

$[(A) \text{ to } (E) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall (v1): \forall a: \forall_{\text{obj}}(v1): \dot{\vdash} (a)n \vdash$
 $\text{AddDoubleNeg} \triangleright \forall_{\text{obj}}(v1): \dot{\vdash} (a)n \gg \dot{\vdash} (\dot{\vdash} (\forall_{\text{obj}}(v1): \dot{\vdash} (a)n)n)n; \text{Repetition} \triangleright$
 $\dot{\vdash} (\dot{\vdash} (\forall_{\text{obj}}(v1): \dot{\vdash} (a)n)n)n \gg \dot{\vdash} (\dot{\vdash} (\forall_{\text{obj}}(v1): \dot{\vdash} (a)n)n)n \rceil, p_0, c)]$

$[\text{ExistMP3} \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall (v1): \forall (v2): \forall (v3): \forall a: \forall b: \forall c: \forall d: a \Rightarrow b \Rightarrow c \Rightarrow d \vdash$
 $\dot{\vdash} (\forall_{\text{obj}}(v1): \dot{\vdash} (a)n)n \vdash \dot{\vdash} (\forall_{\text{obj}}(v2): \dot{\vdash} (b)n)n \vdash \dot{\vdash} (\forall_{\text{obj}}(v3): \dot{\vdash} (c)n)n \vdash d]$

$[\text{ExistMP3} \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall (v1): \forall (v2): \forall (v3): \forall a: \forall b: \forall c: \forall d: a \Rightarrow$
 $b \Rightarrow c \Rightarrow d \vdash \dot{\vdash} (\forall_{\text{obj}}(v1): \dot{\vdash} (a)n)n \vdash \dot{\vdash} (\forall_{\text{obj}}(v2): \dot{\vdash} (b)n)n \vdash$
 $\dot{\vdash} (\forall_{\text{obj}}(v3): \dot{\vdash} (c)n)n \vdash \text{ExistMP2} \triangleright a \Rightarrow b \Rightarrow c \Rightarrow$
 $d \vdash \dot{\vdash} (\forall_{\text{obj}}(v1): \dot{\vdash} (a)n)n \triangleright \dot{\vdash} (\forall_{\text{obj}}(v2): \dot{\vdash} (b)n)n \gg c \Rightarrow d; \text{ExistMP} \triangleright c \Rightarrow$
 $d \triangleright \dot{\vdash} (\forall_{\text{obj}}(v3): \dot{\vdash} (c)n)n \gg d \rceil, p_0, c)]$

$[\text{PositiveToLeft}(\text{Eq}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall x: \forall y: \forall z: x = (y + z) \vdash (x + (-uz)) = y]$

$[\text{PositiveToLeft}(\text{Eq}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall x: \forall y: \forall z: x = (y + z) \vdash$
 $\text{eqAddition} \triangleright x = (y + z) \gg (x + (-uz)) = ((y + z) + (-uz)); x = x + y - y \gg$
 $y = ((y + z) + (-uz)); \text{eqSymmetry} \triangleright y = ((y + z) + (-uz)) \gg$
 $((y + z) + (-uz)) = y; \text{eqTransitivity} \triangleright (x + (-uz)) =$
 $((y + z) + (-uz)) \triangleright ((y + z) + (-uz)) = y \gg (x + (-uz)) = y \rceil, p_0, c)]$

$[\text{ExpZero}(\text{Exact}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall x: x(\text{exp})0 = 1]$

$[\text{ExpZero}(\text{Exact}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall x: \text{eqReflexivity} \gg 0 =$
 $0; \text{ExpZero} \triangleright 0 = 0 \gg x(\text{exp})0 = 1 \rceil, p_0, c)]$

$[(+1)\text{IsPositive}(\text{N}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall m: \text{Nat}(m) \vdash \dot{\vdash} (0 \leq (m + 1)) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 =$
 $(m + 1))n)n]$

$[(+1)\text{IsPositive}(\text{N}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall m: \text{Nat}(m) \vdash \text{Nonnegative}(\text{N}) \triangleright$
 $\text{Nat}(m) \gg 0 \leq m; \text{Leq} + 1 \triangleright 0 \leq m \gg \dot{\vdash} (0 \leq (m + 1)) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 =$
 $(m + 1))n)n \rceil, p_0, c)]$

$[\text{SameExp}(\text{Base}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall n: \forall x: \forall_{\text{obj}} n: 0 = n \Rightarrow x(\text{exp})0 = x(\text{exp})n]$

$[\text{SameExp}(\text{Base}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall n: \forall x: 0 = n \vdash \text{ExpZero}(\text{Exact}) \gg$
 $x(\text{exp})0 = 1; \text{eqSymmetry} \triangleright 0 = n \gg n = 0; \text{ExpZero} \triangleright n = 0 \gg x(\text{exp})n =$
 $1; \text{eqSymmetry} \triangleright x(\text{exp})n = 1 \gg 1 = x(\text{exp})n; \text{eqTransitivity} \triangleright x(\text{exp})0 =$
 $1 \triangleright 1 = x(\text{exp})n \gg x(\text{exp})0 = x(\text{exp})n; \forall n: \forall x: \text{Ded} \triangleright \forall n: \forall x: 0 = n \vdash x(\text{exp})0 =$
 $x(\text{exp})n \gg 0 = n \Rightarrow x(\text{exp})0 = x(\text{exp})n; \text{Gen} \triangleright 0 = n \Rightarrow x(\text{exp})0 = x(\text{exp})n \gg$
 $\forall_{\text{obj}} n: 0 = n \Rightarrow x(\text{exp})0 = x(\text{exp})n \rceil, p_0, c)]$

$[\text{SameExp}(\text{Indu}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall m: \forall n: \forall x: \forall_{\text{obj}} n: m = n \Rightarrow x(\text{exp})m =$
 $x(\text{exp})n \Rightarrow \forall_{\text{obj}} n: (m + 1) = n \Rightarrow x(\text{exp})(m + 1) = x(\text{exp})n]$

$[\text{SameExp}(\text{Indu}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall m: \forall n: \forall x: \forall m: \forall n: \forall x: \forall_{\text{obj}} n: m =$
 $n \Rightarrow x(\text{exp})m = x(\text{exp})n \vdash (m + 1) = n \vdash (+1)\text{IsPositive}(\text{N}) \gg \dot{\vdash} (0 \leq$
 $(m + 1)) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = (m + 1))n)n; \text{ExpPositive} \triangleright \dot{\vdash} (0 \leq (m + 1)) \Rightarrow$
 $\dot{\vdash} (\dot{\vdash} (0 = (m + 1))n)n \gg x(\text{exp})(m + 1) = (x * x(\text{exp})((m + 1) + (-u1))); x =$
 $x + y - y \gg m = ((m + 1) + (-u1)); \text{A4}@((m + 1) + (-u1)) \triangleright \forall_{\text{obj}} n: m = n \Rightarrow$
 $x(\text{exp})m = x(\text{exp})n \gg m = ((m + 1) + (-u1)) \Rightarrow x(\text{exp})m =$
 $x(\text{exp})((m + 1) + (-u1)); \text{MP} \triangleright m = ((m + 1) + (-u1)) \Rightarrow x(\text{exp})m =$
 $x(\text{exp})((m + 1) + (-u1)) \triangleright m = ((m + 1) + (-u1)) \gg x(\text{exp})m =$

$$[\text{DistributionOut}(\text{Minus}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall \underline{x}: \forall \underline{y}: \forall \underline{z}: ((\underline{x} * \underline{y}) + (-u(\underline{x} * \underline{z}))) = (\underline{x} * (\underline{y} + (-u\underline{z})))]$$

$$[\text{DistributionOut}(\text{Minus}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([\text{SystemQ} \vdash \forall \underline{x}: \forall \underline{y}: \forall \underline{z}: \text{Times}(-1)\text{Left} \gg ((-u1) * (\underline{x} * \underline{z})) = (-u(\underline{x} * \underline{z})); \text{eqSymmetry} \triangleright ((-u1) * (\underline{x} * \underline{z})) = (-u(\underline{x} * \underline{z})) \gg (-u(\underline{x} * \underline{z})) = ((-u1) * (\underline{x} * \underline{z})); \text{timesCommutativity} \gg ((-u1) * (\underline{x} * \underline{z})) = ((\underline{x} * \underline{z}) * (-u1)); \text{timesAssociativity} \gg ((\underline{x} * \underline{z}) * (-u1)) = (\underline{x} * (\underline{z} * (-u1))); \text{Times}(-1) \gg (\underline{z} * (-u1)) = (-u\underline{z}); \text{EqMultiplicationLeft} \triangleright (\underline{z} * (-u1)) = (-u\underline{z}) \gg (\underline{x} * (\underline{z} * (-u1))) = (\underline{x} * (-u\underline{z})); \text{eqTransitivity5} \triangleright (-u(\underline{x} * \underline{z})) = ((-u1) * (\underline{x} * \underline{z})) \triangleright ((-u1) * (\underline{x} * \underline{z})) = ((\underline{x} * \underline{z}) * (-u1)) \triangleright ((\underline{x} * \underline{z}) * (-u1)) = (\underline{x} * (\underline{z} * (-u1))) \triangleright (\underline{x} * (\underline{z} * (-u1))) = (\underline{x} * (-u\underline{z})) \gg (-u(\underline{x} * \underline{z})) = (\underline{x} * (-u\underline{z})); \text{EqAdditionLeft} \triangleright (-u(\underline{x} * \underline{z})) = (\underline{x} * (-u\underline{z})) \gg ((\underline{x} * \underline{y}) + (-u(\underline{x} * \underline{z}))) = ((\underline{x} * \underline{y}) + (\underline{x} * (-u\underline{z}))); \text{DistributionOut} \gg ((\underline{x} * \underline{y}) + (\underline{x} * (-u\underline{z}))) = (\underline{x} * (\underline{y} + (-u\underline{z}))); \text{eqTransitivity} \triangleright ((\underline{x} * \underline{y}) + (-u(\underline{x} * \underline{z}))) = ((\underline{x} * \underline{y}) + (\underline{x} * (-u\underline{z}))) \triangleright ((\underline{x} * \underline{y}) + (\underline{x} * (-u\underline{z}))) = (\underline{x} * (\underline{y} + (-u\underline{z}))) \gg ((\underline{x} * \underline{y}) + (-u(\underline{x} * \underline{z}))) = (\underline{x} * (\underline{y} + (-u\underline{z})))], p0, c)]$$

$$[(1/2)(x + y) - x = (1/2)(y - x) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall \underline{x}: \forall \underline{y}: ((\text{rec}(1 + 1) * (\underline{x} + \underline{y})) + (-u\underline{x})) = (\text{rec}(1 + 1) * (\underline{y} + (-u\underline{x})))]$$

$$[(1/2)(x + y) - x = (1/2)(y - x) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([\text{SystemQ} \vdash \forall \underline{x}: \forall \underline{y}: \text{Distribution} \gg (\text{rec}(1 + 1) * (\underline{x} + \underline{y})) = ((\text{rec}(1 + 1) * \underline{x}) + (\text{rec}(1 + 1) * \underline{y})); \text{eqAddition} \triangleright (\text{rec}(1 + 1) * (\underline{x} + \underline{y})) = ((\text{rec}(1 + 1) * \underline{x}) + (\text{rec}(1 + 1) * \underline{y})) \gg ((\text{rec}(1 + 1) * (\underline{x} + \underline{y})) + (-u\underline{x})) = (((\text{rec}(1 + 1) * \underline{x}) + (\text{rec}(1 + 1) * \underline{y})) + (-u\underline{x})); \text{plusCommutativity} \gg ((\text{rec}(1 + 1) * \underline{x}) + (\text{rec}(1 + 1) * \underline{y})) = ((\text{rec}(1 + 1) * \underline{y}) + (\text{rec}(1 + 1) * \underline{x})); \text{eqAddition} \triangleright ((\text{rec}(1 + 1) * \underline{x}) + (\text{rec}(1 + 1) * \underline{y})) = ((\text{rec}(1 + 1) * \underline{y}) + (\text{rec}(1 + 1) * \underline{x})) \gg (((\text{rec}(1 + 1) * \underline{x}) + (\text{rec}(1 + 1) * \underline{y})) + (-u\underline{x})) = (((\text{rec}(1 + 1) * \underline{y}) + (\text{rec}(1 + 1) * \underline{x})) + (-u\underline{x})); \text{plusAssociativity} \gg (((\text{rec}(1 + 1) * \underline{y}) + (\text{rec}(1 + 1) * \underline{x})) + (-u\underline{x})) = ((\text{rec}(1 + 1) * \underline{y}) + ((\text{rec}(1 + 1) * \underline{x}) + (-u\underline{x}))); \text{TwoHalves} \gg ((\text{rec}(1 + 1) * \underline{x}) + (\text{rec}(1 + 1) * \underline{x})) = \underline{x}; \text{PositiveToRight}(\text{Eq}) \triangleright ((\text{rec}(1 + 1) * \underline{x}) + (\text{rec}(1 + 1) * \underline{x})) = \underline{x} \gg (\text{rec}(1 + 1) * \underline{x}) = (\underline{x} + (-u(\text{rec}(1 + 1) * \underline{x}))); \text{EqNegated} \triangleright (\text{rec}(1 + 1) * \underline{x}) = (\underline{x} + (-u(\text{rec}(1 + 1) * \underline{x}))) \gg (-u(\text{rec}(1 + 1) * \underline{x})) = (-u(\underline{x} + (-u(\text{rec}(1 + 1) * \underline{x})))); \text{MinusNegated} \gg (-u(\underline{x} + (-u(\text{rec}(1 + 1) * \underline{x})))) = ((\text{rec}(1 + 1) * \underline{x}) + (-u\underline{x})); \text{eqTransitivity} \triangleright (-u(\text{rec}(1 + 1) * \underline{x})) = (-u(\underline{x} + (-u(\text{rec}(1 + 1) * \underline{x})))) \triangleright (-u(\underline{x} + (-u(\text{rec}(1 + 1) * \underline{x})))) = ((\text{rec}(1 + 1) * \underline{x}) + (-u\underline{x})) \gg (-u(\text{rec}(1 + 1) * \underline{x})) = ((\text{rec}(1 + 1) * \underline{x}) + (-u\underline{x})); \text{eqSymmetry} \triangleright (-u(\text{rec}(1 + 1) * \underline{x})) = ((\text{rec}(1 + 1) * \underline{x}) + (-u\underline{x})) \gg ((\text{rec}(1 + 1) * \underline{x}) + (-u\underline{x})) = (-u(\text{rec}(1 + 1) * \underline{x})); \text{EqAdditionLeft} \triangleright ((\text{rec}(1 + 1) * \underline{x}) + (-u\underline{x})) = (-u(\text{rec}(1 + 1) * \underline{x})) \gg ((\text{rec}(1 + 1) * \underline{y}) + ((\text{rec}(1 + 1) * \underline{x}) + (-u\underline{x}))) = ((\text{rec}(1 + 1) * \underline{y}) + (-u(\text{rec}(1 + 1) * \underline{x}))); \text{DistributionOut}(\text{Minus}) \gg ((\text{rec}(1 + 1) * \underline{y}) + (-u(\text{rec}(1 + 1) * \underline{x}))) = (\text{rec}(1 + 1) * (\underline{y} + (-u\underline{x}))); \text{eqTransitivity6} \triangleright ((\text{rec}(1 + 1) * (\underline{x} + \underline{y})) + (-u\underline{x})) = (((\text{rec}(1 + 1) * \underline{x}) + (\text{rec}(1 + 1) * \underline{y})) + (-u\underline{x})) \triangleright (((\text{rec}(1 + 1) * \underline{x}) + (\text{rec}(1 + 1) * \underline{y})) + (-u\underline{x})) = (((\text{rec}(1 + 1) * \underline{y}) + (\text{rec}(1 + 1) * \underline{x})) + (-u\underline{x})) \triangleright (((\text{rec}(1 + 1) * \underline{y}) + (\text{rec}(1 + 1) * \underline{x})) + (-u\underline{x})) = ((\text{rec}(1 + 1) * \underline{y}) + ((\text{rec}(1 + 1) * \underline{x}) + (-u\underline{x}))) \triangleright ((\text{rec}(1 + 1) * \underline{y}) + ((\text{rec}(1 + 1) * \underline{x}) + (-u\underline{x}))) = ((\text{rec}(1 + 1) * \underline{y}) + (-u(\text{rec}(1 + 1) * (\underline{x} + \underline{y}))))]$$

$$\begin{aligned}
& (1 * \underline{x})) \triangleright ((\text{rec}(1+1) * \underline{y}) + (-u(\text{rec}(1+1) * \underline{x}))) = (\text{rec}(1+1) * (\underline{y} + (-u\underline{x}))) \gg \\
& ((\text{rec}(1+1) * (\underline{x} + \underline{y})) + (-u\underline{x})) = (\text{rec}(1+1) * (\underline{y} + (-u\underline{x}))), p_0, \underline{c}] \\
& [\underline{y} - (1/2)(\underline{x} + \underline{y}) = (1/2)(\underline{y} - \underline{x}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \\
& \forall \underline{x}: \forall \underline{y}: (\underline{y} + (-u(\text{rec}(1+1) * (\underline{x} + \underline{y})))) = (\text{rec}(1+1) * (\underline{y} + (-u\underline{x})))] \\
& [\underline{y} - (1/2)(\underline{x} + \underline{y}) = (1/2)(\underline{y} - \underline{x}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([\text{SystemQ} \vdash \forall \underline{x}: \forall \underline{y}: \text{Distribution} \gg \\
& (\text{rec}(1+1) * (\underline{x} + \underline{y})) = ((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y})); \text{EqNegated} \triangleright (\text{rec}(1+1) * \\
& (\underline{x} + \underline{y})) = ((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y})) \gg (-u(\text{rec}(1+1) * (\underline{x} + \underline{y}))) = \\
& (-u((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y}))); \text{EqAdditionLeft} \triangleright (-u(\text{rec}(1+1) * (\underline{x} + \underline{y}))) = \\
& (-u((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y}))) \gg (\underline{y} + (-u(\text{rec}(1+1) * (\underline{x} + \underline{y})))) = \\
& (\underline{y} + (-u((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y}))))); \text{plusCommutativity} \gg \\
& ((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y})) = \\
& ((\text{rec}(1+1) * \underline{y}) + (\text{rec}(1+1) * \underline{x})); \text{EqNegated} \triangleright ((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y})) = \\
& ((\text{rec}(1+1) * \underline{y}) + (\text{rec}(1+1) * \underline{x})) \gg (-u((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y}))) = \\
& (-u((\text{rec}(1+1) * \underline{y}) + (\text{rec}(1+1) * \underline{x}))); -x - y = -(x + y) \gg \\
& ((-u(\text{rec}(1+1) * \underline{y})) + (-u(\text{rec}(1+1) * \underline{x}))) = (-u((\text{rec}(1+1) * \underline{y}) + (\text{rec}(1+1) * \\
& \underline{x}))); \text{eqSymmetry} \triangleright ((-u(\text{rec}(1+1) * \underline{y})) + (-u(\text{rec}(1+1) * \underline{x}))) = (-u((\text{rec}(1+1) * \\
& \underline{y}) + (\text{rec}(1+1) * \underline{x}))) \gg (-u((\text{rec}(1+1) * \underline{y}) + (\text{rec}(1+1) * \underline{x}))) = ((-u(\text{rec}(1+1) * \\
& \underline{y})) + (-u(\text{rec}(1+1) * \underline{x}))); \text{eqTransitivity} \triangleright (-u((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y}))) = \\
& (-u((\text{rec}(1+1) * \underline{y}) + (\text{rec}(1+1) * \underline{x}))) \triangleright (-u((\text{rec}(1+1) * \underline{y}) + (\text{rec}(1+1) * \underline{x}))) = \\
& ((-u(\text{rec}(1+1) * \underline{y})) + (-u(\text{rec}(1+1) * \underline{x}))) \gg (-u((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y}))) = \\
& ((-u(\text{rec}(1+1) * \underline{y})) + (-u(\text{rec}(1+1) * \underline{x}))); \text{EqAdditionLeft} \triangleright (-u((\text{rec}(1+1) * \\
& \underline{x}) + (\text{rec}(1+1) * \underline{y}))) = ((-u(\text{rec}(1+1) * \underline{y})) + (-u(\text{rec}(1+1) * \underline{x}))) \gg \\
& (\underline{y} + (-u((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y})))) = (\underline{y} + ((-u(\text{rec}(1+1) * \underline{y})) + (-u(\text{rec}(1+1) * \\
& \underline{x}))))); \text{plusAssociativity} \gg ((\underline{y} + (-u(\text{rec}(1+1) * \underline{y}))) + (-u(\text{rec}(1+1) * \underline{x}))) = \\
& (\underline{y} + ((-u(\text{rec}(1+1) * \underline{y})) + (-u(\text{rec}(1+1) * \underline{x}))))); \text{eqSymmetry} \triangleright ((\underline{y} + (-u(\text{rec}(1+1) * \\
& \underline{y}))) + (-u(\text{rec}(1+1) * \underline{x}))) = (\underline{y} + ((-u(\text{rec}(1+1) * \underline{y})) + (-u(\text{rec}(1+1) * \underline{x})))) \gg \\
& (\underline{y} + ((-u(\text{rec}(1+1) * \underline{y})) + (-u(\text{rec}(1+1) * \underline{x})))) = ((\underline{y} + (-u(\text{rec}(1+1) * \\
& \underline{y}))) + (-u(\text{rec}(1+1) * \underline{x}))); \text{TwoHalves} \gg ((\text{rec}(1+1) * \underline{y}) + (\text{rec}(1+1) * \underline{y})) = \\
& \underline{y}; \text{PositiveToRight}(\text{Eq}) \triangleright ((\text{rec}(1+1) * \underline{y}) + (\text{rec}(1+1) * \underline{y})) = \underline{y} \gg (\text{rec}(1+1) * \underline{y}) = \\
& (\underline{y} + (-u(\text{rec}(1+1) * \underline{y}))); \text{eqSymmetry} \triangleright (\text{rec}(1+1) * \underline{y}) = (\underline{y} + (-u(\text{rec}(1+1) * \underline{y}))) \gg \\
& (\underline{y} + (-u(\text{rec}(1+1) * \underline{y}))) = (\text{rec}(1+1) * \underline{y}); \text{eqAddition} \triangleright (\underline{y} + (-u(\text{rec}(1+1) * \underline{y}))) = \\
& (\text{rec}(1+1) * \underline{y}) \gg ((\underline{y} + (-u(\text{rec}(1+1) * \underline{y}))) + (-u(\text{rec}(1+1) * \underline{x}))) = \\
& ((\text{rec}(1+1) * \underline{y}) + (-u(\text{rec}(1+1) * \underline{x}))); \text{DistributionOut}(\text{Minus}) \gg \\
& ((\text{rec}(1+1) * \underline{y}) + (-u(\text{rec}(1+1) * \underline{x}))) = \\
& (\text{rec}(1+1) * (\underline{y} + (-u\underline{x}))); \text{eqTransitivity6} \triangleright (\underline{y} + (-u(\text{rec}(1+1) * (\underline{x} + \underline{y})))) = \\
& (\underline{y} + (-u((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \underline{y})))) \triangleright (\underline{y} + (-u((\text{rec}(1+1) * \underline{x}) + (\text{rec}(1+1) * \\
& \underline{y})))) = (\underline{y} + ((-u(\text{rec}(1+1) * \underline{y})) + (-u(\text{rec}(1+1) * \underline{x})))) \triangleright (\underline{y} + ((-u(\text{rec}(1+1) * \\
& \underline{y})) + (-u(\text{rec}(1+1) * \underline{x})))) = ((\underline{y} + (-u(\text{rec}(1+1) * \underline{y}))) + (-u(\text{rec}(1+1) * \underline{x}))) \triangleright \\
& ((\underline{y} + (-u(\text{rec}(1+1) * \underline{y}))) + (-u(\text{rec}(1+1) * \underline{x}))) = ((\text{rec}(1+1) * \underline{y}) + (-u(\text{rec}(1+1) * \\
& \underline{x}))) \triangleright ((\text{rec}(1+1) * \underline{y}) + (-u(\text{rec}(1+1) * \underline{x}))) = (\text{rec}(1+1) * (\underline{y} + (-u\underline{x}))) \gg \\
& (\underline{y} + (-u(\text{rec}(1+1) * (\underline{x} + \underline{y})))) = (\text{rec}(1+1) * (\underline{y} + (-u\underline{x}))), p_0, \underline{c}]
\end{aligned}$$

$$\begin{aligned}
& [\text{PositiveBase}(\text{Base}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall \underline{x}: \dot{\vdash} (0 \leq \underline{x}(\text{exp})0 \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = \\
& \underline{x}(\text{exp})0)n)n)n]
\end{aligned}$$

