}$ $\overset{\text{tex}}{\to}$ “(1/3)x+(1/3)x=(2/3)x”]

[$(2/3)\mathrm{x} + (1/3)\mathrm{x} = \mathrm{x}$ $\overset{\text{tex}}{\to}$ “(2/3)x+(1/3)x=x”]

[$-\mathrm{x} + (2/3)\mathrm{x} = -(1/3)\mathrm{x}$ $\overset{\text{tex}}{\to}$ “-x+(2/3)x=-(1/3)x”]

[PreserveLessGreater $\overset{\text{tex}}{\to}$ “PreserveLessGreater”]

[$-(1/3)\mathrm{x} - (1/3)\mathrm{x} = -(2/3)\mathrm{x}$ $\overset{\text{tex}}{\to}$ “-(1/3)x-(1/3)x=-(2/3)x”]

[$-\mathrm{x} + (1/3)\mathrm{x} = -(2/3)\mathrm{x}$ $\overset{\text{tex}}{\to}$ “-x+(1/3)x=-(2/3)x”]