$BS(\underline{m}, \underline{(n2)})]$

$[\text{SameBS}(2)(\text{Base}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([\text{SystemQ} \vdash \forall \underline{m}: \forall \underline{(n2)}: 0 = \underline{(n2)} \vdash \text{eqSymmetry} \triangleright 0 = \underline{(n2)} \gg \underline{(n2)} = 0; \text{BSzero} \triangleright \underline{(n2)} = 0 \gg \text{BS}(\underline{m}, \underline{(n2)}) = \text{rec}(1+1)(\text{exp})\underline{m}; \text{eqSymmetry} \triangleright \text{BS}(\underline{m}, \underline{(n2)}) = \text{rec}(1+1)(\text{exp})\underline{m} \gg \text{rec}(1+1)(\text{exp})\underline{m} = \text{BS}(\underline{m}, \underline{(n2)}); \text{BSzero}(\text{Exact}) \gg \text{BS}(\underline{m}, 0) = \text{rec}(1+1)(\text{exp})\underline{m}; \text{eqTransitivity} \triangleright \text{BS}(\underline{m}, 0) = \text{rec}(1+1)(\text{exp})\underline{m} \triangleright \text{rec}(1+1)(\text{exp})\underline{m} = \text{BS}(\underline{m}, \underline{(n2)}) \gg \text{BS}(\underline{m}, 0) = \text{BS}(\underline{m}, \underline{(n2)}); \forall \underline{m}: \forall \underline{(n2)}: \text{Ded} \triangleright \forall \underline{m}: \forall \underline{(n2)}: 0 = \underline{(n2)} \vdash \text{BS}(\underline{m}, 0) = \text{BS}(\underline{m}, \underline{(n2)}) \gg 0 = \underline{(n2)} \Rightarrow \text{BS}(\underline{m}, 0) = \text{BS}(\underline{m}, \underline{(n2)}); \text{Gen} \triangleright 0 = \underline{(n2)} \Rightarrow \text{BS}(\underline{m}, 0) = \text{BS}(\underline{m}, \underline{(n2)}) \gg \forall_{\text{obj}} \underline{(n2)}: 0 = \underline{(n2)} \Rightarrow \text{BS}(\underline{m}, 0) = \text{BS}(\underline{m}, \underline{(n2)})], p_0, c)]$

$[\text{SameBS}(2)(\text{Indu}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall \underline{m}: \forall \underline{(n1)}: \forall \underline{(n2)}: \forall_{\text{obj}} \underline{(n2)}: \underline{(n1)} = \underline{(n2)} \Rightarrow \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, \underline{(n2)}) \Rightarrow \forall_{\text{obj}} \underline{(n2)}: (\underline{(n1)} + 1) = \underline{(n2)} \Rightarrow \text{BS}(\underline{m}, \underline{(n1)} + 1) = \text{BS}(\underline{m}, \underline{(n2)})]$

$[\text{SameBS}(2)(\text{Indu}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([\text{SystemQ} \vdash \forall \underline{m}: \forall \underline{(n1)}: \forall \underline{(n2)}: \forall_{\text{obj}} \underline{(n2)}: \underline{(n1)} = \underline{(n2)} \Rightarrow \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, \underline{(n2)}) \vdash (\underline{(n1)} + 1) = \underline{(n2)} \vdash (+1)\text{IsPositive}(\underline{N}) \gg \dot{\vdash} (0 \leq (\underline{(n1)} + 1) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = (\underline{(n1)} + 1))\underline{n})\underline{n}); \text{BSpositive} \triangleright \dot{\vdash} (0 \leq (\underline{(n1)} + 1) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = (\underline{(n1)} + 1))\underline{n})\underline{n} \gg \text{BS}(\underline{m}, \underline{(n1)} + 1) = (\text{rec}(1+1)(\text{exp})(\underline{m} + (\underline{(n1)} + 1)) + \text{BS}(\underline{m}, ((\underline{(n1)} + 1) + (-u1))))); x = x + y - y \gg \underline{(n1)} = ((\underline{(n1)} + 1) + (-u1)); A4 @ ((\underline{(n1)} + 1) + (-u1)) \triangleright \forall_{\text{obj}} \underline{(n2)}: \underline{(n1)} = \underline{(n2)} \Rightarrow \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, \underline{(n2)}) \gg \underline{(n1)} = ((\underline{(n1)} + 1) + (-u1)) \Rightarrow \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, ((\underline{(n1)} + 1) + (-u1))); MP \triangleright \underline{(n1)} = ((\underline{(n1)} + 1) + (-u1)) \Rightarrow \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, ((\underline{(n1)} + 1) + (-u1))) \triangleright \underline{(n1)} = ((\underline{(n1)} + 1) + (-u1)) \gg \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, ((\underline{(n1)} + 1) + (-u1))); eqSymmetry \triangleright \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, ((\underline{(n1)} + 1) + (-u1))) \gg \text{BS}(\underline{m}, ((\underline{(n1)} + 1) + (-u1))) = \text{BS}(\underline{m}, \underline{(n1)}) \gg (\text{rec}(1+1)(\text{exp})(\underline{m} + (\underline{(n1)} + 1)) + \text{BS}(\underline{m}, ((\underline{(n1)} + 1) + (-u1)))) = (\text{rec}(1+1)(\text{exp})(\underline{m} + (\underline{(n1)} + 1)) + \text{BS}(\underline{m}, \underline{(n1)})); PositiveToRight(Eq) \triangleright (\underline{(n1)} + 1) = \underline{(n2)} \gg \underline{(n1)} = (\underline{(n2)} + (-u1)); A4 @ ((\underline{(n2)} + (-u1)) \triangleright \forall_{\text{obj}} \underline{(n2)}: \underline{(n1)} = \underline{(n2)} \Rightarrow \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, \underline{(n2)}) \gg \underline{(n1)} = (\underline{(n2)} + (-u1)) \Rightarrow \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, ((\underline{(n2)} + (-u1))))); MP \triangleright \underline{(n1)} = (\underline{(n2)} + (-u1)) \Rightarrow \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, ((\underline{(n2)} + (-u1)))) \triangleright \underline{(n1)} = (\underline{(n2)} + (-u1)) \gg \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, ((\underline{(n2)} + (-u1)))) \triangleright \underline{(n1)} = (\underline{(n2)} + (-u1)) \gg \text{BS}(\underline{m}, \underline{(n1)}) = \text{BS}(\underline{m}, ((\underline{(n2)} + (-u1)))) \gg (\text{rec}(1+1)(\text{exp})(\underline{m} + (\underline{(n1)} + 1)) + \text{BS}(\underline{m}, \underline{(n1)})) = (\text{rec}(1+1)(\text{exp})(\underline{m} + (\underline{(n1)} + 1)) + \text{BS}(\underline{m}, ((\underline{(n2)} + (-u1))))); EqAdditionLeft \triangleright (\underline{(n1)} + 1) = \underline{(n2)} \gg (\underline{m} + (\underline{(n1)} + 1)) = (\underline{m} + \underline{(n2)}); SameExp \triangleright (\underline{m} + (\underline{(n1)} + 1)) = (\underline{m} + \underline{(n2)}) \gg \text{rec}(1+1)(\text{exp})(\underline{m} + (\underline{(n1)} + 1)) = \text{rec}(1+1)(\text{exp})(\underline{m} + \underline{(n2)}) \gg (\text{rec}(1+1)(\text{exp})(\underline{m} + (\underline{(n1)} + 1)) + \text{BS}(\underline{m}, ((\underline{(n2)} + (-u1)))) = (\text{rec}(1+1)(\text{exp})(\underline{m} + \underline{(n2)}) + \text{BS}(\underline{m}, ((\underline{(n2)} + (-u1))))); SubLessRight \triangleright (\underline{(n1)} + 1) = \underline{(n2)} \triangleright \dot{\vdash} (0 \leq (\underline{(n1)} + 1) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = (\underline{(n1)} + 1))\underline{n})\underline{n} \gg \dot{\vdash} (0 \leq \underline{(n2)} \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = \underline{(n2)})\underline{n})\underline{n}); \text{BSpositive} \triangleright \dot{\vdash} (0 \leq \underline{(n2)} \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = \underline{(n2)})\underline{n})\underline{n} \gg \text{BS}(\underline{m}, \underline{(n2)}) = (\text{rec}(1+1)(\text{exp})(\underline{m} + \underline{(n2)}) + \text{BS}(\underline{m}, ((\underline{(n2)} + (-u1))))); eqSymmetry \triangleright \text{BS}(\underline{m}, \underline{(n2)}) = (\text{rec}(1+1)(\text{exp})(\underline{m} + \underline{(n2)}) + \text{BS}(\underline{m}, ((\underline{(n2)} + (-u1)))) \gg (\text{rec}(1+1)(\text{exp})(\underline{m} + \underline{(n2)}) +$

$((\underline{x} + \underline{y}) + (-\underline{u}\underline{y})) \triangleright ((\underline{x} + \underline{y}) + (-\underline{u}\underline{y})) = \underline{x} \gg ((\underline{x} + (-\underline{u}\underline{y})) + \underline{y}) =$
 $\underline{x}; \text{SubLessRight} \triangleright ((\underline{x} + (-\underline{u}\underline{y})) + \underline{y}) = \underline{x} \triangleright \dot{\vdash} (\underline{y} <= ((\underline{x} + (-\underline{u}\underline{y})) + \underline{y})) \Rightarrow$
 $\dot{\vdash} (\dot{\vdash} (\underline{y} = ((\underline{x} + (-\underline{u}\underline{y})) + \underline{y}))\underline{n})\underline{n})\underline{n} \gg \dot{\vdash} (\underline{y} <= \underline{x} \Rightarrow \dot{\vdash} (\dot{\vdash} (\underline{y} = \underline{x})\underline{n})\underline{n})\underline{n}], p_0, c)$
 $[\text{BS}(+1) \xrightarrow{\text{stnt}} \text{SystemQ} \vdash \forall \underline{m}: \forall \underline{n}: \text{BS}(\underline{m}, (\underline{n} + 1)) =$
 $(\text{rec}(1 + 1)(\text{exp})((\underline{m} + \underline{n}) + 1) + \text{BS}(\underline{m}, \underline{n}))]$
 $[\text{BS}(+1) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{m}: \forall \underline{n}: (+1)\text{IsPositive}(\underline{N}) \gg \dot{\vdash} (0 <=$
 $(\underline{n} + 1) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = (\underline{n} + 1))\underline{n})\underline{n}); \text{BSpositive} \triangleright \dot{\vdash} (0 <= (\underline{n} + 1) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 =$
 $(\underline{n} + 1))\underline{n})\underline{n} \gg \text{BS}(\underline{m}, (\underline{n} + 1)) =$
 $(\text{rec}(1 + 1)(\text{exp})(\underline{m} + (\underline{n} + 1)) + \text{BS}(\underline{m}, ((\underline{n} + 1) + (-\underline{u}1))))]; \text{plusAssociativity} \gg$
 $((\underline{m} + \underline{n}) + 1) = (\underline{m} + (\underline{n} + 1)); \text{SameExp} \triangleright ((\underline{m} + \underline{n}) + 1) = (\underline{m} + (\underline{n} + 1)) \gg$
 $\text{rec}(1 + 1)(\text{exp})((\underline{m} + \underline{n}) + 1) = \text{rec}(1 + 1)(\text{exp})(\underline{m} + (\underline{n} + 1)); \text{eqSymmetry} \triangleright$
 $\text{rec}(1 + 1)(\text{exp})((\underline{m} + \underline{n}) + 1) = \text{rec}(1 + 1)(\text{exp})(\underline{m} + (\underline{n} + 1)) \gg$
 $\text{rec}(1 + 1)(\text{exp})(\underline{m} + (\underline{n} + 1)) = \text{rec}(1 + 1)(\text{exp})((\underline{m} + \underline{n}) + 1); \underline{x} = \underline{x} + \underline{y} - \underline{y} \gg$
 $\underline{n} = ((\underline{n} + 1) + (-\underline{u}1)); \text{SameBS}(2) \triangleright \underline{n} = ((\underline{n} + 1) + (-\underline{u}1)) \gg \text{BS}(\underline{m}, \underline{n}) =$
 $\text{BS}(\underline{m}, ((\underline{n} + 1) + (-\underline{u}1))); \text{eqSymmetry} \triangleright \text{BS}(\underline{m}, \underline{n}) = \text{BS}(\underline{m}, ((\underline{n} + 1) + (-\underline{u}1))) \gg$
 $\text{BS}(\underline{m}, ((\underline{n} + 1) + (-\underline{u}1))) = \text{BS}(\underline{m}, \underline{n}); \text{AddEquations} \triangleright \text{rec}(1 + 1)(\text{exp})(\underline{m} + (\underline{n} +$
 $1)) = \text{rec}(1 + 1)(\text{exp})((\underline{m} + \underline{n}) + 1) \triangleright \text{BS}(\underline{m}, ((\underline{n} + 1) + (-\underline{u}1))) = \text{BS}(\underline{m}, \underline{n}) \gg$
 $(\text{rec}(1 + 1)(\text{exp})(\underline{m} + (\underline{n} + 1)) + \text{BS}(\underline{m}, ((\underline{n} + 1) + (-\underline{u}1)))) =$
 $(\text{rec}(1 + 1)(\text{exp})((\underline{m} + \underline{n}) + 1) + \text{BS}(\underline{m}, \underline{n})); \text{eqTransitivity} \triangleright \text{BS}(\underline{m}, (\underline{n} + 1)) =$
 $(\text{rec}(1 + 1)(\text{exp})(\underline{m} + (\underline{n} + 1)) + \text{BS}(\underline{m}, ((\underline{n} + 1) + (-\underline{u}1)))) \triangleright (\text{rec}(1 + 1)(\text{exp})(\underline{m} +$
 $(\underline{n} + 1)) + \text{BS}(\underline{m}, ((\underline{n} + 1) + (-\underline{u}1)))) = (\text{rec}(1 + 1)(\text{exp})((\underline{m} + \underline{n}) + 1) + \text{BS}(\underline{m}, \underline{n})) \gg$
 $\text{BS}(\underline{m}, (\underline{n} + 1)) = (\text{rec}(1 + 1)(\text{exp})((\underline{m} + \underline{n}) + 1) + \text{BS}(\underline{m}, \underline{n}))], p_0, c)$
 $[\text{BSbound}(\text{Exact})(\text{Base}) \xrightarrow{\text{stnt}} \text{SystemQ} \vdash$
 $\forall \underline{m}: (\text{BS}((\underline{m} + 1), 0) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + 0)) = \text{rec}(1 + 1)(\text{exp})\underline{m}]$
 $[\text{BSbound}(\text{Exact})(\text{Base}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{m}: \text{BSzero}(\text{Exact}) \gg$
 $\text{BS}((\underline{m} + 1), 0) = \text{rec}(1 + 1)(\text{exp})(\underline{m} + 1); \text{Exp}(+1) \gg \text{rec}(1 + 1)(\text{exp})(\underline{m} + 1) =$
 $(\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m}); \text{eqTransitivity} \triangleright \text{BS}((\underline{m} + 1), 0) =$
 $\text{rec}(1 + 1)(\text{exp})(\underline{m} + 1) \triangleright \text{rec}(1 + 1)(\text{exp})(\underline{m} + 1) = (\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m}) \gg$
 $\text{BS}((\underline{m} + 1), 0) = (\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m}); \text{plus0} \gg ((\underline{m} + 1) + 0) =$
 $(\underline{m} + 1); \text{SameExp} \triangleright ((\underline{m} + 1) + 0) = (\underline{m} + 1) \gg \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + 0) =$
 $\text{rec}(1 + 1)(\text{exp})(\underline{m} + 1); \text{eqTransitivity} \triangleright \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + 0) =$
 $\text{rec}(1 + 1)(\text{exp})(\underline{m} + 1) \triangleright \text{rec}(1 + 1)(\text{exp})(\underline{m} + 1) = (\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m}) \gg$
 $\text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + 0) = (\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m}); \text{AddEquations} \triangleright$
 $\text{BS}((\underline{m} + 1), 0) = (\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m}) \triangleright \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + 0) =$
 $(\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m}) \gg (\text{BS}((\underline{m} + 1), 0) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + 0)) =$
 $((\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m}) + (\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m})); \text{TwoHalves} \gg$
 $((\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m}) + (\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m})) =$
 $\text{rec}(1 + 1)(\text{exp})\underline{m}; \text{eqTransitivity} \triangleright (\text{BS}((\underline{m} + 1), 0) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + 0)) =$
 $((\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m}) + (\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m})) \triangleright ((\text{rec}(1 +$
 $1) * \text{rec}(1 + 1)(\text{exp})\underline{m}) + (\text{rec}(1 + 1) * \text{rec}(1 + 1)(\text{exp})\underline{m})) = \text{rec}(1 + 1)(\text{exp})\underline{m} \gg$
 $(\text{BS}((\underline{m} + 1), 0) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + 0)) = \text{rec}(1 + 1)(\text{exp})\underline{m}], p_0, c)$
 $[\text{BSbound}(\text{Exact})(\text{Indu}) \xrightarrow{\text{stnt}} \text{SystemQ} \vdash$
 $\forall \underline{m}: \forall \underline{n}: (\text{BS}((\underline{m} + 1), \underline{n}) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})) = \text{rec}(1 + 1)(\text{exp})\underline{m} \Rightarrow$
 $(\text{BS}((\underline{m} + 1), (\underline{n} + 1)) + \text{rec}(1 + 1)(\text{exp})(((\underline{m} + 1) + \underline{n}) + 1)) = \text{rec}(1 + 1)(\text{exp})\underline{m}]$

$$\begin{aligned}
& (\text{BS}(\underline{m} + 1, \underline{n}) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})) = \text{rec}(1 + 1)(\text{exp})\underline{m} \Rightarrow \\
& (\text{BS}(\underline{m} + 1, (\underline{n} + 1)) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n}) + 1) = \\
& \text{rec}(1 + 1)(\text{exp})\underline{m}; \text{Induction} \triangleright (\text{BS}(\underline{m} + 1, 0) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + 0)) = \\
& \text{rec}(1 + 1)(\text{exp})\underline{m} \triangleright (\text{BS}(\underline{m} + 1, \underline{n}) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})) = \\
& \text{rec}(1 + 1)(\text{exp})\underline{m} \Rightarrow (\text{BS}(\underline{m} + 1, (\underline{n} + 1)) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n}) + 1) = \\
& \text{rec}(1 + 1)(\text{exp})\underline{m} \gg (\text{BS}(\underline{m} + 1, \underline{n}) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})) = \\
& \text{rec}(1 + 1)(\text{exp})\underline{m}], p_0, c)]
\end{aligned}$$

$$\begin{aligned}
& [\text{BSbound} \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall \underline{m}: \forall \underline{n}: \dot{\neg} (\text{BS}(\underline{m} + 1, \underline{n}) <= \text{rec}(1 + 1)(\text{exp})\underline{m}) \Rightarrow \\
& \dot{\neg} (\dot{\neg} (\text{BS}(\underline{m} + 1, \underline{n}) = \text{rec}(1 + 1)(\text{exp})\underline{m}) \underline{n}) \underline{n}]]
\end{aligned}$$

$$\begin{aligned}
& [\text{BSbound} \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([\text{SystemQ} \vdash \forall \underline{m}: \forall \underline{n}: \text{BSbound}(\text{Exact}) \gg (\text{BS}(\underline{m} + \\
& 1, \underline{n}) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})) = \text{rec}(1 + 1)(\text{exp})\underline{m}; \text{plusCommutativity} \gg \\
& (\text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n}) + \text{BS}(\underline{m} + 1, \underline{n})) = \\
& (\text{BS}(\underline{m} + 1, \underline{n}) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})); \text{eqTransitivity} \triangleright (\text{rec}(1 + \\
& 1)(\text{exp})((\underline{m} + 1) + \underline{n}) + \text{BS}(\underline{m} + 1, \underline{n})) = (\text{BS}(\underline{m} + 1, \underline{n}) + \text{rec}(1 + \\
& 1)(\text{exp})((\underline{m} + 1) + \underline{n})) \triangleright (\text{BS}(\underline{m} + 1, \underline{n}) + \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})) = \\
& \text{rec}(1 + 1)(\text{exp})\underline{m} \gg (\text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n}) + \text{BS}(\underline{m} + 1, \underline{n})) = \\
& \text{rec}(1 + 1)(\text{exp})\underline{m}; \text{PositiveToRight}(\text{Eq}) \triangleright (\text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n}) + \\
& \text{BS}(\underline{m} + 1, \underline{n})) = \text{rec}(1 + 1)(\text{exp})\underline{m} \gg \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n}) = \\
& (\text{rec}(1 + 1)(\text{exp})\underline{m} + (-\text{uBS}(\underline{m} + 1, \underline{n}))); 0 < 1/2 \gg \dot{\neg} (0 <= \text{rec}(1 + 1) \Rightarrow \\
& \dot{\neg} (\dot{\neg} (0 = \text{rec}(1 + 1)) \underline{n}) \underline{n}); \text{PositiveBase} \triangleright \dot{\neg} (0 <= \text{rec}(1 + 1) \Rightarrow \dot{\neg} (\dot{\neg} (0 = \\
& \text{rec}(1 + 1)) \underline{n}) \underline{n}) \gg \dot{\neg} (0 <= \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})) \Rightarrow \dot{\neg} (\dot{\neg} (0 = \\
& \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})) \underline{n}) \underline{n}; \text{SubLessRight} \triangleright \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n}) = \\
& (\text{rec}(1 + 1)(\text{exp})\underline{m} + (-\text{uBS}(\underline{m} + 1, \underline{n}))) \triangleright \dot{\neg} (0 <= \\
& \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})) \Rightarrow \dot{\neg} (\dot{\neg} (0 = \text{rec}(1 + 1)(\text{exp})((\underline{m} + 1) + \underline{n})) \underline{n}) \underline{n}) \gg \\
& \dot{\neg} (0 <= (\text{rec}(1 + 1)(\text{exp})\underline{m} + (-\text{uBS}(\underline{m} + 1, \underline{n})))) \Rightarrow \dot{\neg} (\dot{\neg} (0 = \\
& (\text{rec}(1 + 1)(\text{exp})\underline{m} + (-\text{uBS}(\underline{m} + 1, \underline{n})))) \underline{n}) \underline{n}); \text{NegativeToLeft}(\text{Less})(1\text{term}) \triangleright \\
& \dot{\neg} (0 <= (\text{rec}(1 + 1)(\text{exp})\underline{m} + (-\text{uBS}(\underline{m} + 1, \underline{n})))) \Rightarrow \dot{\neg} (\dot{\neg} (0 = \\
& (\text{rec}(1 + 1)(\text{exp})\underline{m} + (-\text{uBS}(\underline{m} + 1, \underline{n})))) \underline{n}) \underline{n}) \gg \dot{\neg} (\text{BS}(\underline{m} + 1, \underline{n}) <= \\
& \text{rec}(1 + 1)(\text{exp})\underline{m}) \Rightarrow \dot{\neg} (\dot{\neg} (\text{BS}(\underline{m} + 1, \underline{n}) = \text{rec}(1 + 1)(\text{exp})\underline{m}) \underline{n}) \underline{n}], p_0, c)]
\end{aligned}$$

$$\begin{aligned}
& [\text{SameSeries}(\text{NumDiff}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall (\underline{f}x): \forall (\underline{f}y): \forall \underline{o}: \forall \underline{p}: \forall (\underline{n}1): \forall (\underline{n}2): \underline{o} = \underline{p} \vdash \\
& (\underline{n}1) = (\underline{n}2) \vdash |((\underline{f}x)[\underline{o}] + (-\text{u}\underline{f}y)[(\underline{n}1)]))| = |((\underline{f}x)[\underline{p}] + (-\text{u}\underline{f}y)[(\underline{n}2)]))|]
\end{aligned}$$

$$\begin{aligned}
& [\text{SameSeries}(\text{NumDiff}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([\text{SystemQ} \vdash \\
& \forall (\underline{f}x): \forall (\underline{f}y): \forall \underline{o}: \forall \underline{p}: \forall (\underline{n}1): \forall (\underline{n}2): \underline{o} = \underline{p} \vdash (\underline{n}1) = (\underline{n}2) \vdash \text{SameSeries} \triangleright \underline{o} = \underline{p} \gg \\
& (\underline{f}x)[\underline{o}] = (\underline{f}x)[\underline{p}]; \text{SameSeries} \triangleright (\underline{n}1) = (\underline{n}2) \gg (\underline{f}y)[(\underline{n}1)] = \\
& (\underline{f}y)[(\underline{n}2)]; \text{EqNegated} \triangleright (\underline{f}y)[(\underline{n}1)] = (\underline{f}y)[(\underline{n}2)] \gg (-\text{u}\underline{f}y)[(\underline{n}1)] = \\
& (-\text{u}\underline{f}y)[(\underline{n}2)]; \text{AddEquations} \triangleright (\underline{f}x)[\underline{o}] = (\underline{f}x)[\underline{p}] \triangleright (-\text{u}\underline{f}y)[(\underline{n}1)] = \\
& (-\text{u}\underline{f}y)[(\underline{n}2)] \gg ((\underline{f}x)[\underline{o}] + (-\text{u}\underline{f}y)[(\underline{n}1)])) = \\
& ((\underline{f}x)[\underline{p}] + (-\text{u}\underline{f}y)[(\underline{n}2)])); \text{SameNumerical} \triangleright ((\underline{f}x)[\underline{o}] + (-\text{u}\underline{f}y)[(\underline{n}1)])) = \\
& ((\underline{f}x)[\underline{p}] + (-\text{u}\underline{f}y)[(\underline{n}2)])) \gg |((\underline{f}x)[\underline{o}] + (-\text{u}\underline{f}y)[(\underline{n}1)]))| = \\
& |((\underline{f}x)[\underline{p}] + (-\text{u}\underline{f}y)[(\underline{n}2)]))|], p_0, c)]
\end{aligned}$$

$$\begin{aligned}
& [\text{UStescope}(\text{Zero})(\text{Exact}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall \underline{m}: \text{UStescope}(\underline{m}, 0) = \\
& |(\text{us}[\underline{m}] + (-\text{uus}[(\underline{m} + 1)]))|]
\end{aligned}$$

$$\begin{aligned}
& [\text{UStescope}(\text{Zero})(\text{Exact}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([\text{SystemQ} \vdash \forall \underline{m}: \text{eqReflexivity} \gg 0 =
\end{aligned}$$

$$\begin{aligned}
& 0; \text{UStelescope}(\text{Zero}) \triangleright 0 = 0 \gg \text{UStelescope}(\underline{m}, 0) = \\
& |(\text{us}[\underline{m}] + (-\text{uus}[\underline{m} + 1]))|, p_0, c] \\
& [\text{SameTelescope}(2)(\text{Base}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall \underline{m}: \forall \underline{(n2)}: \forall \text{obj}(\underline{n2}): 0 = \underline{(n2)} \Rightarrow \\
& \text{UStelescope}(\underline{m}, 0) = \text{UStelescope}(\underline{m}, \underline{(n2)})] \\
& [\text{SameTelescope}(2)(\text{Base}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([\text{SystemQ} \vdash \forall \underline{m}: \forall \underline{(n2)}: 0 = \underline{(n2)} \vdash \\
& \text{eqSymmetry} \triangleright 0 = \underline{(n2)} \gg \underline{(n2)} = 0; \text{UStelescope}(\text{Zero}) \triangleright \underline{(n2)} = 0 \gg \\
& \text{UStelescope}(\underline{m}, \underline{(n2)}) = \\
& |(\text{us}[\underline{m}] + (-\text{uus}[\underline{m} + 1]))|; \text{eqSymmetry} \triangleright \text{UStelescope}(\underline{m}, \underline{(n2)}) = \\
& |(\text{us}[\underline{m}] + (-\text{uus}[\underline{m} + 1]))| \gg |(\text{us}[\underline{m}] + (-\text{uus}[\underline{m} + 1]))| = \\
& \text{UStelescope}(\underline{m}, \underline{(n2)}); \text{UStelescope}(\text{Zero})(\text{Exact}) \gg \text{UStelescope}(\underline{m}, 0) = \\
& |(\text{us}[\underline{m}] + (-\text{uus}[\underline{m} + 1]))|; \text{eqTransitivity} \triangleright \text{UStelescope}(\underline{m}, 0) = \\
& |(\text{us}[\underline{m}] + (-\text{uus}[\underline{m} + 1]))| \triangleright |(\text{us}[\underline{m}] + (-\text{uus}[\underline{m} + 1]))| = \text{UStelescope}(\underline{m}, \underline{(n2)}) \gg \\
& \text{UStelescope}(\underline{m}, 0) = \text{UStelescope}(\underline{m}, \underline{(n2)}); \forall \underline{m}: \forall \underline{(n2)}: \text{Ded} \triangleright \forall \underline{m}: \forall \underline{(n2)}: 0 = \\
& \underline{(n2)} \vdash \text{UStelescope}(\underline{m}, 0) = \text{UStelescope}(\underline{m}, \underline{(n2)}) \gg 0 = \underline{(n2)} \Rightarrow \\
& \text{UStelescope}(\underline{m}, 0) = \text{UStelescope}(\underline{m}, \underline{(n2)}); \text{Gen} \triangleright 0 = \underline{(n2)} \Rightarrow \\
& \text{UStelescope}(\underline{m}, 0) = \text{UStelescope}(\underline{m}, \underline{(n2)}) \gg \forall \text{obj}(\underline{n2}): 0 = \underline{(n2)} \Rightarrow \\
& \text{UStelescope}(\underline{m}, 0) = \text{UStelescope}(\underline{m}, \underline{(n2)})], p_0, c] \\
& [\text{SameTelescope}(2)(\text{Indu}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \forall \underline{m}: \forall \underline{(n1)}: \forall \underline{(n2)}: \forall \text{obj}(\underline{n2}): \underline{(n1)} = \\
& \underline{(n2)} \Rightarrow \text{UStelescope}(\underline{m}, \underline{(n1)}) = \text{UStelescope}(\underline{m}, \underline{(n2)}) \Rightarrow \forall \text{obj}(\underline{n2}): \underline{((n1) + 1)} = \\
& \underline{(n2)} \Rightarrow \text{UStelescope}(\underline{m}, \underline{((n1) + 1)}) = \text{UStelescope}(\underline{m}, \underline{(n2)})] \\
& [\text{SameTelescope}(2)(\text{Indu}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}([\text{SystemQ} \vdash \\
& \forall \underline{m}: \forall \underline{(n1)}: \forall \underline{(n2)}: \forall \underline{m}: \forall \underline{(n1)}: \forall \underline{(n2)}: \forall \text{obj}(\underline{n2}): \underline{(n1)} = \underline{(n2)} \Rightarrow \\
& \text{UStelescope}(\underline{m}, \underline{(n1)}) = \text{UStelescope}(\underline{m}, \underline{(n2)}) \vdash \underline{((n1) + 1)} = \underline{(n2)} \vdash \\
& (+1)\text{IsPositive}(\underline{N}) \gg \dot{\vdash} (0 \leq \underline{((n1) + 1)}) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = \\
& \underline{((n1) + 1)}) \underline{n}) \underline{n} \underline{n}; \text{UStelescope}(\text{Positive}) \triangleright \dot{\vdash} (0 \leq \underline{((n1) + 1)}) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = \\
& \underline{((n1) + 1)}) \underline{n}) \underline{n} \underline{n} \gg \text{UStelescope}(\underline{m}, \underline{((n1) + 1)}) = (|(\text{us}[\underline{m} + \underline{((n1) + 1)}])| + \\
& (-\text{uus}[\underline{m} + \underline{((n1) + 1)} + 1]))| + \text{UStelescope}(\underline{m}, \underline{((n1) + 1)} + (-\underline{u1}))); \underline{x} = \\
& \underline{x} + \underline{y} - \underline{y} \gg \underline{(n1)} = \underline{((n1) + 1)} + (-\underline{u1}); \text{A4} @ (\underline{((n1) + 1)} + (-\underline{u1})) \triangleright \forall \text{obj}(\underline{n2}): \underline{(n1)} = \\
& \underline{(n2)} \Rightarrow \text{UStelescope}(\underline{m}, \underline{(n1)}) = \text{UStelescope}(\underline{m}, \underline{(n2)}) \gg \underline{(n1)} = \\
& \underline{((n1) + 1)} + (-\underline{u1}) \Rightarrow \text{UStelescope}(\underline{m}, \underline{(n1)}) = \\
& \text{UStelescope}(\underline{m}, \underline{((n1) + 1)} + (-\underline{u1})); \text{MP} \triangleright \underline{(n1)} = \underline{((n1) + 1)} + (-\underline{u1}) \Rightarrow \\
& \text{UStelescope}(\underline{m}, \underline{(n1)}) = \text{UStelescope}(\underline{m}, \underline{((n1) + 1)} + (-\underline{u1})) \triangleright \underline{(n1)} = \\
& \underline{((n1) + 1)} + (-\underline{u1}) \gg \text{UStelescope}(\underline{m}, \underline{(n1)}) = \\
& \text{UStelescope}(\underline{m}, \underline{((n1) + 1)} + (-\underline{u1})); \text{eqSymmetry} \triangleright \text{UStelescope}(\underline{m}, \underline{(n1)}) = \\
& \text{UStelescope}(\underline{m}, \underline{((n1) + 1)} + (-\underline{u1})) \gg \text{UStelescope}(\underline{m}, \underline{((n1) + 1)} + (-\underline{u1})) = \\
& \text{UStelescope}(\underline{m}, \underline{(n1)}); \text{PositiveToRight}(\text{Eq}) \triangleright \underline{(n1) + 1} = \underline{(n2)} \gg \underline{(n1)} = \\
& \underline{(n2)} + (-\underline{u1}); \text{A4} @ (\underline{(n2)} + (-\underline{u1})) \triangleright \forall \text{obj}(\underline{n2}): \underline{(n1)} = \underline{(n2)} \Rightarrow \\
& \text{UStelescope}(\underline{m}, \underline{(n1)}) = \text{UStelescope}(\underline{m}, \underline{(n2)}) \gg \underline{(n1)} = \underline{(n2)} + (-\underline{u1}) \Rightarrow \\
& \text{UStelescope}(\underline{m}, \underline{(n1)}) = \text{UStelescope}(\underline{m}, \underline{((n2) + (-u1))}); \text{MP} \triangleright \underline{(n1)} = \underline{(n2)} + \\
& (-\underline{u1}) \Rightarrow \text{UStelescope}(\underline{m}, \underline{(n1)}) = \text{UStelescope}(\underline{m}, \underline{((n2) + (-u1))}) \triangleright \underline{(n1)} = \\
& \underline{(n2)} + (-\underline{u1}) \gg \text{UStelescope}(\underline{m}, \underline{(n1)}) = \text{UStelescope}(\underline{m}, \underline{(n2)} + \\
& (-\underline{u1})); \text{eqTransitivity} \triangleright \text{UStelescope}(\underline{m}, \underline{((n1) + 1)} + (-\underline{u1})) = \\
& \text{UStelescope}(\underline{m}, \underline{(n1)}) \triangleright \text{UStelescope}(\underline{m}, \underline{(n1)}) = \\
& \text{UStelescope}(\underline{m}, \underline{((n2) + (-u1))}) \gg \text{UStelescope}(\underline{m}, \underline{((n1) + 1)} + (-\underline{u1})) =
\end{aligned}$$

SameTelescope(2)(Base) $\gg \forall_{\text{obj}} \underline{(n2)}: 0 = \underline{(n2)} \Rightarrow \text{UStelescope}(\underline{\mathbf{m}}, 0) =$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}); \text{SameTelescope}(2)(\text{Indu}) \gg \forall_{\text{obj}} \underline{(n2)}: \underline{(n1)} = \underline{(n2)} \Rightarrow$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{(n1)}) = \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}) \Rightarrow \forall_{\text{obj}} \underline{(n2)}: \underline{((n1) + 1)} = \underline{(n2)} \Rightarrow$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{((n1) + 1)}) = \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}); \text{Induction} \triangleright \forall_{\text{obj}} \underline{(n2)}: 0 =$
 $\underline{(n2)} \Rightarrow \text{UStelescope}(\underline{\mathbf{m}}, 0) = \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}) \triangleright \forall_{\text{obj}} \underline{(n2)}: \underline{(n1)} = \underline{(n2)} \Rightarrow$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{(n1)}) = \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}) \Rightarrow \forall_{\text{obj}} \underline{(n2)}: \underline{((n1) + 1)} = \underline{(n2)} \Rightarrow$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{((n1) + 1)}) = \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}) \gg \forall_{\text{obj}} \underline{(n2)}: \underline{(n1)} = \underline{(n2)} \Rightarrow$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{(n1)}) = \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}); \text{A4} @ \underline{(n2)} \triangleright \forall_{\text{obj}} \underline{(n2)}: \underline{(n1)} =$
 $\underline{(n2)} \Rightarrow \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n1)}) = \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}) \gg \underline{(n1)} = \underline{(n2)} \Rightarrow$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{(n1)}) = \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}); \text{MP} \triangleright \underline{(n1)} = \underline{(n2)} \Rightarrow$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{(n1)}) = \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}) \triangleright \underline{(n1)} = \underline{(n2)} \gg$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{(n1)}) = \text{UStelescope}(\underline{\mathbf{m}}, \underline{(n2)}], p_0, c]$

$[\text{TelescopeNumerical}(\text{Base}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash$
 $\forall \underline{\mathbf{m}}: |(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + (0 + 1)]))| \leq \text{UStelescope}(\underline{\mathbf{m}}, 0)]$

$[\text{TelescopeNumerical}(\text{Base}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{\mathbf{m}}: \text{eqReflexivity} \gg 0 =$
 $0; \text{UStelescope}(\text{Zero}) \triangleright 0 = 0 \gg \text{UStelescope}(\underline{\mathbf{m}}, 0) =$
 $|(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + 1]))|; \text{eqReflexivity} \gg \underline{\mathbf{m}} = \underline{\mathbf{m}}; \text{plus0Left} \gg (0 + 1) =$
 $1; \text{EqAdditionLeft} \triangleright (0 + 1) = 1 \gg \underline{\mathbf{m}} + (0 + 1) = \underline{\mathbf{m}} + 1; \text{eqSymmetry} \triangleright \underline{\mathbf{m}} +$
 $(0 + 1) = \underline{\mathbf{m}} + 1 \gg \underline{\mathbf{m}} + 1 = \underline{\mathbf{m}} + (0 + 1); \text{SameSeries}(\text{NumDiff}) \triangleright \underline{\mathbf{m}} =$
 $\underline{\mathbf{m}} \triangleright \underline{\mathbf{m}} + 1 = \underline{\mathbf{m}} + (0 + 1) \gg |(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + 1]))| =$
 $|(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + (0 + 1)]))|; \text{eqTransitivity} \triangleright \text{UStelescope}(\underline{\mathbf{m}}, 0) =$
 $|(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + 1]))| \triangleright |(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + 1]))| =$
 $|(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + (0 + 1)]))| \gg \text{UStelescope}(\underline{\mathbf{m}}, 0) =$
 $|(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + (0 + 1)]))|; \text{eqSymmetry} \triangleright \text{UStelescope}(\underline{\mathbf{m}}, 0) =$
 $|(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + (0 + 1)]))| \gg |(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + (0 + 1)]))| =$
 $\text{UStelescope}(\underline{\mathbf{m}}, 0); \text{eqLeq} \triangleright |(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + (0 + 1)]))| =$
 $\text{UStelescope}(\underline{\mathbf{m}}, 0) \gg |(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + (0 + 1)]))| \leq$
 $\text{UStelescope}(\underline{\mathbf{m}}, 0)], p_0, c]$

$[\text{TelescopeNumerical}(\text{Indu}) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash$
 $\forall \underline{\mathbf{m}}: \forall \underline{\mathbf{n}}: |(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + (\underline{\mathbf{n}} + 1)]))| \leq \text{UStelescope}(\underline{\mathbf{m}}, \underline{\mathbf{n}}) \Rightarrow$
 $|(\text{us}[\underline{\mathbf{m}}] + (-\text{uus}[\underline{\mathbf{m}} + ((\underline{\mathbf{n}} + 1) + 1)]))| \leq \text{UStelescope}(\underline{\mathbf{m}}, \underline{(\mathbf{n} + 1)})]$
 $[\text{TelescopeNumerical}(\text{Indu}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \forall \underline{\mathbf{m}}: \forall \underline{\mathbf{n}}: |(\text{us}[\underline{\mathbf{m}}] +$
 $(-\text{uus}[\underline{\mathbf{m}} + (\underline{\mathbf{n}} + 1)]))| \leq \text{UStelescope}(\underline{\mathbf{m}}, \underline{\mathbf{n}}) \vdash (+1)\text{IsPositive}(\underline{\mathbf{N}}) \gg \dot{\vdash} (0 \leq$
 $\underline{(\mathbf{n} + 1)} \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = \underline{(\mathbf{n} + 1)}) \underline{\mathbf{n}}) \underline{\mathbf{n}}; \text{UStelescope}(\text{Positive}) \triangleright \dot{\vdash} (0 \leq \underline{(\mathbf{n} + 1)} \Rightarrow$
 $\dot{\vdash} (\dot{\vdash} (0 = \underline{(\mathbf{n} + 1)}) \underline{\mathbf{n}}) \underline{\mathbf{n}} \gg \text{UStelescope}(\underline{\mathbf{m}}, \underline{(\mathbf{n} + 1)}) = (|(\text{us}[\underline{\mathbf{m}} + (\underline{\mathbf{n}} + 1)]| +$
 $(-\text{uus}[\underline{\mathbf{m}} + ((\underline{\mathbf{n}} + 1) + 1)]))| + \text{UStelescope}(\underline{\mathbf{m}}, \underline{((\mathbf{n} + 1) + (-\mathbf{u1}))))); x =$
 $x + y - y \gg \underline{\mathbf{n}} = \underline{((\mathbf{n} + 1) + (-\mathbf{u1}))}; \text{eqSymmetry} \triangleright \underline{\mathbf{n}} = \underline{((\mathbf{n} + 1) + (-\mathbf{u1}))} \gg$
 $\underline{((\mathbf{n} + 1) + (-\mathbf{u1}))} = \underline{\mathbf{n}}; \text{SameTelescope}(2) \triangleright \underline{((\mathbf{n} + 1) + (-\mathbf{u1}))} = \underline{\mathbf{n}} \gg$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{((\mathbf{n} + 1) + (-\mathbf{u1})))} = \text{UStelescope}(\underline{\mathbf{m}}, \underline{\mathbf{n}}); \text{EqAdditionLeft} \triangleright$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{((\mathbf{n} + 1) + (-\mathbf{u1})))} = \text{UStelescope}(\underline{\mathbf{m}}, \underline{\mathbf{n}}) \gg (|(\text{us}[\underline{\mathbf{m}} + (\underline{\mathbf{n}} +$
 $1)]| + (-\text{uus}[\underline{\mathbf{m}} + ((\underline{\mathbf{n}} + 1) + 1)]))| + \text{UStelescope}(\underline{\mathbf{m}}, \underline{((\mathbf{n} + 1) + (-\mathbf{u1})))) =$
 $(|(\text{us}[\underline{\mathbf{m}} + (\underline{\mathbf{n}} + 1)]| + (-\text{uus}[\underline{\mathbf{m}} + ((\underline{\mathbf{n}} + 1) + 1)]))| +$
 $\text{UStelescope}(\underline{\mathbf{m}}, \underline{\mathbf{n}}); \text{eqTransitivity} \triangleright \text{UStelescope}(\underline{\mathbf{m}}, \underline{(\mathbf{n} + 1)}) = (|(\text{us}[\underline{\mathbf{m}} + (\underline{\mathbf{n}} +$
 $1)]| + (-\text{uus}[\underline{\mathbf{m}} + ((\underline{\mathbf{n}} + 1) + 1)]))| + \text{UStelescope}(\underline{\mathbf{m}}, \underline{((\mathbf{n} + 1) + (-\mathbf{u1})))) \triangleright (|(\text{us}[\underline{\mathbf{m}} +$

$$\begin{aligned}
& \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n \Rightarrow \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{f1}): \forall_{\text{obj}}(\overline{f2}): \forall_{\text{obj}}(\overline{f3}): \forall_{\text{obj}}(\overline{f4}): \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathbf{f}_{\text{Ph}} \Rightarrow \\
& \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathbf{f}_{\text{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{s1}): (\overline{s1}) \in N \Rightarrow \dot{\neg}(\forall_{\text{obj}}(\overline{s2}): \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \\
& \mathbf{f}_{\text{Ph}})n)n)n)n) \mid \forall_{\text{obj}}(\overline{\epsilon}): \dot{\neg}(\forall_{\text{obj}}\overline{n}: \dot{\neg}(\forall_{\text{obj}}\overline{m}: \dot{\neg}(0 \leq \overline{\epsilon}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{\epsilon})n)n)n) \Rightarrow \\
& \overline{n} \leq \overline{m} \Rightarrow \dot{\neg}(\{ \{ \text{ph} \in \{ \text{ph} \in P(P(\text{Union}(\{N, Q\})) \} \} \} \} \mid \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{op1}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{op2}): \dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q))n)n) \Rightarrow \\
& \dot{\neg}(\mathbf{a}_{\text{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n) \mid \dot{\neg}(\forall_{\text{obj}}\overline{m}: \dot{\neg}(\mathbf{d}_{\text{Ph}} = \\
& \{\{\overline{m}, \overline{m}\}, \{\overline{m}, ((\text{fy})[\overline{m}] + \{ \text{ph} \in \{ \text{ph} \in P(P(\text{Union}(\{N, Q\})) \} \} \} \mid \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{op1}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{op2}): \dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q))n)n) \Rightarrow \\
& \dot{\neg}(\mathbf{a}_{\text{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n) \mid \dot{\neg}(\forall_{\text{obj}}(\overline{\text{crs1}}): \dot{\neg}(\mathbf{c}_{\text{Ph}} = \\
& \{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})n)n)\{\overline{m}\})\})n)n)\{\overline{m}\} + (-\text{ud}_{\text{Ph}}[\overline{m}])) \mid \leq \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{op1}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{op2}): \dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q))n)n) \Rightarrow \\
& \dot{\neg}(\mathbf{a}_{\text{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n) \mid \dot{\neg}(\dot{\neg}(\overline{(\text{obj}}\overline{r1}): \overline{(r1)} \in \\
& \mathbf{f}_{\text{Ph}} \Rightarrow \dot{\neg}(\forall_{\text{obj}}(\overline{op1}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{op2}): \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) \Rightarrow \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{f1}): \forall_{\text{obj}}(\overline{f2}): \forall_{\text{obj}}(\overline{f3}): \forall_{\text{obj}}(\overline{f4}): \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathbf{f}_{\text{Ph}} \Rightarrow \\
& \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathbf{f}_{\text{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{s1}): (\overline{s1}) \in N \Rightarrow \dot{\neg}(\forall_{\text{obj}}(\overline{s2}): \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \\
& \mathbf{f}_{\text{Ph}})n)n)n)n) \mid \forall_{\text{obj}}(\overline{\epsilon}): \dot{\neg}(\forall_{\text{obj}}\overline{n}: \dot{\neg}(\forall_{\text{obj}}\overline{m}: \dot{\neg}(0 \leq \overline{\epsilon}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{\epsilon})n)n)n) \Rightarrow \\
& \overline{n} \leq \overline{m} \Rightarrow \dot{\neg}(\{ \{ \text{ph} \in \{ \text{ph} \in P(P(\text{Union}(\{N, Q\})) \} \} \} \mid \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{op1}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{op2}): \dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q))n)n) \Rightarrow \\
& \dot{\neg}(\mathbf{a}_{\text{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n) \mid \dot{\neg}(\forall_{\text{obj}}\overline{m}: \dot{\neg}(\mathbf{d}_{\text{Ph}} = \\
& \{\{\overline{m}, \overline{m}\}, \{\overline{m}, (\text{ph} \in \{ \text{ph} \in P(P(\text{Union}(\{N, Q\})) \} \} \} \mid \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{op1}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{op2}): \dot{\neg}(\dot{\neg}(\overline{(op1)} \in N \Rightarrow \dot{\neg}(\overline{(op2)} \in Q))n)n) \Rightarrow
\end{aligned}$$

$$\begin{aligned}
& \dot{\dot{\dot{(\overline{op2}) \in Q})n)n} \Rightarrow \dot{\dot{(\overline{r1}) = \{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}}n)n)n)n) \Rightarrow \\
& \dot{\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 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{\dot{(\forall_{obj} \overline{s1}) : (\overline{s1}) \in N \Rightarrow \dot{\dot{(\forall_{obj} \overline{s2}) : \dot{\dot{(\{\{\overline{s1}, \overline{s1}\}, \{\overline{s1}, \overline{s2}\}\} \in \\
& f_{Ph})n)n)n)n} \mid \forall_{obj} \overline{(\epsilon)} : \dot{\dot{(\forall_{obj} \overline{n}) : \dot{\dot{(\forall_{obj} \overline{m}) : \dot{\dot{(0 \leq \overline{(\epsilon)} \Rightarrow \dot{\dot{(\dot{(0 = \overline{(\epsilon)})n)n)n} \Rightarrow \\
& \overline{n} \leq \overline{m} \Rightarrow \dot{\dot{(|(\overline{fy})[\overline{m}] + (-ud_{Ph}[\overline{m}]|) \leq \overline{(\epsilon)})} \\
& \dot{\dot{(\dot{(|(\overline{fy})[\overline{m}] + (-ud_{Ph}[\overline{m}]|) = \overline{(\epsilon)})n)n)n)n})n) \vdash \dot{\dot{(\{ph \in P(\{ph \in P(\{ph \in \\
& P(P(Union(\{N, Q\})) \mid \dot{\dot{(\forall_{obj} \overline{op1}) : \dot{\dot{(\dot{(\forall_{obj} \overline{op2}) : \dot{\dot{(\dot{(\dot{(\overline{op1}) \in N \Rightarrow \\
& \dot{\dot{(\overline{op2}) \in Q})n)n} \Rightarrow \dot{\dot{(\mathbf{a}_{Ph} = \{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}}n)n)n)n)n) \mid \\
& \dot{\dot{(\dot{(\forall_{obj} \overline{r1}) : (\overline{r1}) \in f_{Ph} \Rightarrow \dot{\dot{(\forall_{obj} \overline{op1}) : \dot{\dot{(\dot{(\forall_{obj} \overline{op2}) : \dot{\dot{(\dot{(\dot{(\overline{op1}) \in N \Rightarrow \\
& \dot{\dot{(\overline{op2}) \in Q})n)n} \Rightarrow \dot{\dot{(\overline{r1}) = \{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}}n)n)n)n)n) \Rightarrow \\
& \dot{\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 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{\dot{(\forall_{obj} \overline{s1}) : (\overline{s1}) \in N \Rightarrow \dot{\dot{(\forall_{obj} \overline{s2}) : \dot{\dot{(\{\{\overline{s1}, \overline{s1}\}, \{\overline{s1}, \overline{s2}\}\} \in \\
& f_{Ph})n)n)n)n} \mid \forall_{obj} \overline{(\epsilon)} : \dot{\dot{(\forall_{obj} \overline{n}) : \dot{\dot{(\forall_{obj} \overline{m}) : \dot{\dot{(0 \leq \overline{(\epsilon)} \Rightarrow \dot{\dot{(\dot{(0 = \overline{(\epsilon)})n)n)n} \Rightarrow \\
& \overline{n} \leq \overline{m} \Rightarrow \dot{\dot{(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})) \mid \\
& \dot{\dot{(\forall_{obj} \overline{op1}) : \dot{\dot{(\dot{(\forall_{obj} \overline{op2}) : \dot{\dot{(\dot{(\dot{(\overline{op1}) \in N \Rightarrow \dot{\dot{(\overline{op2}) \in Q})n)n} \Rightarrow \\
& \dot{\dot{(\mathbf{a}_{Ph} = \{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}}n)n)n)n)n) \mid \dot{\dot{(\forall_{obj} \overline{m}) : \dot{\dot{(\mathbf{d}_{Ph} = \\
& \{\{\overline{m}, \overline{m}\}, \{\overline{m}, ((\overline{fx})[\overline{m}] + (\overline{fz})[\overline{m}])\}}n)n})[\overline{m}] + (-ud_{Ph}[\overline{m}])|) \leq \overline{(\epsilon)} \Rightarrow \\
& \dot{\dot{(\dot{(|(\{ph \in \{ph \in P(P(Union(\{N, Q\})) \mid \\
& \dot{\dot{(\forall_{obj} \overline{op1}) : \dot{\dot{(\dot{(\forall_{obj} \overline{op2}) : \dot{\dot{(\dot{(\dot{(\overline{op1}) \in N \Rightarrow \dot{\dot{(\overline{op2}) \in Q})n)n} \Rightarrow \\
& \dot{\dot{(\mathbf{a}_{Ph} = \{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}}n)n)n)n)n) \mid \dot{\dot{(\forall_{obj} \overline{m}) : \dot{\dot{(\mathbf{d}_{Ph} = \\
& \{\{\overline{m}, \overline{m}\}, \{\overline{m}, ((\overline{fy})[\overline{m}] + (\overline{fz})[\overline{m}])\}}n)n})[\overline{m}] + (-ud_{Ph}[\overline{m}])|) = \overline{(\epsilon)})n)n)n)n})n) \\
& [\text{NeqAddition}(\text{R}) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\lceil \text{SystemQ} \vdash \underline{v}(\underline{fx}) : \underline{v}(\underline{fy}) : \underline{v}(\underline{fz}) : \dot{\dot{(\{ph \in \\
& P(\{ph \in P(\{ph \in P(P(Union(\{N, Q\})) \mid
\end{aligned}$$

$$\begin{aligned}
& \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n \Rightarrow \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{f1}): \forall_{\text{obj}}(\overline{f2}): \forall_{\text{obj}}(\overline{f3}): \forall_{\text{obj}}(\overline{f4}): \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathbf{f}_{\text{Ph}} \Rightarrow \\
& \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathbf{f}_{\text{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{s1}): (\overline{s1}) \in \mathbf{N} \Rightarrow \dot{\neg}(\forall_{\text{obj}}(\overline{s2}): \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \\
& \mathbf{f}_{\text{Ph}})n)n)n)n) \mid \forall_{\text{obj}}(\overline{\epsilon}): \dot{\neg}(\forall_{\text{obj}}\overline{n}: \dot{\neg}(\forall_{\text{obj}}\overline{m}: \dot{\neg}(0 \leq \overline{\epsilon}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{\epsilon})n)n)n) \Rightarrow \\
& \overline{n} \leq \overline{m} \Rightarrow \dot{\neg}(|(\overline{fx})[\overline{m}] + (-\text{ud}_{\text{Ph}}[\overline{m}]))| \leq \overline{\epsilon}) \Rightarrow \\
& \dot{\neg}(\dot{\neg}(|(\overline{fx})[\overline{m}] + (-\text{ud}_{\text{Ph}}[\overline{m}]))| = \overline{\epsilon})n)n)n)n) \vdash \text{from } \ll == \\
& \triangleright \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{\epsilon}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{n}: \dot{\neg}(\forall_{\text{obj}}\overline{m}: \dot{\neg}(\dot{\neg}(0 \leq \overline{\epsilon}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{\epsilon})n)n)n) \Rightarrow \\
& \dot{\neg}(\overline{n} \leq \overline{m} \Rightarrow \{\text{ph} \in \mathbf{P}(\mathbf{P}(\mathbf{P}(\mathbf{Union}(\{\mathbf{N}, \mathbf{Q}\})))) \mid \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{op1}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{op2}): \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{op1}) \in \mathbf{N} \Rightarrow \dot{\neg}(\overline{op2}) \in \mathbf{Q})n)n) \Rightarrow \\
& \dot{\neg}(\mathbf{a}_{\text{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n) \mid \dot{\neg}(\forall_{\text{obj}}(\overline{\text{crs1}}): \dot{\neg}(\mathbf{c}_{\text{Ph}} = \\
& \{\{\overline{(\text{crs1})}, \overline{(\text{crs1})}\}, \{\overline{(\text{crs1})}, 0\}\})n)n) \mid \overline{m} \leq ((\overline{fx})[\overline{m}] + (-\text{u}(\overline{\epsilon})))n)n)n)n) \Rightarrow \\
& \{\text{ph} \in \mathbf{P}(\{\text{ph} \in \mathbf{P}(\{\text{ph} \in \mathbf{P}(\mathbf{P}(\mathbf{Union}(\{\mathbf{N}, \mathbf{Q}\})))) \mid \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{op1}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{op2}): \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{op1}) \in \mathbf{N} \Rightarrow \dot{\neg}(\overline{op2}) \in \mathbf{Q})n)n) \Rightarrow \\
& \dot{\neg}(\mathbf{a}_{\text{Ph}} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n) \mid \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{r1}): (\overline{r1}) \in \\
& \mathbf{f}_{\text{Ph}} \Rightarrow \dot{\neg}(\forall_{\text{obj}}(\overline{op1}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{op2}): \dot{\neg}(\dot{\neg}(\dot{\neg}(\overline{op1}) \in \mathbf{N} \Rightarrow \dot{\neg}(\overline{op2}) \in \mathbf{Q})n)n) \Rightarrow \\
& \dot{\neg}(\overline{(r1)} = \{\{\overline{(op1)}, \overline{(op1)}\}, \{\overline{(op1)}, \overline{(op2)}\}\})n)n)n)n) \Rightarrow \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{f1}): \forall_{\text{obj}}(\overline{f2}): \forall_{\text{obj}}(\overline{f3}): \forall_{\text{obj}}(\overline{f4}): \{\{\overline{(f1)}, \overline{(f1)}\}, \{\overline{(f1)}, \overline{(f2)}\}\} \in \mathbf{f}_{\text{Ph}} \Rightarrow \\
& \{\{\overline{(f3)}, \overline{(f3)}\}, \{\overline{(f3)}, \overline{(f4)}\}\} \in \mathbf{f}_{\text{Ph}} \Rightarrow \overline{(f1)} = \overline{(f3)} \Rightarrow \overline{(f2)} = \overline{(f4)})n)n \Rightarrow \\
& \dot{\neg}(\forall_{\text{obj}}(\overline{s1}): (\overline{s1}) \in \mathbf{N} \Rightarrow \dot{\neg}(\forall_{\text{obj}}(\overline{s2}): \dot{\neg}(\{\{\overline{(s1)}, \overline{(s1)}\}, \{\overline{(s1)}, \overline{(s2)}\}\} \in \\
& \mathbf{f}_{\text{Ph}})n)n)n)n) \mid \forall_{\text{obj}}(\overline{\epsilon}): \dot{\neg}(\forall_{\text{obj}}\overline{n}: \dot{\neg}(\forall_{\text{obj}}\overline{m}: \dot{\neg}(0 \leq \overline{\epsilon}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{\epsilon})n)n)n) \Rightarrow \\
& \overline{n} \leq \overline{m} \Rightarrow \dot{\neg}(|(\overline{fx})[\overline{m}] + (-\text{ud}_{\text{Ph}}[\overline{m}]))| \leq \overline{\epsilon}) \Rightarrow \\
& \dot{\neg}(\dot{\neg}(|(\overline{fx})[\overline{m}] + (-\text{ud}_{\text{Ph}}[\overline{m}]))| = \overline{\epsilon})n)n)n)n) \gg \\
& \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}(\overline{\epsilon}): \dot{\neg}(\dot{\neg}(\forall_{\text{obj}}\overline{n}: \dot{\neg}(\forall_{\text{obj}}\overline{m}: \dot{\neg}(\dot{\neg}(0 \leq \overline{\epsilon}) \Rightarrow \dot{\neg}(\dot{\neg}(0 = \overline{\epsilon})n)n)n) \Rightarrow \\
& \dot{\neg}(\overline{n} \leq \overline{m} \Rightarrow \{\text{ph} \in \{\text{ph} \in \mathbf{P}(\mathbf{P}(\mathbf{Union}(\{\mathbf{N}, \mathbf{Q}\})))) \mid
\end{aligned}$$

$$\begin{aligned}
& \dot{\dot{}}(\dot{\dot{}}(|(\overline{|\{ph \in \{ph \in P(P(\overline{Union(\{N, Q\})})})|} \\
& \dot{\dot{}}(\forall_{obj}(\overline{op1}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\overline{op2}): \dot{\dot{}}(\dot{\dot{}}(\dot{\dot{}}(\overline{op1}) \in N \Rightarrow \dot{\dot{}}(\overline{op2}) \in Q)n)n) \Rightarrow \\
& \dot{\dot{}}(\mathbf{a}_{Ph} = \{\{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}\}n)n)n)n) \dot{\dot{}} | \dot{\dot{}}(\forall_{obj}\underline{m}: \dot{\dot{}}(\mathbf{d}_{Ph} = \\
& \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (\overline{fy})[\underline{m}] + \{ph \in \{ph \in P(P(\overline{Union(\{N, Q\})})})\}\} \\
& \dot{\dot{}}(\forall_{obj}(\overline{op1}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\overline{op2}): \dot{\dot{}}(\dot{\dot{}}(\dot{\dot{}}(\overline{op1}) \in N \Rightarrow \dot{\dot{}}(\overline{op2}) \in Q)n)n) \Rightarrow \\
& \dot{\dot{}}(\mathbf{a}_{Ph} = \{\{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}\}n)n)n)n) \dot{\dot{}} | \dot{\dot{}}(\forall_{obj}\underline{m}: \dot{\dot{}}(\mathbf{f}_{Ph} = \\
& \{\{\underline{m}, \underline{m}\}, \{\underline{m}, (-u(\underline{fx})[\underline{m}])\}\}n)n)\{\underline{m}\}\}\}n)n)\{\underline{m}\} + (-ud_{Ph}[\underline{m}])) = \\
& (\overline{\epsilon})n)n)n)n) \dot{\dot{}}], p_0, c) \\
& \text{--- (25.10.06)}
\end{aligned}$$

$$\begin{aligned}
& [x <= |x|(R) \xrightarrow{\text{stmt}} \text{SystemQ} \vdash \\
& \forall(\underline{fx}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\overline{\epsilon}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}\underline{n}: \dot{\dot{}}(\forall_{obj}\underline{m}: \dot{\dot{}}(\dot{\dot{}}(0 <= \overline{\epsilon}) \Rightarrow \dot{\dot{}}(\dot{\dot{}}(0 = \\
& \overline{\epsilon})n)n)n) \Rightarrow \dot{\dot{}}(\underline{n} <= \underline{m} \Rightarrow (\underline{fx})[\underline{m}] <= (|\underline{fx}|[\underline{m}] + (-u(\overline{\epsilon})))n)n)n)n) \Rightarrow \\
& \{ph \in P(\{ph \in P(\{ph \in P(\overline{Union(\{N, Q\})})})\}) | \\
& \dot{\dot{}}(\forall_{obj}(\overline{op1}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\overline{op2}): \dot{\dot{}}(\dot{\dot{}}(\dot{\dot{}}(\overline{op1}) \in N \Rightarrow \dot{\dot{}}(\overline{op2}) \in Q)n)n) \Rightarrow \\
& \dot{\dot{}}(\mathbf{a}_{Ph} = \{\{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}\}n)n)n)n) \dot{\dot{}} | \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\underline{r1}): (\underline{r1}) \in \\
& \mathbf{f}_{Ph} \Rightarrow \dot{\dot{}}(\forall_{obj}(\overline{op1}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\overline{op2}): \dot{\dot{}}(\dot{\dot{}}(\dot{\dot{}}(\overline{op1}) \in N \Rightarrow \dot{\dot{}}(\overline{op2}) \in Q)n)n) \Rightarrow \\
& \dot{\dot{}}(\underline{r1}) = \{\{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}\}n)n)n)n) \Rightarrow \\
& \dot{\dot{}}(\forall_{obj}(\underline{f1}): \forall_{obj}(\underline{f2}): \forall_{obj}(\underline{f3}): \forall_{obj}(\underline{f4}): \{\{\underline{f1}, \underline{f1}\}, \{\underline{f1}, \underline{f2}\}\} \in \mathbf{f}_{Ph} \Rightarrow \\
& \{\{\underline{f3}, \underline{f3}\}, \{\underline{f3}, \underline{f4}\}\} \in \mathbf{f}_{Ph} \Rightarrow \underline{f1} = \underline{f3} \Rightarrow \underline{f2} = \underline{f4})n)n) \Rightarrow \\
& \dot{\dot{}}(\forall_{obj}(\underline{s1}): (\underline{s1}) \in N \Rightarrow \dot{\dot{}}(\forall_{obj}(\underline{s2}): \dot{\dot{}}(\{\{\underline{s1}, \underline{s1}\}, \{\underline{s1}, \underline{s2}\}\} \in \\
& \mathbf{f}_{Ph})n)n)n) \dot{\dot{}} | \forall_{obj}(\overline{\epsilon}): \dot{\dot{}}(\forall_{obj}\underline{n}: \dot{\dot{}}(\forall_{obj}\underline{m}: \dot{\dot{}}(0 <= \overline{\epsilon}) \Rightarrow \dot{\dot{}}(\dot{\dot{}}(0 = \overline{\epsilon})n)n) \Rightarrow \\
& \underline{n} <= \underline{m} \Rightarrow \dot{\dot{}}(|(\overline{|\underline{fx}|}[\underline{m}] + (-ud_{Ph}[\underline{m}]))| <= \overline{\epsilon}) \Rightarrow \\
& \dot{\dot{}}(\dot{\dot{}}(|(\overline{|\underline{fx}|}[\underline{m}] + (-ud_{Ph}[\underline{m}]))| = \overline{\epsilon})n)n)n)n) \dot{\dot{}}] = \{ph \in P(\{ph \in P(\{ph \in \\
& P(\overline{Union(\{N, Q\})}) | \dot{\dot{}}(\forall_{obj}(\overline{op1}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\overline{op2}): \dot{\dot{}}(\dot{\dot{}}(\overline{op1}) \in N \Rightarrow \\
& \dot{\dot{}}(\overline{op2}) \in Q)n)n) \Rightarrow \dot{\dot{}}(\mathbf{a}_{Ph} = \{\{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}\}n)n)n)n) \dot{\dot{}} | \\
& \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\underline{r1}): (\underline{r1}) \in \mathbf{f}_{Ph} \Rightarrow \dot{\dot{}}(\forall_{obj}(\overline{op1}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\overline{op2}): \dot{\dot{}}(\dot{\dot{}}(\dot{\dot{}}(\overline{op1}) \in N \Rightarrow \\
& \dot{\dot{}}(\overline{op2}) \in Q)n)n) \Rightarrow \dot{\dot{}}(\underline{r1}) = \{\{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}\}n)n)n)n) \Rightarrow \\
& \dot{\dot{}}(\forall_{obj}(\underline{f1}): \forall_{obj}(\underline{f2}): \forall_{obj}(\underline{f3}): \forall_{obj}(\underline{f4}): \{\{\underline{f1}, \underline{f1}\}, \{\underline{f1}, \underline{f2}\}\} \in \mathbf{f}_{Ph} \Rightarrow \\
& \{\{\underline{f3}, \underline{f3}\}, \{\underline{f3}, \underline{f4}\}\} \in \mathbf{f}_{Ph} \Rightarrow \underline{f1} = \underline{f3} \Rightarrow \underline{f2} = \underline{f4})n)n) \Rightarrow \\
& \dot{\dot{}}(\forall_{obj}(\underline{s1}): (\underline{s1}) \in N \Rightarrow \dot{\dot{}}(\forall_{obj}(\underline{s2}): \dot{\dot{}}(\{\{\underline{s1}, \underline{s1}\}, \{\underline{s1}, \underline{s2}\}\} \in \\
& \mathbf{f}_{Ph})n)n)n) \dot{\dot{}} | \forall_{obj}(\overline{\epsilon}): \dot{\dot{}}(\forall_{obj}\underline{n}: \dot{\dot{}}(\forall_{obj}\underline{m}: \dot{\dot{}}(0 <= \overline{\epsilon}) \Rightarrow \dot{\dot{}}(\dot{\dot{}}(0 = \overline{\epsilon})n)n) \Rightarrow \\
& \underline{n} <= \underline{m} \Rightarrow \dot{\dot{}}(|(\overline{|\underline{fx}|}[\underline{m}] + (-ud_{Ph}[\underline{m}]))| <= \overline{\epsilon}) \Rightarrow \\
& \dot{\dot{}}(\dot{\dot{}}(|(\overline{|\underline{fx}|}[\underline{m}] + (-ud_{Ph}[\underline{m}]))| = \overline{\epsilon})n)n)n)n) \dot{\dot{}}]
\end{aligned}$$

$$\begin{aligned}
& [x <= |x|(R) \xrightarrow{\text{proof}} \lambda c. \lambda x. \mathcal{P}(\ulcorner \text{SystemQ} \vdash \\
& \forall(\underline{fx}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\overline{\epsilon}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}\underline{n}: \dot{\dot{}}(\forall_{obj}\underline{m}: \dot{\dot{}}(\dot{\dot{}}(0 <= \overline{\epsilon}) \Rightarrow \dot{\dot{}}(\dot{\dot{}}(0 = \\
& \overline{\epsilon})n)n)n) \Rightarrow \dot{\dot{}}(\underline{n} <= \underline{m} \Rightarrow \{ph \in \{ph \in P(P(\overline{Union(\{N, Q\})})}) | \\
& \dot{\dot{}}(\forall_{obj}(\overline{op1}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\overline{op2}): \dot{\dot{}}(\dot{\dot{}}(\dot{\dot{}}(\overline{op1}) \in N \Rightarrow \dot{\dot{}}(\overline{op2}) \in Q)n)n) \Rightarrow \\
& \dot{\dot{}}(\mathbf{a}_{Ph} = \{\{\{\overline{op1}, \overline{op1}\}, \{\overline{op1}, \overline{op2}\}\}\}n)n)n)n) \dot{\dot{}} | \dot{\dot{}}(\forall_{obj}(\underline{crs1}): \dot{\dot{}}(\mathbf{c}_{Ph} = \\
& \{\{\underline{crs1}, \underline{crs1}\}, \{\underline{crs1}, 0\}\}n)n)\{\underline{m}\} <= ((\underline{fx})[\underline{m}] + (-u(\overline{\epsilon})))n)n)n)n) \Rightarrow \\
& \{ph \in P(\{ph \in P(\{ph \in P(\overline{Union(\{N, Q\})})})\}) | \\
& \dot{\dot{}}(\forall_{obj}(\overline{op1}): \dot{\dot{}}(\dot{\dot{}}(\forall_{obj}(\overline{op2}): \dot{\dot{}}(\dot{\dot{}}(\dot{\dot{}}(\overline{op1}) \in N \Rightarrow \dot{\dot{}}(\overline{op2}) \in Q)n)n) \Rightarrow
\end{aligned}$$

$$\begin{aligned}
& 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) \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) \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) \mid \forall_{obj} \overline{(\epsilon)}: \dot{\neg} (\forall_{obj} \overline{n}: \dot{\neg} (\forall_{obj} \overline{m}: \dot{\neg} (0 \leq \overline{(\epsilon)} \Rightarrow \dot{\neg} (\dot{\neg} (0 = \overline{(\epsilon)})n)n) \Rightarrow \\
& \overline{n} \leq \overline{m} \Rightarrow \dot{\neg} (|(\overline{(fx)}[\overline{m}] + (-ud_{Ph}[\overline{m}])))| \leq \overline{(\epsilon)} \Rightarrow \\
& \dot{\neg} (\dot{\neg} (|(\overline{(fx)}[\overline{m}] + (-ud_{Ph}[\overline{m}])))| = \overline{(\epsilon)})n)n)n) = \{ph \in P(\{ph \in P(\{ph \in \\
& P(P(\overline{Union}(\{N, Q\}))) \mid \dot{\neg} (\forall_{obj} \overline{(op1)}: \dot{\neg} (\dot{\neg} (\forall_{obj} \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) \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) \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) \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) \mid \forall_{obj} \overline{(\epsilon)}: \dot{\neg} (\forall_{obj} \overline{n}: \dot{\neg} (\forall_{obj} \overline{m}: \dot{\neg} (0 \leq \overline{(\epsilon)} \Rightarrow \dot{\neg} (\dot{\neg} (0 = \overline{(\epsilon)})n)n) \Rightarrow \\
& \overline{n} \leq \overline{m} \Rightarrow \dot{\neg} (|(\overline{(fx)}[\overline{m}] + (-ud_{Ph}[\overline{m}])))| \leq \overline{(\epsilon)} \Rightarrow \\
& \dot{\neg} (\dot{\neg} (|(\overline{(fx)}[\overline{m}] + (-ud_{Ph}[\overline{m}])))| = \overline{(\epsilon)})n)n)n) = \{ph \in P(\{ph \in P(\{ph \in \\
& P(P(\overline{Union}(\{N, Q\}))) \mid \dot{\neg} (\forall_{obj} \overline{(op1)}: \dot{\neg} (\dot{\neg} (\forall_{obj} \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) \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) \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
\end{aligned}$$

$\bar{n} \leq \bar{m} \Rightarrow \dot{\vdash} (|(\overline{(\text{fx})}[\bar{m}] + (-\text{ud}_{\text{Ph}}[\bar{m}]|) \leq \overline{(\epsilon)}) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = \overline{(\epsilon)})\text{n})\text{n} \Rightarrow$
 $\dot{\vdash} (\dot{\vdash} (|(\overline{(\text{fx})}[\bar{m}] + (-\text{ud}_{\text{Ph}}[\bar{m}]|) = \overline{(\epsilon)})\text{n})\text{n})\text{n} = \{\text{ph} \in \text{P}(\{\text{ph} \in \text{P}(\{\text{ph} \in$
 $\text{P}(\text{P}(\text{Union}(\{\text{N}, \text{Q}\})) \mid \dot{\vdash} (\forall_{\text{obj}}(\overline{\text{op1}}): \dot{\vdash} (\dot{\vdash} (\forall_{\text{obj}}(\overline{\text{op2}}): \dot{\vdash} (\dot{\vdash} (\overline{\text{op1}}) \in \text{N} \Rightarrow$
 $\dot{\vdash} (\overline{\text{op2}}) \in \text{Q})\text{n})\text{n} \Rightarrow \dot{\vdash} (\text{a}_{\text{Ph}} = \{\{\overline{\text{op1}}, \overline{\text{op1}}\}, \{\overline{\text{op1}}, \overline{\text{op2}}\}\}\text{n})\text{n})\text{n})\text{n}) \mid$
 $\dot{\vdash} (\dot{\vdash} (\forall_{\text{obj}}(\overline{\text{r1}}): (\overline{\text{r1}}) \in \text{f}_{\text{Ph}} \Rightarrow \dot{\vdash} (\forall_{\text{obj}}(\overline{\text{op1}}): \dot{\vdash} (\dot{\vdash} (\forall_{\text{obj}}(\overline{\text{op2}}): \dot{\vdash} (\dot{\vdash} (\overline{\text{op1}}) \in \text{N} \Rightarrow$
 $\dot{\vdash} (\overline{\text{op2}}) \in \text{Q})\text{n})\text{n} \Rightarrow \dot{\vdash} (\overline{\text{r1}}) = \{\{\overline{\text{op1}}, \overline{\text{op1}}\}, \{\overline{\text{op1}}, \overline{\text{op2}}\}\}\text{n})\text{n})\text{n})\text{n} \Rightarrow$
 $\dot{\vdash} (\forall_{\text{obj}}(\overline{\text{f1}}): \forall_{\text{obj}}(\overline{\text{f2}}): \forall_{\text{obj}}(\overline{\text{f3}}): \forall_{\text{obj}}(\overline{\text{f4}}): \{\{\overline{\text{f1}}, \overline{\text{f1}}\}, \{\overline{\text{f1}}, \overline{\text{f2}}\}\} \in \text{f}_{\text{Ph}} \Rightarrow$
 $\{\{\overline{\text{f3}}, \overline{\text{f3}}\}, \{\overline{\text{f3}}, \overline{\text{f4}}\}\} \in \text{f}_{\text{Ph}} \Rightarrow \overline{\text{f1}} = \overline{\text{f3}} \Rightarrow \overline{\text{f2}} = \overline{\text{f4}})\text{n})\text{n} \Rightarrow$
 $\dot{\vdash} (\forall_{\text{obj}}(\overline{\text{s1}}): (\overline{\text{s1}}) \in \text{N} \Rightarrow \dot{\vdash} (\forall_{\text{obj}}(\overline{\text{s2}}): \dot{\vdash} (\{\{\overline{\text{s1}}, \overline{\text{s1}}\}, \{\overline{\text{s1}}, \overline{\text{s2}}\}\} \in$
 $\text{f}_{\text{Ph}})\text{n})\text{n})\text{n}) \mid \forall_{\text{obj}}(\overline{\epsilon}): \dot{\vdash} (\forall_{\text{obj}}\bar{n}: \dot{\vdash} (\forall_{\text{obj}}\bar{m}: \dot{\vdash} (0 \leq \overline{(\epsilon)}) \Rightarrow \dot{\vdash} (\dot{\vdash} (0 = \overline{(\epsilon)})\text{n})\text{n})\text{n} \Rightarrow$
 $\bar{n} \leq \bar{m} \Rightarrow \dot{\vdash} (|(\overline{(\text{fx})}[\bar{m}] + (-\text{ud}_{\text{Ph}}[\bar{m}]|) \leq \overline{(\epsilon)}) \Rightarrow$
 $\dot{\vdash} (\dot{\vdash} (|(\overline{(\text{fx})}[\bar{m}] + (-\text{ud}_{\text{Ph}}[\bar{m}]|) = \overline{(\epsilon)})\text{n})\text{n})\text{n})\text{n}], \text{p}_0, \text{c})$

a

venter—

$[\text{sup}_2 \xrightarrow{\text{prio}}$

Preassociative

$[\text{sup}_2], [\text{base}], [\text{bracket * end bracket}], [\text{big bracket * end bracket}], [\$ * \$],$
 $[\text{flush left } *], [x], [y], [z], [[* \bowtie *]], [[* \rightarrow *]], [\text{pyk}], [\text{tex}], [\text{name}], [\text{prio}], [*, [T],$
 $[\text{if}(*, *, *)], [[* \xrightarrow{*} *]], [\text{val}], [\text{claim}], [\perp], [f(*)], [(*)], [F], [0], [1], [2], [3], [4], [5], [6],$
 $[7], [8], [9], [0], [1], [2], [3], [4], [5], [6], [7], [8], [9], [a], [b], [c], [d], [e], [f], [g], [h], [i], [j],$
 $[k], [l], [m], [n], [o], [p], [q], [r], [s], [t], [u], [v], [w], [(*)^M], [\text{If}(*, *, *)],$
 $[\text{array}\{*\} * \text{end array}], [l], [c], [r], [\text{empty}], [(* | * := *)], [\mathcal{M}(*)], [\tilde{\mathcal{U}}(*)], [\mathcal{U}(*)],$
 $[\mathcal{U}^M(*)], [\text{apply}(*, *)], [\text{apply}_1(*, *)], [\text{identifier}(*)], [\text{identifier}_1(*, *)], [\text{array-}$
 $\text{plus}(*, *)], [\text{array-remove}(*, *, *)], [\text{array-put}(*, *, *, *)], [\text{array-add}(*, *, *, *, *)],$
 $[\text{bit}(*, *)], [\text{bit}_1(*, *)], [\text{rack}], [\"vector\"], [\"bibliography\"], [\"dictionary\"],$
 $[\"body\"], [\"codex\"], [\"expansion\"], [\"code\"], [\"cache\"], [\"diagnose\"], [\"pyk\"],$
 $[\"tex\"], [\"texname\"], [\"value\"], [\"message\"], [\"macro\"], [\"definition\"],$
 $[\"unpack\"], [\"claim\"], [\"priority\"], [\"lambda\"], [\"apply\"], [\"true\"], [\"if\"],$
 $[\"quote\"], [\"proclaim\"], [\"define\"], [\"introduce\"], [\"hide\"], [\"pre\"], [\"post\"],$
 $[\mathcal{E}(*, *, *)], [\mathcal{E}_2(*, *, *, *, *)], [\mathcal{E}_3(*, *, *, *, *)], [\mathcal{E}_4(*, *, *, *, *)], [\text{lookup}(*, *, *)],$
 $[\text{abstract}(*, *, *, *)], [[*]], [\mathcal{M}(*, *, *)], [\mathcal{M}_2(*, *, *, *)], [\mathcal{M}^*(*, *, *)], [\text{macro}],$
 $[\text{s}_0], [\text{zip}(*, *)], [\text{assoc}_1(*, *, *)], [(*)^P], [\text{self}], [[* \doteq *]], [[* \doteq *]], [[* \doteq *]],$
 $[[* \stackrel{\text{pyk}}{=} *]], [[* \stackrel{\text{tex}}{=} *]], [[* \stackrel{\text{name}}{=} *]], [\text{Priority table}[*]], [\tilde{\mathcal{M}}_1], [\tilde{\mathcal{M}}_2(*)], [\tilde{\mathcal{M}}_3(*)],$
 $[\tilde{\mathcal{M}}_4(*, *, *, *)], [\mathcal{M}(*, *, *)], [\mathcal{Q}(*, *, *)], [\tilde{\mathcal{Q}}_2(*, *, *)], [\tilde{\mathcal{Q}}_3(*, *, *, *)], [\tilde{\mathcal{Q}}^*(*, *, *)],$
 $[(*)], [(*)], [\text{display}(*)], [\text{statement}(*)], [[*']], [[*]^-], [\text{aspect}(*, *)],$
 $[\text{aspect}(*, *, *)], [(*)], [\text{tuple}_1(*)], [\text{tuple}_2(*)], [\text{let}_2(*, *)], [\text{let}_1(*, *)],$
 $[[* \stackrel{\text{claim}}{=} *]], [\text{checker}], [\text{check}(*, *)], [\text{check}_2(*, *, *)], [\text{check}_3(*, *, *)],$
 $[\text{check}^*(*, *)], [\text{check}_2^*(*, *, *)], [[*]'], [[*]^-], [[*]^\circ], [\text{msg}], [[* \stackrel{\text{msg}}{=} *]], [<stmt >],$
 $[\text{stmt}], [[* \stackrel{\text{stmt}}{=} *]], [\text{HeadNil}'], [\text{HeadPair}'], [\text{Transitivity}'], [\perp], [\text{Contra}'], [\text{T}_E],$
 $[\text{L}_1], [\underline{*}], [A], [B], [C], [D], [E], [F], [G], [H], [I], [J], [K], [L], [M], [N], [O], [P], [Q],$
 $[R], [S], [T], [U], [V], [W], [X], [Y], [Z], [[* | * := *]], [(* * | * := *)], [\emptyset], [\text{Remainder}],$
 $[(*)^\vee], [\text{intro}(*, *, *, *)], [\text{intro}(*, *, *)], [\text{error}(*, *)], [\text{error}_2(*, *)], [\text{proof}(*, *, *)],$

[proof₂(* , *)], [S(* , *)], [S^I(* , *)], [S[▷](* , *)], [S₁[▷](* , * , *)], [S^E(* , *)], [S₁^E(* , * , *)],
[S⁺(* , *)], [S₁⁺(* , * , *)], [S⁻(* , *)], [S₁⁻(* , * , *)], [S^{*}(* , *)], [S₁^{*}(* , * , *)],
[S₂^{*}(* , * , * , *)], [S[⊗](* , *)], [S₁[⊗](* , * , *)], [S⁺(* , *)], [S₁⁺(* , * , * , *)], [S[⊕](* , *)],
[S₁[⊕](* , * , * , *)], [S^{i.e.}(* , *)], [S₁^{i.e.}(* , * , * , *)], [S₂^{i.e.}(* , * , * , *)], [S[∇](* , *)],
[S₁[∇](* , * , * , *)], [Sⁱ(* , *)], [S₁ⁱ(* , * , *)], [S₂ⁱ(* , * , * , *)], [T(*)], [claims(* , * , *)],
[claims₂(* , * , *)], [<proof>], [proof], [[**Lemma** * : *]], [[**Proof of** * : *]],
[[* **lemma** * : *]], [[* **antilemma** * : *]], [[* **rule** * : *]], [[* **antirule** * : *]],
[verifier], [V₁(*)], [V₂(* , *)], [V₃(* , * , * , *)], [V₄(* , *)], [V₅(* , * , * , *)], [V₆(* , * , * , *)],
[V₇(* , * , * , *)], [Cut(* , *)], [Head_⊕(*)], [Tail_⊕(*)], [rule₁(* , *)], [rule(* , *)],
[Rule tactic], [Plus(* , *)], [[**Theory** *]], [theory₂(* , *)], [theory₃(* , *)],
[theory₄(* , * , *)], [HeadNil''], [HeadPair''], [Transitivity''], [Contra''], [HeadNil],
[HeadPair], [Transitivity], [Contra], [T_E], [ragged right],
[ragged right expansion], [parm(* , * , *)], [parm^{*}(* , * , *)], [inst(* , *)],
[inst^{*}(* , *)], [occur(* , * , *)], [occur^{*}(* , * , *)], [unify(* = * , *)], [unify^{*}(* = * , *)],
[unify₂(* = * , *)], [L_a], [L_b], [L_c], [L_d], [L_e], [L_f], [L_g], [L_h], [L_i], [L_j], [L_k], [L_l], [L_m],
[L_n], [L_o], [L_p], [L_q], [L_r], [L_s], [L_t], [L_u], [L_v], [L_w], [L_x], [L_y], [L_z], [L_A], [L_B], [L_C],
[L_D], [L_E], [L_F], [L_G], [L_H], [L_I], [L_J], [L_K], [L_L], [L_M], [L_N], [L_O], [L_P], [L_Q], [L_R],
[L_S], [L_T], [L_U], [L_V], [L_W], [L_X], [L_Y], [L_Z], [L_?], [Reflexivity], [Reflexivity₁],
[Commutativity], [Commutativity₁], [<tactic>], [tactic], [[* ^{tactic} *]], [P(* , * , *)],
[P^{*}(* , * , *)], [p₀], [conclude₁(* , *)], [conclude₂(* , * , *)], [conclude₃(* , * , * , *)],
[conclude₄(* , *)], [check], [[* ≡ *]], [RootVisible(*)], [A], [R], [C], [T], [L], [{* }], [⌘],
[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], [(* ≡ * | * := *)], [(* ≡⁰ * | * := *)], [(* ≡¹ * | * := *)], [(* ≡^{*} * | * := *)],
[Ded(* , *)], [Ded₀(* , *)], [Ded₁(* , * , *)], [Ded₂(* , * , *)], [Ded₃(* , * , * , *)],
[Ded₄(* , * , * , *)], [Ded₄^{*}(* , * , * , *)], [Ded₅(* , * , *)], [Ded₆(* , * , * , *)],
[Ded₆^{*}(* , * , * , *)], [Ded₇(*)], [Ded₈(* , *)], [Ded₈^{*}(* , *)], [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 3.2e₁], [Prop 3.2e₂],
[Prop 3.2e], [Prop 3.2f₁], [Prop 3.2f₂], [Prop 3.2f], [Prop 3.2g₁], [Prop 3.2g₂],
[Prop 3.2g], [Prop 3.2h₁], [Prop 3.2h₂], [Prop 3.2h], [Block₁(* , * , *)], [Block₂(*)],
[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(* , *)], [* := *], [ContainsEmpty(*)], [Nat(*)],
[Dedu(* , *)], [Dedu₀(* , *)], [Dedu_s(* , * , *)], [Dedu₁(* , * , *)], [Dedu₂(* , * , *)],
[Dedu₃(* , * , * , *)], [Dedu₄(* , * , * , *)], [Dedu₄^{*}(* , * , * , *)], [Dedu₅(* , * , *)],
[Dedu₆(* , * , * , *)], [Dedu₆^{*}(* , * , * , *)], [Dedu₇(*)], [Dedu₈(* , *)], [Dedu₈^{*}(* , *)],
[EX₁], [EX₂], [EX₃], [EX₁₀], [EX₂₀], [*_{EX}], [*^{EX}], [(* ≡ * | * := *)_{EX}],
[(* ≡⁰ * | * := *)_{EX}], [(* ≡¹ * | * := *)_{EX}], [(* ≡^{*} * | * := *)_{EX}], [ph₁], [ph₂], [ph₃],
[*_{Ph}], [*^{Ph}], [(* ≡ * | * := *)_{Ph}], [(* ≡⁰ * | * := *)_{Ph}], [(* ≡¹ * | * := *)_{Ph}],
[(* ≡^{*} * | * := *)_{Ph}], [(* ≡ * | * := *)_{Me}], [(* ≡¹ * | * := *)_{Me}],
[(* ≡^{*} * | * := *)_{Me}], [bs], [OBS], [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], [\emptyset isSubset], [HelperMemberNot \emptyset],
 [MemberNot \emptyset], [HelperUnique \emptyset], [Unique \emptyset], [= Reflexivity], [= Symmetry],
 [Helper == Transitivity], [= Transitivity], [HelperTransferNotEq],
 [TransferNotEq], [HelperPairSubset], [Helper(2)PairSubset], [PairSubset],
 [SamePair], [SameSingleton], [UnionSubset], [SameUnion], [SeparationSubset],
 [SameSeparation], [SameBinaryUnion], [IntersectionSubset], [SameIntersection],
 [AutoMember], [HelperEqSysNot \emptyset], [EqSysNot \emptyset], [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)],
 [(ϵ_1)], [(ϵ_2)], [(fep)], [(fx)], [(fy)], [(fz)], [(fu)], [(fv)], [(fw)], [(rx)], [(ry)], [(rz)],
 [(ru)], [(sx)], [(sx1)], [(sy)], [(sy1)], [(sz)], [(sz1)], [(su)], [(su1)], [(fxs)], [(fys)],
 [(crs1)], [(f1)], [(f2)], [(f3)], [(f4)], [(op1)], [(op2)], [(r1)], [(s1)], [(s2)], [X₁], [X₂],
 [Y₁], [Y₂], [V₁], [V₂], [V₃], [V₄], [V_{2n}], [M₁], [M₂], [N₁], [N₂], [N₃], [ϵ], [ϵ_1], [ϵ_2],
 [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)], [ph₄], [ph₅], [ph₆], [NAT], [RATIONALSERIES], [SERIES],
 [SetOfReals], [SetOfFxs], [N], [Q], [X], [xs], [xaF], [ysF], [us], [usFoelge], [0], [1],
 [(-1)], [2], [3], [1/2], [1/3], [2/3], [0f], [1f], [00], [01], [(- - 01)], [02], [01/02],
 [PlusAssociativity(R)], [PlusAssociativity(R)XX], [Plus0(R)], [Negative(R)],
 [Times1(R)], [lessAddition(R)], [PlusCommutativity(R)],
 [LeqAntisymmetry(R)], [LeqTransitivity(R)], [leqAddition(R)],
 [Distribution(R)], [A4(Axiom)], [InductionAxiom], [EqualityAxiom],
 [EqLeqAxiom], [EqAdditionAxiom], [EqMultiplicationAxiom],
 [QisClosed(Reciprocal)(ImPLY)], [QisClosed(Reciprocal)],
 [QisClosed(Negative)(ImPLY)], [QisClosed(Negative)], [leqReflexivity],
 [leqAntisymmetryAxiom], [leqTransitivityAxiom], [leqTotality],
 [leqAdditionAxiom], [leqMultiplicationAxiom], [plusAssociativity],
 [plusCommutativity], [Negative], [plus0], [timesAssociativity],
 [timesCommutativity], [ReciprocalAxiom], [times1], [Distribution], [0not1],

[lemma eqLeq(R)], [TimesAssociativity(R)], [TimesCommutativity(R)],
[(Adgic)SameR], [Separation2formula(1)], [Separation2formula(2)], [Cauchy],
[PlusF], [ReciprocalF], [From ==], [To ==], [FromInR], [PlusR(Sym)],
[ReciprocalR(Axiom)], [LessMinus1(N)], [Nonnegative(N)], [US0],
[NextXS(UpperBound)], [NextXS(NoUpperBound)], [NextUS(UpperBound)],
[NextUS(NoUpperBound)], [ExpZero], [ExpPositive], [ExpZero(R)],
[ExpPositive(R)], [BSzero], [BSpositive], [UStelescope(Zero)],
[UStelescope(Positive)], [EqAddition(R)], [FromLimit], [ToUpperBound],
[FromUpperBound], [USisUpperBound], [0not1(R)], [ExpUnbounded(R)],
[FromLeq(Advanced)(N)], [FromLeastUpperBound], [ToLeastUpperBound],
[XSisNotUpperBound], [ysFGreater], [ysFLess], [SmallInverse], [Nat Type],
[RationalType], [SeriesType], [Max], [Numerical], [NumericalF],
[MemberOfSeries(Implied)], [JoinConjuncts(2conditions)],
[prop lemma imply negation], [TND], [FromNegatedImplied], [ToNegatedImplied],
[FromNegated(2 * Implied)], [FromNegatedAnd], [FromNegatedOr],
[ToNegatedOr], [FromNegations], [From3Disjuncts], [From2 * 2Disjuncts],
[NegateDisjunct1], [NegateDisjunct2], [ExpandDisjuncts], [SENC1], [SENC2],
[LessLeq(R)], [MemberOfSeries], [memberOfSeries(Type)], [sup],
[ToNegatedAnd(1)], [UniqueNegative], [DoubleMinus], [MinusNegated],
[eqReflexivity], [eqSymmetry], [eqTransitivity], [eqTransitivity4],
[eqTransitivity5], [eqTransitivity6], [AddEquations], [SubtractEquations],
[SubtractEquationsLeft], [MultiplyEquations], [EqNegated],
[PositiveToRight(Eq)], [PositiveToLeft(Eq)(1term)], [NegativeToLeft(Eq)],
[NonreciprocalToRight(Eq)(1term)], [PlusAssociativity(4terms)], [LessNeq],
[NeqSymmetry], [NeqNegated], [SubNeqRight], [SubNeqLeft],
[NegativeToRight(Neq)(1term)], [NeqAddition], [NeqMultiplication],
[NonzeroProduct(2)], [UStelescope(+1)], [TelescopeBound(Base)],
[TelescopeBound(Indu)], [TelescopeBound], [IntervalSize(Base)],
[IntervalSize(Indu)], [IntervalSize], [XS < US], [lemma USdecreasing(+1)],
[CloseUS], [CloseUS(n + 1)], [AllNegated(Implied)], [ExistNegated(Implied)],
[IntroExist(Helper)], [IntroExist], [ExistMP], [ExistMP2], [TwiceExistMP],
[TwiceExistMP2], [EAE - MP], [AddAll], [AddExist(Helper1)],
[AddExist(Helper2)], [AddExist], [AddExist(SimpleAnt)], [AddExist(Simple)],
[AddEAE], [AEA - negated], [EEA - negated], [Induction], [leqAntisymmetry],
[leqTransitivity], [leqAddition], [leqMultiplication], [Reciprocal], [Equality],
[eqLeq], [eqAddition], [eqMultiplication], [LeqMultiplicationLeft], [LeqLessEq],
[LessLeq], [FromLeqGeq], [subLeqRight], [subLeqLeft], [Leq + 1],
[PositiveToRight(Leq)], [PositiveToRight(Leq)(1term)],
[lemma negativeToRight(Leq)], [PositiveToLeft(Leq)], [negativeToLeft(Leq)],
[negativeToLeft(Leq)(1term)], [LeqAdditionLeft], [leqSubtraction],
[leqSubtractionLeft], [thirdGeq], [LeqNegated], [AddEquations(Leq)],
[MultiplyEquations(Leq)], [ThirdGeqSeries], [LeqNeqLess], [FromLess], [ToLess],
[fromNotLess], [toNotLess], [NegativeLessPositive], [leqLessTransitivity],
[LessLeqTransitivity], [LessTransitivity], [LessTotality], [SubLessRight],
[SubLessLeft], [SwitchTerms(x < y - z)], [SwitchTerms(x - y < z)],
[LessAddition], [LessAdditionLeft], [LessMultiplication],

[LessMultiplicationLeft], [LessDivision], [PositiveToRight(Less)],
 [PositiveToLeft(Less)], [NegativeToLeft(Less)], [NegativeToRight(Less)],
 [AddEquations(Less)], [AddEquations(LeqLess)], [reciprocalToLeft(Less)],
 [LessNegated], [PositiveNonzero], [PositiveNegated], [NonpositiveNegated],
 [NegativeNegated], [NonnegativeNegated], [PositiveHalved], [PositiveInverted],
 [NonnegativeNumerical], [NegativeNumerical], [PositiveNumerical],
 [lemma nonpositiveNumerical], [|0| = 0], [0 <= |x|], [x <= |x|],
 [FromPositiveNumerical], [SameNumerical], [SignNumerical(+)],
 [SignNumerical], [ToNumericalLess], [FromNumericalGreater],
 [NumericalDifference], [NumericalDifferenceLess(Helper)],
 [NumericalDifferenceLess], [SplitNumericalSumHelper],
 [splitNumericalSum(++)], [splitNumericalSum(--)],
 [splitNumericalSum(+ - small)], [splitNumericalSum(+ - big)],
 [splitNumericalSum(+ -)], [splitNumericalSum(- +)], [splitNumericalSum],
 [SplitNumericalProduct(++)], [SplitNumericalProduct(+ -)],
 [SplitNumericalProduct], [insertMiddleTerm(Numerical)],
 [insertTwoMiddleTerms(Numerical)], [Three2twoTerms], [Three2threeTerms],
 [Three2twoFactors], [Three2threeFactors], [Times(-1)], [Times(-1)Left],
 [MaxLeq(1)], [MaxLeq(2)], [LessThanMax], [x + y = zBackwards],
 [x * y = zBackwards], [x = x + (y - y)], [x = x + y - y], [x = x * y * (1/y)],
 [insertMiddleTerm(Sum)], [insertTwoMiddleTerms(Sum)],
 [insertMiddleTerm(Difference)], [x * 0 + x = x], [x * 0 = 0], [NonnegativeFactors],
 [NonzeroFactors], [PositiveFactors], [PlusTimesMinus], [MinusTimesMinus],
 [(-1) * (-1) + (-1) * 1 = 0], [(-1) * (-1) = 1], [0 < 1Helper], [0 < 1], [0 < 2],
 [0 < 3], [0 < 1/2], [0 < 1/3], [TwoWholes], [ThreeWholes], [TwoHalves],
 [ThreeThirds], [-x - y = -(x + y)], [-x * y = -(x * y)], [-0 = 0],
 [SFsymmetry], [SFtransitivity], [f2R(Plus)], [f2R(Times)],
 [<< TransitivityHelper(Q)], [<< Transitivity], [<<== Reflexivity],
 [<<== AntisymmetryHelper(Q)], [FromNot < f(Weak)(Helper)],
 [FromNot < f(Weak)], [FromNot < f(Strong)(Helper2)],
 [FromNot < f(Strong)(Helper)], [FromNot < f(Strong)],
 [fromNotSameF(Strongest)(Helper2)], [fromNotSameF(Strongest)(Helper)],
 [fromNotSameF(Strongest)], [ToLess(F)(Helper)], [ToLess(F)], [FromNot <<],
 [ToLess(R)], [FromNotSameF(Weak)(Helper)], [FromNotSameF(Weak)],
 [FromNotLess(F)], [== Addition], [== AdditionLeft],
 [Fpart - Bounded(Base)], [Fpart - Bounded(InduHelper)],
 [Fpart - Bounded(Indu)], [Fpart - Bounded], [F - Bounded(Helper)],
 [F - Bounded], [SameFmultiplication(Helper)], [SameFmultiplication],
 [EqMultiplication(R)], [EqMultiplicationLeft(R)], [x * 0 = 0(F)], [x * 0 = 0(R)],
 [LessMultiplication(F)(Helper2)], [LessMultiplication(F)(Helper)],
 [LessMultiplication(F)], [LessMultiplication(R)], [LeqMultiplication(R)],
 [PlusAssociativity(F)], [Plus0(F)], [PlusCommutativity(F)],
 [TimesAssociativity(F)], [Times1f], [Cauchy(2)(Helper)], [Cauchy(2)],
 [ReciprocalFnonzero], [(Eventually = f)2sameF(Helper)],
 [(Eventually = f)2sameF], [FromNotSameF(Strong)(Helper2)],
 [FromNotSameF(Strong)(Helper)], [FromNotSameF(Strong)],

[SameFreciprocal(Helper)], [SameFreciprocal], [From!! ==], [Reciprocal(R)],
 [TimesCommutativity(F)], [Distribution(F)], [FromMax(1)], [FromMax(2)],
 [ToNegatedAnd], [DistributionOut], [DistributionOutLeft], [DistributionLeft],
 [FromNotLess(R)], [CartProdIsRelation], [FromSubset], [SubsetIsRelation],
 [ToSeries], [FromSeries], [SeriesSubsetCP], [ValueType], [RemoveOr],
 [FromSingleton], [InPair(1)], [InPair(2)], [SameMember(2)], [ToBinaryUnion(1)],
 [ToBinaryUnion(2)], [FromOrderedPair(TwoLevels)], [ToCartProd(Helper)],
 [ToCartProd], [NonreciprocalToRight(Eq)], [NonreciprocalToLeft(Eq)(1term)],
 [SameReciprocal], [CPseparationIsRelation], [OrderedPairEquality],
 [ReciprocalIsFunction], [ReciprocalIsTotal], [ReciprocalIsRationalSeries],
 [CrsIsRelation], [CrsIsFunction], [CrsIsTotal], [CrsIsSeries], [CrsLookup], [0f],
 [1f], [ToSingleton], [FromSameSingleton], [SingletonmembersEqual],
 [UnequalsNotInSingleton], [NonsingletonmembersUnequal], [FromOrderedPair],
 [FromOrderedPair(1)], [FromOrderedPair(2)], [FromCartProd],
 [FromCartProd(1)], [FromCartProd(2)], [sameOrderedPair], [InSeriesHelper],
 [InSeries], [To = f(Subset)(Helper)], [To = f(Subset)], [To = f],
 [productIsFunction], [productIsTotal], [ProductIsRationalSeries], [TimesF],
 $-x + (1/2)x = -(1/2)x$, [PositiveTripled], [PositiveDividedBy3], $|x - x| = 0$,
 $1 < 2$, $1/3 < 2/3$, $(1/3)x + (1/3)x = (2/3)x$, $(2/3)x + (1/3)x = x$,
 $-x + (2/3)x = -(1/3)x$, $-(1/3)x - (1/3)x = -(2/3)x$,
 $-x + (1/3)x = -(2/3)x$, [PreserveLessGreater], [ClosestlessIsLess],
 [SubLessLeft(F)], [SubLessLeft(R)], [ClosestgreaterIsGreater],
 [SubLessRight(F)], [SubLessRight(R)], [plus0Left], [times1Left],
 [EqAdditionLeft], [EqMultiplicationLeft], [PlusF(Sym)], [TimesF(Sym)],
 [SameSeries(Gen)], [EqualsSameF], [LeqReflexivity(R)], [LeqTotality(R)],
 [PositiveToLeft(Eq)], [ExpZero(Exact)], [SameExp(Base)], [SameExp(Indu)],
 [SameExp], $(1/2)(x + y) - x = (1/2)(y - x)$, $y - (1/2)(x + y) = (1/2)(y - x)$,
 [BSzero(Exact)], [SameBS(2)(Base)], [SameBS(2)(Indu)], [SameBS(2)],
 [NegativeToLeft(Less)(1term)], [BS(+1)], [BSbound(Exact)(Base)],
 [BSbound(Exact)(Indu)], [BSbound(Exact)], [BSbound],
 [USTelescope(Zero)(Exact)], [SameTelescope(2)(Base)],
 [SameTelescope(2)(Indu)], [SameTelescope(2)], [Exp(+1)], [PositiveBase(Base)],
 [PositiveBase(Indu)], [PositiveBase], [TelescopeNumerical(Base)],
 [TelescopeNumerical(Indu)], [TelescopeNumerical], [(+1)IsPositive(N)],
 [DistributionOut(Minus)], [PositiveToRight(Eq)(1term)],
 [SameSeries(NumDiff)], [ToNegatedDoubleImply], [AddNegatedAll],
 $(A) \text{ to } (E) \text{ (Imply)}$, $((E) \text{ to } (A) \text{ (Imply)})$, $(E) \text{ to } (A) \text{ (Imply)}$, [ToNegatedAEA],
 [Three2threeTerms(R)], [LessNeq(F)(Helper)], [LessNeq(F)], [LessNeq(R)],
 $x = x + (y - y)(R)$, $x = x + y - y(R)$, [SubtractEquations(R)],
 [NeqAddition(R)], [PositiveToRight(Less)(R)],
 [PositiveToRight(Less)(1term)(R)], [LeqNeqLess(R)], [SubLeqLeft(R)],
 [ToLeq(Advanced)(R)], [LeqLessTransitivity(R)], [NegativeToLeft(Eq)(R)],
 [NegativeToRight(Less)(R)], [!! == Symmetry], [SwitchTerms($x \leq y - z$)],
 [Plus0Left(R)], [PositiveToRight(Eq)(R)], [EqAdditionLeft(R)],
 [Three2twoTerms(R)], [To!! ==], [PositiveToRight(Less)(1term)], $(A) \text{ to } (E)$,
 [NegativeToRight(Eq)(R)], [NegativeToRight(Eq)(1term)(R)],

[DoubleMinus(R)], [UniqueNegative(R)], [SubtractEquationsLeft(R)],
 [EqNegated(R)], [NeqNegated(R)], [$-0 = 0$ (R)], [NegativeNegated(R)],
 [FromLeqGeq(R)], [$0 <= |x|$ (R)], [PositiveNegated(R)], [AddEquations(R)],
 [Times(-1)(R)], [Times(-1)Left(R)], [$-x - y = -(x + y)$ (R)], [LessTotality(R)],
 [SameNumerical(R)], [MinusNegated(R)], [PositiveNumerical(R)],
 [SignNumerical(+)(R)], [NonnegativeNumerical(R)], [NegativeNumerical(R)],
 [LeqNegated(R)], [LessNegated(R)], [SubLeqRight(R)], [FromLess(R)],
 [DistributionOut(R)], [$x * 0 + x = x$ (R)], [$x * 0 = 0$ (R)(fff)], [SignNumerical(R)],
 [NumericalDifference(R)], [$x <= |x|$ (R)], [USLimitIsUpperBound(Helper)],
 [USLimitIsUpperBound], [$(-1) * (-1) + (-1) * 1 = 0$ (R)], [$(-1) * (-1) = 1$ (R)],
 [$0 < 1$ Helper(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)], [$x + x = 2 * x$ (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)], [ExpNonzero(Base)], [ExpNonzero(Indu)],
 [ExpNonzero], [ExpNonzero(2)], [HalfBase(Base)], [HalfBase(Indu)],
 [MultiplyEquations(R)], [NonreciprocalToRight(Eq)(1term)(R)],
 [PositiveNonzero(R)], [NonzeroProduct(2)(R)], [HalfBase],
 [Three2threeFactors(R)], [$x * y = z$ Backwards(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(Implied)],
 [RemoveDoubleNeg(Consequent)], [FromNotUpperBound], [LeqNUB],
 [USLimitIsLeastUpperBound(Helper)], [USLimitIsLeastUpperBound],
 [ExistMP3], [GreaterPositive(N)], [ysFClose(Helper)], [ysFClose],
 [ysFCauchy(Helper)], [ysFCauchy], [from <<==], [to <<==],
 [NonnegativeNumerical(F)], [NegativeNumerical(F)];

Preassociative

[tester1], [tester2], [tester3], [tester4], [tester5], [tester6];

Preassociative

[*_{*}], [*/indexintro(*, *, *, *)], [*/intro(*, *, *)], [*/bothintro(*, *, *, *, *)],
 [*/nameintro(*, *, *, *)], [*'], [*[*]], [*[*→*]], [*[*⇒*]], [*0], [*1], [0b], [*-color(*)],
 [*-color*(*)], [*^H], [*^T], [*^U], [*^h], [*^t], [*^s], [*^c], [*^d], [*^a], [*^C], [*^M], [*^B], [*^r], [*ⁱ],

[*^d], [*^R], [*⁰], [*¹], [*²], [*³], [*⁴], [*⁵], [*⁶], [*⁷], [*⁸], [*⁹], [*^E], [*^ν], [*^C], [*^{C*}], [*^{hide}];

Preassociative

[“ * ”], [], [(*)[†]], [string(*) + *], [string(*) ++ *], [*, [*], [! *], [\" *], [# *], [\$ *], [% *], [& *], [ˆ *], [(*), () *], [**], [+ *], [*], [- *], [. *], [/ *], [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(*)], [| | Macro(*)], [01//Macro(*)], [UB(*, *)], [LUB(*, *)], [BS(*, *)], [USteelescope(*, *)], [(*)], [if * |], [r * |], [Limit(*, *)], [Union(*)], [IsOrderedPair(*, *, *)], [IsRelation(*, *, *)], [isFunction(*, *, *)], [IsSeries(*, *)], [IsNatural(*, *)], [OrderedPair(*, *)], [TypeNat(*)], [TypeNat0(*)], [TypeRational(*)], [TypeRational0(*)], [TypeSeries(*, *)], [Typeseries0(*, *)];

Preassociative

[{ * , * }], [(* , *)], [(-u*)], [-r*], [(- - *)], [1f/*], [01//temp*];

Preassociative

[*(*, *)], [RefRel(*, *)], [SymRel(*, *)], [TransRel(*, *)], [EqRel(*, *)], [* ∈ *], [Partition(*, *)];

Preassociative

[* · *], [* · 0 *], [(* * *)], [* *_f *], [* * * *];

Preassociative

[* + *], [* + 0 *], [* + 1 *], [* - *], [* - 0 *], [* - 1 *], [(* + *)], [(* - *)], [* +_f *], [* -_f *], [* + + *], [R(*) - - R(*)];

Preassociative

[* ∈ *];

Preassociative

[| * |], [if(*, *, *)], [Max(*, *)], [Max(*, *)];

Preassociative

[* = *], [* ≠ *], [* < = *], [* < *], [* <_f *], [* ≤_f *], [SF(*, *)], [* == *],

[*!! == *], [* << *], [* <<== *];

Preassociative

[* ∪ { * }, [* ∪ *], [* \ { * }];

Postassociative

[* ∴ *], [* ∷ *], [* ∴ ∴ *], [* +2* *], [* ∴ ∴ *], [* +2* *];

Postassociative

[* , *];

Preassociative

[* $\overset{B}{\approx}$ *], [* $\overset{D}{\approx}$ *], [* $\overset{C}{\approx}$ *], [* $\overset{P}{\approx}$ *], [* \approx *], [* = *], [* \rightarrow *], [* $\overset{t}{=}$ *], [* $\overset{t^*}{=}$ *], [* $\overset{r}{=}$ *],
[* \in_t *], [* \subseteq_T *], [* $\overset{T}{=}$ *], [* $\overset{s}{=}$ *], [* free in *], [* free in* *], [* free for * in *],
[* free for* * in *], [* \in_c *], [* < *], [* <' *], [* \leq' *], [* = *], [* \neq *], [*^{var}],
[* #⁰ *], [* #¹ *], [* #* *], [* == *], [* \subseteq *];

Preassociative

[¬ *], [¬ (*n)], [* \notin *], [* \neq *];

Preassociative

[* \wedge *], [* $\ddot{\wedge}$ *], [* $\tilde{\wedge}$ *], [* \wedge_c *], [* $\dot{\wedge}$ *];

Preassociative

[* \vee *], [* \parallel *], [* $\ddot{\vee}$ *];

Postassociative

[* $\dot{\vee}$ *];

Preassociative

[∃* : *], [∀* : *], [∀_{obj}* : *], [∃* : *];

Postassociative

[* $\dot{\Rightarrow}$ *], [* \Rightarrow *], [* \Leftrightarrow *], [* $\dot{\Leftrightarrow}$ *];

Preassociative

[{ph ∈ * | * }];

Postassociative

[* : *], [* spy *], [* !*];

Preassociative

[* $\left\{ \begin{array}{l} * \\ * \end{array} \right.$];

Preassociative

[λ * . *], [Λ * . *], [Λ*], [if * then * else *], [let * = * in *], [let * $\ddot{=}$ * in *];

Preassociative

[* #*];

Preassociative

[*^I], [*[▷]], [*^V], [*⁺], [*⁻], [*^{*}];

Preassociative

[* @ *], [* \triangleright *], [* \blacktriangleright *], [* \gg *], [* \triangleright *];

Postassociative

[* \vdash *], [* \vDash *], [* i.e. *];

Preassociative

[∀* : *], [∏* : *];

Postassociative

[* \oplus *];

Postassociative

[*, *];

Preassociative

[* proves *];

Preassociative

[* **proof of** * : *], [Line * : * \gg *; *], [Last line * \gg * \square],
[Line * : Premise \gg *; *], [Line * : Side-condition \gg *; *], [Arbitrary \gg *; *],
[Local \gg * = *; *], [Begin *; * : End; *], [Last block line * \gg *; *],
[Arbitrary \gg *; *];

Postassociative

[* | *];

Postassociative

[* , *], [* [*]*];

Preassociative

[*&*];

Preassociative

[* \\ *], [* linebreak[4] *], [* \\ *];

A Pyk definitioner

[LeqTotality(R) $\xrightarrow{\text{pyk}}$ “lemma leqTotality(R)”]

[PositiveToLeft(Eq) $\xrightarrow{\text{pyk}}$ “lemma positiveToLeft(Eq)”]

[ExpZero(Exact) $\xrightarrow{\text{pyk}}$ “lemma expZero exact”]

[SameExp(Base) $\xrightarrow{\text{pyk}}$ “lemma sameExp base”]

[SameExp(Indu) $\xrightarrow{\text{pyk}}$ “lemma sameExp indu”]

[SameExp $\xrightarrow{\text{pyk}}$ “lemma sameExp”]

[(1/2)(x + y) - x = (1/2)(y - x) $\xrightarrow{\text{pyk}}$ “lemma (1/2)(x+y)-x=(1/2)(y-x)”]

[y - (1/2)(x + y) = (1/2)(y - x) $\xrightarrow{\text{pyk}}$ “lemma y-(1/2)(x+y)=(1/2)(y-x)”]

[BSzero(Exact) $\xrightarrow{\text{pyk}}$ “lemma base(1/2)Sum zero exact”]

[SameBS(2)(Base) $\xrightarrow{\text{pyk}}$ “lemma sameBase(1/2)Sum second base”]

[SameBS(2)(Indu) $\xrightarrow{\text{pyk}}$ “lemma sameBase(1/2)Sum second indu”]

[SameBS(2) $\xrightarrow{\text{pyk}}$ “lemma sameBase(1/2)Sum second”]

[NegativeToLeft(Less)(1term) $\xrightarrow{\text{pyk}}$ “lemma negativeToLeft(Less)(1 term)”]

[BS(+1) $\xrightarrow{\text{pyk}}$ “lemma base(1/2)Sum(+1)”]

[BSbound(Exact)(Base) $\xrightarrow{\text{pyk}}$ “lemma base(1/2)Sum exact bound base”]

[BSbound(Exact)(Indu) $\xrightarrow{\text{pyk}}$ “lemma base(1/2)Sum exact bound indu”]

[BSbound(Exact) $\xrightarrow{\text{pyk}}$ “lemma base(1/2)Sum exact bound”]

[BSbound $\xrightarrow{\text{pyk}}$ “lemma base(1/2)Sum bound”]

[UStescope(Zero)(Exact) $\xrightarrow{\text{pyk}}$ “lemma UStescope zero exact”]

$[\text{SameTelescope}(2)(\text{Base}) \xrightarrow{\text{pyk}} \text{“lemma sameTelescope second base”}]$
 $[\text{SameTelescope}(2)(\text{Indu}) \xrightarrow{\text{pyk}} \text{“lemma sameTelescope second indu”}]$
 $[\text{SameTelescope}(2) \xrightarrow{\text{pyk}} \text{“lemma sameTelescope second”}]$
 $[\text{Exp}(+1) \xrightarrow{\text{pyk}} \text{“lemma exp(+1)”}]$
 $[\text{PositiveBase}(\text{Base}) \xrightarrow{\text{pyk}} \text{“lemma positiveBase base”}]$
 $[\text{PositiveBase}(\text{Indu}) \xrightarrow{\text{pyk}} \text{“lemma positiveBase indu”}]$
 $[\text{PositiveBase} \xrightarrow{\text{pyk}} \text{“lemma positiveBase”}]$
 $[\text{TelescopeNumerical}(\text{Base}) \xrightarrow{\text{pyk}} \text{“lemma telescopeNumerical base”}]$
 $[\text{TelescopeNumerical}(\text{Indu}) \xrightarrow{\text{pyk}} \text{“lemma telescopeNumerical indu”}]$
 $[\text{TelescopeNumerical} \xrightarrow{\text{pyk}} \text{“lemma telescopeNumerical”}]$
 $[(+1)\text{IsPositive}(\text{N}) \xrightarrow{\text{pyk}} \text{“lemma +1IsPositive(N)”}]$
 $[\text{DistributionOut}(\text{Minus}) \xrightarrow{\text{pyk}} \text{“lemma distributionOut(Minus)”}]$
 $[\text{PositiveToRight}(\text{Eq})(1\text{term}) \xrightarrow{\text{pyk}} \text{“lemma positiveToRight(Eq)(1 term)”}]$
 $[\text{SameSeries}(\text{NumDiff}) \xrightarrow{\text{pyk}} \text{“lemma sameSeries(NumDiff)”}]$
 $[\text{ToNegatedDoubleImply} \xrightarrow{\text{pyk}} \text{“prop lemma to negated double imply”}]$
 $[\text{AddNegatedAll} \xrightarrow{\text{pyk}} \text{“pred lemma addNegatedAll”}]$
 $[(\text{A})\text{to}(\text{E})(\text{Imply}) \xrightarrow{\text{pyk}} \text{“pred lemma (A)to}(\sim\text{E})\text{(Imply)”}]$
 $[(\text{E})\text{to}(\text{A})(\text{Imply}) \xrightarrow{\text{pyk}} \text{“pred lemma (E)to}(\sim\text{A})\text{(Imply)”}]$
 $[(\text{E})\text{to}(\text{A})(\text{Imply}) \xrightarrow{\text{pyk}} \text{“pred lemma (E})\text{to}(\sim\text{A})(\text{Imply)”}]$
 $[\text{ToNegatedAEA} \xrightarrow{\text{pyk}} \text{“pred lemma toNegatedAEA”}]$
 $[\text{Three2threeTerms}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma three2threeTerms(R)”}]$
 $[\text{LessNeq}(\text{F})(\text{Helper}) \xrightarrow{\text{pyk}} \text{“lemma lessNeq(F) helper”}]$
 $[\text{LessNeq}(\text{F}) \xrightarrow{\text{pyk}} \text{“lemma lessNeq(F)”}]$
 $[\text{LessNeq}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma lessNeq(R)”}]$
 $[\text{x} = \text{x} + (\text{y} - \text{y})(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma x=x+(y-y)(R)”}]$
 $[\text{x} = \text{x} + \text{y} - \text{y}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma x=x+y-y(R)”}]$
 $[\text{SubtractEquations}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma subtractEquations(R)”}]$
 $[\text{NeqAddition}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma neqAddition(R)”}]$
 $[\text{PositiveToRight}(\text{Less})(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma positiveToRight(Less)(R)”}]$
 $[\text{PositiveToRight}(\text{Less})(1\text{term})(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma positiveToRight(Less)(1 term)(R)”}]$
 $[\text{LeqNeqLess}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma leqNeqLess(R)”}]$
 $[\text{SubLeqLeft}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma subLeqLeft(R)”}]$
 $[\text{ToLeq}(\text{Advanced})(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma toLeq(Advanced)(R)”}]$
 $[\text{LeqLessTransitivity}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma leqLessTransitivity(R)”}]$

$[\text{NegativeToLeft}(\text{Eq})(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma negativeToLeft}(\text{Eq})(\text{R})\text{”}]$
 $[\text{NegativeToRight}(\text{Less})(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma negativeToRight}(\text{Less})(\text{R})\text{”}]$
 $[!! == \text{Symmetry} \xrightarrow{\text{pyk}} \text{“lemma !!==Symmetry”}]$
 $[\text{SwitchTerms}(x \leq y - z) \xrightarrow{\text{pyk}} \text{“lemma switchTerms}(x \leq y - z)\text{”}]$
 $[\text{Plus0Left}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma plus0Left}(\text{R})\text{”}]$
 $[\text{PositiveToRight}(\text{Eq})(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma positiveToRight}(\text{Eq})(\text{R})\text{”}]$
 $[\text{EqAdditionLeft}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma eqAdditionLeft}(\text{R})\text{”}]$
 $[\text{Three2twoTerms}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma three2twoTerms}(\text{R})\text{”}]$
 $[\text{To!!} == \xrightarrow{\text{pyk}} \text{“lemma to!!==”}]$
 $[\text{PositiveToRight}(\text{Less})(1\text{term}) \xrightarrow{\text{pyk}} \text{“lemma positiveToRight}(\text{Less})(1\text{ term})\text{”}]$
 $[(\text{A}) \text{to} (\text{E}) \xrightarrow{\text{pyk}} \text{“pred lemma } (\text{A}^{\sim})\text{to}(\sim \text{E})\text{”}]$
 $[\text{NegativeToRight}(\text{Eq})(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma negativeToRight}(\text{Eq})(\text{R})\text{”}]$
 $[\text{NegativeToRight}(\text{Eq})(1\text{term})(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma negativeToRight}(\text{Eq})(1\text{ term})(\text{R})\text{”}]$
 $[\text{DoubleMinus}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma doubleMinus}(\text{R})\text{”}]$
 $[\text{UniqueNegative}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma uniqueNegative}(\text{R})\text{”}]$
 $[\text{SubtractEquationsLeft}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma subtractEquationsLeft}(\text{R})\text{”}]$
 $[\text{EqNegated}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma eqNegated}(\text{R})\text{”}]$
 $[\text{NeqNegated}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma neqNegated}(\text{R})\text{”}]$
 $[-0 = 0(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma } -0=0(\text{R})\text{”}]$
 $[\text{NegativeNegated}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma negativeNegated}(\text{R})\text{”}]$
 $[\text{FromLeqGeq}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma from leqGeq}(\text{R})\text{”}]$
 $[0 <= |x|(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma } 0 <= |x|(\text{R})\text{”}]$
 $[\text{PositiveNegated}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma positiveNegated}(\text{R})\text{”}]$
 $[\text{AddEquations}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma addEquations}(\text{R})\text{”}]$
 $[\text{Times}(-1)(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma times}(-1)(\text{R})\text{”}]$
 $[\text{Times}(-1)\text{Left}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma times}(-1)\text{Left}(\text{R})\text{”}]$
 $[-x - y = -(x + y)(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma } -x-y=-(x+y)(\text{R})\text{”}]$
 $[\text{LessTotality}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma lessTotality}(\text{R})\text{”}]$
 $[\text{SameNumerical}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma sameNumerical}(\text{R})\text{”}]$
 $[\text{MinusNegated}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma minusNegated}(\text{R})\text{”}]$
 $[\text{PositiveNumerical}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma positiveNumerical}(\text{R})\text{”}]$
 $[\text{SignNumerical}(+)(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma signNumerical}(+)(\text{R})\text{”}]$
 $[\text{NonnegativeNumerical}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma nonnegativeNumerical}(\text{R})\text{”}]$
 $[\text{NegativeNumerical}(\text{R}) \xrightarrow{\text{pyk}} \text{“lemma negativeNumerical}(\text{R})\text{”}]$

$[\text{LeqNegated}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma leqNegated}(\mathbb{R})"]$
 $[\text{LessNegated}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma lessNegated}(\mathbb{R})"]$
 $[\text{SubLeqRight}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma subLeqRight}(\mathbb{R})"]$
 $[\text{FromLess}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma fromLess}(\mathbb{R})"]$
 $[\text{DistributionOut}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma distributionOut}(\mathbb{R})"]$
 $[\mathbf{x} * 0 + \mathbf{x} = \mathbf{x}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma x*0+x=x}(\mathbb{R})"]$
 $[\mathbf{x} * 0 = 0(\mathbb{R})(\text{fff}) \xrightarrow{\text{pyk}} \text{"lemma x*0=0}(\mathbb{R})\text{fff}"]$
 $[\text{SignNumerical}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma signNumerical}(\mathbb{R})"]$
 $[\text{NumericalDifference}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma numericalDifference}(\mathbb{R})"]$
 $[\mathbf{x} \leq |\mathbf{x}|(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma x<=|x|}(\mathbb{R})"]$
 $[\text{USlimitIsUpperBound}(\text{Helper}) \xrightarrow{\text{pyk}} \text{"lemma USlimitIsUpperBound helper"}]$
 $[\text{USlimitIsUpperBound} \xrightarrow{\text{pyk}} \text{"lemma USlimitIsUpperBound"}]$
 $[\mathbf{(-1) * (-1) + (-1) * 1 = 0}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma (-1)*(-1)+(-1)*1=0}(\mathbb{R})"]$
 $[\mathbf{(-1) * (-1) = 1}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma (-1)*(-1)=1}(\mathbb{R})"]$
 $[\mathbf{0 < 1}(\text{Helper}(\mathbb{R})) \xrightarrow{\text{pyk}} \text{"lemma 0<1Helper}(\mathbb{R})"]$
 $[\mathbf{0 < 1}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma 0<1}(\mathbb{R})"]$
 $[\text{ExpZero}(\text{Exact})(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma expZero exact}(\mathbb{R})"]$
 $[\text{PositiveBase}(\mathbb{R})(\text{Base}) \xrightarrow{\text{pyk}} \text{"lemma positiveBase}(\mathbb{R}) \text{ base}"]$
 $[\text{Three2twoFactors}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma three2twoFactors}(\mathbb{R})"]$
 $[\mathbf{x = x * y * (1/y)}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma x=x*y*(1/y)}(\mathbb{R})"]$
 $[\text{NeqMultiplication}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma neqMultiplication}(\mathbb{R})"]$
 $[\text{LessTransitivity}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma lessTransitivity}(\mathbb{R})"]$
 $[\mathbf{0 < 2}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma 0<2}(\mathbb{R})"]$
 $[\text{SameExp}(\mathbb{R})(\text{Base}) \xrightarrow{\text{pyk}} \text{"lemma sameExp}(\mathbb{R}) \text{ base}"]$
 $[\text{SameExp}(\mathbb{R})(\text{Indu}) \xrightarrow{\text{pyk}} \text{"lemma sameExp}(\mathbb{R}) \text{ indu}"]$
 $[\text{SameExp}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma sameExp}(\mathbb{R})"]$
 $[\text{SubNeqLeft}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma subNeqLeft}(\mathbb{R})"]$
 $[\text{SubNeqRight}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma subNeqRight}(\mathbb{R})"]$
 $[\text{NonzeroFactors}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma nonzeroFactors}(\mathbb{R})"]$
 $[\text{NonnegativeFactors}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma nonnegativeFactors}(\mathbb{R})"]$
 $[\text{PositiveFactors}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma positiveFactors}(\mathbb{R})"]$
 $[\text{LessDivision}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma lessDivision}(\mathbb{R})"]$
 $[\mathbf{0 < 1/2}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma 0<1/2}(\mathbb{R})"]$
 $[\text{PositiveToRight}(\text{Eq})(\text{1term})(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma positiveToRight}(\text{Eq})(\text{1 term})(\mathbb{R})"]$
 $[\text{Exp}(+1)(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma exp}(+1)(\mathbb{R})"]$

[PositiveBase(R)(Indu) $\xrightarrow{\text{pyk}}$ “lemma positiveBase(R) indu”]
 [PositiveBase(R) $\xrightarrow{\text{pyk}}$ “lemma positiveBase(R)”]
 [-x * y = -(x * y)(R) $\xrightarrow{\text{pyk}}$ “lemma -x*y=-(x*y)(R)”]
 [PositiveToLeft(Eq)(R) $\xrightarrow{\text{pyk}}$ “lemma positiveToLeft(Eq)(R)”]
 [Times1Left(R) $\xrightarrow{\text{pyk}}$ “lemma times1Left(R)”]
 [x + x = 2 * x(R) $\xrightarrow{\text{pyk}}$ “lemma x+x=2*x(R)”]
 [(1/2)x + (1/2)x = x(R) $\xrightarrow{\text{pyk}}$ “lemma (1/2)x+(1/2)x=x(R)”]
 [DistributionOut(Minus)(R) $\xrightarrow{\text{pyk}}$ “lemma distributionOut(Minus)(R)”]
 [(1/2)(x + y) - x = (1/2)(y - x)(R) $\xrightarrow{\text{pyk}}$ “lemma (1/2)(x+y)-x=(1/2)(y-x)(R)”]
 [IntervalSize(R)(Base) $\xrightarrow{\text{pyk}}$ “lemma intervalSize(R) base”]
 [LessMultiplicationLeft(R) $\xrightarrow{\text{pyk}}$ “lemma lessMultiplicationLeft(R)”]
 [NegativeToLeft(Less)(R) $\xrightarrow{\text{pyk}}$ “lemma negativeToLeft(Less)(R)”]
 [NegativeToLeft(Less)(1term)(R) $\xrightarrow{\text{pyk}}$ “lemma negativeToLeft(Less)(1 term)(R)”]
 [y - (1/2)(x + y) = (1/2)(y - x)(R) $\xrightarrow{\text{pyk}}$ “lemma y-(1/2)(x+y)=(1/2)(y-x)(R)”]
 [IntervalSize(R)(Indu) $\xrightarrow{\text{pyk}}$ “lemma intervalSize(R) indu”]
 [IntervalSize(R) $\xrightarrow{\text{pyk}}$ “lemma intervalSize(R)”]
 [XSlessUS(R) $\xrightarrow{\text{pyk}}$ “lemma XSlessUS(R)”]
 [USdecreasing(+1)(R) $\xrightarrow{\text{pyk}}$ “lemma USdecreasing(+1)(R)”]
 [ExpUnbounded(Base) $\xrightarrow{\text{pyk}}$ “lemma expUnbounded base”]
 [ExpUnbounded(Indu) $\xrightarrow{\text{pyk}}$ “lemma expUnbounded indu”]
 [ExpUnbounded $\xrightarrow{\text{pyk}}$ “lemma expUnbounded”]
 [1 <= x + 1(N) $\xrightarrow{\text{pyk}}$ “lemma 1<=x+1(N)”]
 [ExpNonzero(Base) $\xrightarrow{\text{pyk}}$ “lemma expNonzero base”]
 [ExpNonzero(Indu) $\xrightarrow{\text{pyk}}$ “lemma expNonzero indu”]
 [ExpNonzero $\xrightarrow{\text{pyk}}$ “lemma expNonzero”]
 [ExpNonzero(2) $\xrightarrow{\text{pyk}}$ “lemma expNonzero(2)”]
 [HalfBase(Base) $\xrightarrow{\text{pyk}}$ “lemma halfBase base”]
 [HalfBase(Indu) $\xrightarrow{\text{pyk}}$ “lemma halfBase indu”]
 [MultiplyEquations(R) $\xrightarrow{\text{pyk}}$ “lemma multiplyEquations(R)”]
 [NonreciprocalToRight(Eq)(1term)(R) $\xrightarrow{\text{pyk}}$ “lemma nonreciprocalToRight(Eq)(1 term)(R)”]
 [PositiveNonzero(R) $\xrightarrow{\text{pyk}}$ “lemma positiveNonzero(R)”]
 [NonzeroProduct(2)(R) $\xrightarrow{\text{pyk}}$ “lemma nonzeroProduct(2)(R)”]
 [HalfBase $\xrightarrow{\text{pyk}}$ “lemma halfBase”]
 [Three2threeFactors(R) $\xrightarrow{\text{pyk}}$ “lemma three2threeFactors(R)”]

$[x * y = z \text{Backwards}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma } x*y=z \text{Backwards}(\mathbb{R})"]$
 $[\text{PositiveInverted}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma positiveInverted}(\mathbb{R})"]$
 $[\text{ReciprocalToRight}(\text{Less})(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma reciprocalToRight}(\text{Less})(\mathbb{R})"]$
 $[\text{ReciprocalToRight}(\text{Less})(1\text{term})(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma reciprocalToRight}(\text{Less})(1\text{term})(\mathbb{R})"]$
 $[\text{NonreciprocalToLeft}(\text{Less})(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma nonreciprocalToLeft}(\text{Less})(\mathbb{R})"]$
 $[1 < x * y(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma } 1<x*y(\mathbb{R})"]$
 $[\text{SwitchFactors}(1/x < y)(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma switchFactors}(1/x<y)(\mathbb{R})"]$
 $[\text{SmallHalving} \xrightarrow{\text{pyk}} \text{"lemma smallHalving"}]$
 $[\text{IntervalSize}(\text{anyPositive}) \xrightarrow{\text{pyk}} \text{"lemma intervalSize}(\text{anyPositive})"]$
 $[\text{USdecreasing}(+n)(\text{Base}) \xrightarrow{\text{pyk}} \text{"lemma USdecreasing}(+n) \text{ base}"]$
 $[\text{USdecreasing}(+n)(\text{Indu}) \xrightarrow{\text{pyk}} \text{"lemma USdecreasing}(+n) \text{ indu}"]$
 $[\text{USdecreasing}(+n) \xrightarrow{\text{pyk}} \text{"lemma USdecreasing}(+n)"]$
 $[\text{USdecreasing} \xrightarrow{\text{pyk}} \text{"lemma USdecreasing"}]$
 $[\text{LeqAdditionLeft}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma leqAdditionLeft}(\mathbb{R})"]$
 $[\text{ToNotLess}(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma toNotLess}(\mathbb{R})"]$
 $[\text{LimitOfUSIsLeq} \xrightarrow{\text{pyk}} \text{"lemma limitOfUSIsLeq"}]$
 $[\text{SubtractEquations}(\text{Less})(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma subtractEquations}(\text{Less})(\mathbb{R})"]$
 $[\text{SubtractEquationsLeft}(\text{Less})(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma subtractEquationsLeft}(\text{Less})(\mathbb{R})"]$
 $[\text{LessNegated}(\text{Negative})(\mathbb{R}) \xrightarrow{\text{pyk}} \text{"lemma lessNegated}(\text{Negative})(\mathbb{R})"]$
 $[\text{FromNegatedAnd}(\text{Imply}) \xrightarrow{\text{pyk}} \text{"prop lemma from negated and (imply)"}]$
 $[\text{RemoveDoubleNeg}(\text{Consequent}) \xrightarrow{\text{pyk}} \text{"prop lemma remove double neg (consequent)"}]$
 $[\text{FromNotUpperBound} \xrightarrow{\text{pyk}} \text{"lemma fromNotUpperBound"}]$
 $[\text{LeqNUB} \xrightarrow{\text{pyk}} \text{"lemma leqNUB"}]$
 $[\text{USlimitIsLeastUpperBound}(\text{Helper}) \xrightarrow{\text{pyk}} \text{"lemma USlimitIsLeastUpperBound helper"}]$
 $[\text{USlimitIsLeastUpperBound} \xrightarrow{\text{pyk}} \text{"lemma USlimitIsLeastUpperBound"}]$
 $[\text{ExistMP3} \xrightarrow{\text{pyk}} \text{"pred lemma exist mp3"}]$
 $[\text{GreaterPositive}(N) \xrightarrow{\text{pyk}} \text{"lemma greaterPositive}(N)"]$
 $[\text{ysFClose}(\text{Helper}) \xrightarrow{\text{pyk}} \text{"lemma ysFClose helper"}]$
 $[\text{ysFClose} \xrightarrow{\text{pyk}} \text{"lemma ysFClose"}]$
 $[\text{ysFCAuchy}(\text{Helper}) \xrightarrow{\text{pyk}} \text{"lemma ysFCAuchy helper"}]$
 $[\text{ysFCAuchy} \xrightarrow{\text{pyk}} \text{"lemma ysFCAuchy"}]$
 $[\text{from } <<== \xrightarrow{\text{pyk}} \text{"lemma from } <<=="}]$

[to <<==^{pyk}→ “lemma to<<==”]
[NonnegativeNumerical(F) ^{pyk}→ “lemma nonnegativeNumerical(F)”]
[NegativeNumerical(F) ^{pyk}→ “lemma negativeNumerical(F)”]
[tester1 ^{pyk}→ “tester1”]
[tester2 ^{pyk}→ “tester2”]
[tester3 ^{pyk}→ “tester3”]
[tester4 ^{pyk}→ “tester4”]
[tester5 ^{pyk}→ “tester5”]
[tester6 ^{pyk}→ “tester6”]
[sup2 ^{pyk}→ “sup2”]

[sup2 $\xrightarrow{\text{tex}}$ “sup2”]

[LeqTotality(R) $\xrightarrow{\text{tex}}$ “LeqTotality(R)”]

[PositiveToLeft(Eq) $\xrightarrow{\text{tex}}$ “PositiveToLeft(Eq)”]

[ExpZero(Exact) $\xrightarrow{\text{tex}}$ “ExpZero(Exact) ”]

[(+1)IsPositive(N) $\xrightarrow{\text{tex}}$ “(+1)IsPositive(N)”]

[SameExp(Base) $\xrightarrow{\text{tex}}$ “SameExp(Base)”]

[SameExp(Indu) $\xrightarrow{\text{tex}}$ “SameExp(Indu)”]

[SameExp $\xrightarrow{\text{tex}}$ “SameExp”]

[Exp(+1) $\xrightarrow{\text{tex}}$ “Exp(+1)”]

[DistributionOut(Minus) $\xrightarrow{\text{tex}}$ “DistributionOut(Minus)”]

[(1/2)(x + y) - x = (1/2)(y - x) $\xrightarrow{\text{tex}}$ “(1/2)(x+y)-x=(1/2)(y-x)”]

[y - (1/2)(x + y) = (1/2)(y - x) $\xrightarrow{\text{tex}}$ “y-(1/2)(x+y)=(1/2)(y-x)”]

[PositiveBase(Base) $\xrightarrow{\text{tex}}$ “PositiveBase(Base)”]

[PositiveBase(Indu) $\xrightarrow{\text{tex}}$ “PositiveBase(Indu)”]

[PositiveBase $\xrightarrow{\text{tex}}$ “PositiveBase”]

[PositiveToRight(Eq)(1term) $\xrightarrow{\text{tex}}$ “PositiveToRight(Eq)(1 term)”]

[BSzero(Exact) $\xrightarrow{\text{tex}}$ “BSzero(Exact)”]

[SameBS(2)(Base) $\xrightarrow{\text{tex}}$ “SameBS(2)(Base)”]

[SameBS(2)(Indu) $\xrightarrow{\text{tex}}$ “SameBS(2)(Indu)”]

[SameBS(2) $\xrightarrow{\text{tex}}$ “SameBS(2)”]

[NegativeToLeft(Less)(1term) $\xrightarrow{\text{tex}}$ “NegativeToLeft(Less)(1 term)”]

[BS(+1) $\xrightarrow{\text{tex}}$ “BS(+1)”]

[BSbound(Exact)(Base) $\xrightarrow{\text{tex}}$ “BSbound(Exact)(Base)”]

[BSbound(Exact)(Indu) $\xrightarrow{\text{tex}}$ “BSbound(Exact)(Indu)”]

[BSbound(Exact) $\xrightarrow{\text{tex}}$ “BSbound(Exact)”]

[BSbound $\xrightarrow{\text{tex}}$ "BSbound"]

[SameSeries(NumDiff) $\xrightarrow{\text{tex}}$ "SameSeries(NumDiff)"]

[UStelescope(Zero)(Exact) $\xrightarrow{\text{tex}}$ "UStelescope(Zero)(Exact)"]

[SameTelescope(2)(Base) $\xrightarrow{\text{tex}}$ "SameTelescope(2)(Base)"]

[SameTelescope(2)(Indu) $\xrightarrow{\text{tex}}$ "SameTelescope(2)(Indu)"]

[SameTelescope(2) $\xrightarrow{\text{tex}}$ "SameTelescope(2)"]

[TelescopeNumerical(Base) $\xrightarrow{\text{tex}}$ "TelescopeNumerical(Base)"]

[TelescopeNumerical(Indu) $\xrightarrow{\text{tex}}$ "TelescopeNumerical(Indu)"]

[TelescopeNumerical $\xrightarrow{\text{tex}}$ "TelescopeNumerical"]

[ToNegatedDoubleImPLY $\xrightarrow{\text{tex}}$ "ToNegatedDoubleImPLY"]

[EqAdditionLeft(R) $\xrightarrow{\text{tex}}$ "EqAdditionLeft(R)"]

[$x = x + (y - y)(R)$ $\xrightarrow{\text{tex}}$ " $x=x+(y-y)(R)$ "]

[$x = x + y - y(R)$ $\xrightarrow{\text{tex}}$ " $x=x+y-y(R)$ "]

[Three2twoTerms(R) $\xrightarrow{\text{tex}}$ "Three2twoTerms(R)"]

[PositiveToRight(Less)(R) $\xrightarrow{\text{tex}}$ "PositiveToRight(Less)(R)"]

[Three2threeTerms(R) $\xrightarrow{\text{tex}}$ "Three2threeTerms(R)"]

[Plus0Left(R) $\xrightarrow{\text{tex}}$ "Plus0Left(R)"]

[PositiveToRight(Eq)(R) $\xrightarrow{\text{tex}}$ "PositiveToRight(Eq)(R)"]

[SubtractEquations(R) $\xrightarrow{\text{tex}}$ "SubtractEquations(R)"]

[NeqAddition(R) $\xrightarrow{\text{tex}}$ "NeqAddition(R)"]

[PositiveToRight(Less)(R) $\xrightarrow{\text{tex}}$ "PositiveToRight(Less)(R)"]

[PositiveToRight(Less)(1term)(R) $\xrightarrow{\text{tex}}$ "PositiveToRight(Less)(1 term)(R)"]

[To!! == $\xrightarrow{\text{tex}}$ "To!!=="]

[SwitchTerms($x \leq y - z$) $\xrightarrow{\text{tex}}$ "SwitchTerms($x \leq y-z$)"]

[(A)to(E)(ImPLY) $\xrightarrow{\text{tex}}$ "(A)to(~E~)(ImPLY)"]

[$(E) \text{to} (A) (\text{Imply}) \xrightarrow{\text{tex}} \text{“}(E) \text{to} (\sim A) (\text{Imply})\text{”}$]

[$(E) \text{to} (A) (\text{Imply}) \xrightarrow{\text{tex}} \text{“}(E) \text{to} (\sim A) (\text{Imply})\text{”}$]

[$\text{AddNegatedAll} \xrightarrow{\text{tex}} \text{“AddNegatedAll”}$]

[$\text{ToNegatedAEA} \xrightarrow{\text{tex}} \text{“ToNegatedAEA ”}$]

[$\text{LessNeq}(F) (\text{Helper}) \xrightarrow{\text{tex}} \text{“LessNeq}(F) (\text{Helper})\text{”}$]

[$\text{LessNeq}(F) \xrightarrow{\text{tex}} \text{“LessNeq}(F)\text{”}$]

[$\text{LessNeq}(R) \xrightarrow{\text{tex}} \text{“LessNeq}(R)\text{”}$]

[$\text{PositiveToRight}(\text{Less})(1\text{term}) \xrightarrow{\text{tex}} \text{“PositiveToRight}(\text{Less})(1\text{ term})\text{”}$]

[$(A) \text{to} (E) \xrightarrow{\text{tex}} \text{“}(A) \text{to} (\sim E)\text{”}$]

[$\text{ToLeq}(\text{Advanced})(R) \xrightarrow{\text{tex}} \text{“ToLeq}(\text{Advanced})(R)\text{”}$]

[$\text{LeqNeqLess}(R) \xrightarrow{\text{tex}} \text{“LeqNeqLess}(R)\text{”}$]

[$\text{SubLeqLeft}(R) \xrightarrow{\text{tex}} \text{“SubLeqLeft}(R)\text{”}$]

[$\text{LeqLessTransitivity}(R) \xrightarrow{\text{tex}} \text{“LeqLessTransitivity}(R)\text{”}$]

[$\text{NegativeToLeft}(\text{Eq})(R) \xrightarrow{\text{tex}} \text{“NegativeToLeft}(\text{Eq})(R)\text{”}$]

[$\text{NegativeToRight}(\text{Less})(R) \xrightarrow{\text{tex}} \text{“NegativeToRight}(\text{Less})(R)\text{”}$]

[$!! == \text{Symmetry} \xrightarrow{\text{tex}} \text{“}!! == \text{Symmetry}\text{”}$]

[$\text{NegativeToRight}(\text{Eq})(R) \xrightarrow{\text{tex}} \text{“NegativeToRight}(\text{Eq})(R)\text{”}$]

[$\text{NegativeToRight}(\text{Eq})(1\text{term})(R) \xrightarrow{\text{tex}} \text{“NegativeToRight}(\text{Eq})(1\text{ term})(R)\text{”}$]

[$\text{DoubleMinus}(R) \xrightarrow{\text{tex}} \text{“DoubleMinus}(R)\text{”}$]

[$\text{UniqueNegative}(R) \xrightarrow{\text{tex}} \text{“UniqueNegative}(R)\text{”}$]

[$\text{SubtractEquationsLeft}(R) \xrightarrow{\text{tex}} \text{“SubtractEquationsLeft}(R)\text{”}$]

[$\text{EqNegated}(R) \xrightarrow{\text{tex}} \text{“EqNegated}(R)\text{”}$]

[$\text{NeqNegated}(R) \xrightarrow{\text{tex}} \text{“NeqNegated}(R)\text{”}$]

[$\text{SubLeqRight}(R) \xrightarrow{\text{tex}} \text{“SubLeqRight}(R)\text{”}$]

[$\text{LeqNegated}(R) \xrightarrow{\text{tex}} \text{“LeqNegated}(R)\text{”}$]

$[LessNegated(R) \xrightarrow{\text{tex}} \text{“LessNegated(R)”}]$
 $[-0 = 0(R) \xrightarrow{\text{tex}} \text{“-0=0(R)”}]$
 $[NegativeNegated(R) \xrightarrow{\text{tex}} \text{“NegativeNegated(R)”}]$
 $[FromLeqGeq(R) \xrightarrow{\text{tex}} \text{“FromLeqGeq(R)”}]$
 $[FromLess(R) \xrightarrow{\text{tex}} \text{“FromLess(R)”}]$
 $[NonnegativeNumerical(R) \xrightarrow{\text{tex}} \text{“NonnegativeNumerical(R)”}]$
 $[NegativeNumerical(R) \xrightarrow{\text{tex}} \text{“NegativeNumerical(R)”}]$
 $[0 \leq |x|(R) \xrightarrow{\text{tex}} \text{“0<=|x|(R)”}]$
 $[PositiveNegated(R) \xrightarrow{\text{tex}} \text{“PositiveNegated(R)”}]$
 $[AddEquations(R) \xrightarrow{\text{tex}} \text{“AddEquations(R)”}]$
 $[DistributionOut(R) \xrightarrow{\text{tex}} \text{“DistributionOut(R)”}]$
 $[x * 0 + x = x(R) \xrightarrow{\text{tex}} \text{“x*0+x=x(R)”}]$
 $[x * 0 = 0(R)(\text{fff}) \xrightarrow{\text{tex}} \text{“x*0=0(R)(fff)”}]$
 $[Times(-1)(R) \xrightarrow{\text{tex}} \text{“Times(-1)(R)”}]$
 $[Times(-1)Left(R) \xrightarrow{\text{tex}} \text{“Times(-1)Left(R)”}]$
 $[-x - y = -(x + y)(R) \xrightarrow{\text{tex}} \text{“-x-y=-(x+y)(R)”}]$
 $[LessTotality(R) \xrightarrow{\text{tex}} \text{“LessTotality(R)”}]$
 $[SameNumerical(R) \xrightarrow{\text{tex}} \text{“SameNumerical(R)”}]$
 $[MinusNegated(R) \xrightarrow{\text{tex}} \text{“MinusNegated(R)”}]$
 $[PositiveNumerical(R) \xrightarrow{\text{tex}} \text{“PositiveNumerical(R)”}]$
 $[SignNumerical(+)(R) \xrightarrow{\text{tex}} \text{“SignNumerical(+)(R)”}]$
 $[SignNumerical(R) \xrightarrow{\text{tex}} \text{“SignNumerical(R)”}]$
 $[NumericalDifference(R) \xrightarrow{\text{tex}} \text{“NumericalDifference(R)”}]$
 $[x \leq |x|(R) \xrightarrow{\text{tex}} \text{“x<=|x|(R)”}]$
 $[USlimitIsUpperBound(Helper) \xrightarrow{\text{tex}} \text{“USlimitIsUpperBound(Helper)”}]$

[USlimitIsUpperBound $\xrightarrow{\text{tex}}$ “USlimitIsUpperBound”]

[(-1) * (-1) + (-1) * 1 = 0(R) $\xrightarrow{\text{tex}}$ “(-1)*(-1)+(-1)*1=0(R)”]

[(-1) * (-1) = 1(R) $\xrightarrow{\text{tex}}$ “(-1)*(-1)=1(R)”]

[0 < 1Helper(R) $\xrightarrow{\text{tex}}$ “0<1Helper(R)”]

[0 < 1(R) $\xrightarrow{\text{tex}}$ “0<1(R)”]

[ExpZero(Exact)(R) $\xrightarrow{\text{tex}}$ “ExpZero(Exact)(R)”]

[PositiveBase(R)(Base) $\xrightarrow{\text{tex}}$ “PositiveBase(R)(Base)”]

[Three2twoFactors(R) $\xrightarrow{\text{tex}}$ “Three2twoFactors(R)”]

[x = x * y * (1/y)(R) $\xrightarrow{\text{tex}}$ “x=x*y*(1/y)(R)”]

[NeqMultiplication(R) $\xrightarrow{\text{tex}}$ “NeqMultiplication(R)”]

[LessTransitivity(R) $\xrightarrow{\text{tex}}$ “LessTransitivity(R)”]

[0 < 2(R) $\xrightarrow{\text{tex}}$ “0<2(R)”]

[SameExp(R)(Base) $\xrightarrow{\text{tex}}$ “SameExp(R)(Base)”]

[SameExp(R)(Indu) $\xrightarrow{\text{tex}}$ “SameExp(R)(Indu)”]

[SameExp(R) $\xrightarrow{\text{tex}}$ “SameExp(R)”]

[SubNeqLeft(R) $\xrightarrow{\text{tex}}$ “SubNeqLeft(R)”]

[SubNeqRight(R) $\xrightarrow{\text{tex}}$ “SubNeqRight(R)”]

[NonzeroFactors(R) $\xrightarrow{\text{tex}}$ “NonzeroFactors(R)”]

[NonnegativeFactors(R) $\xrightarrow{\text{tex}}$ “NonnegativeFactors(R)”]

[PositiveFactors(R) $\xrightarrow{\text{tex}}$ “PositiveFactors(R)”]

[LessDivision(R) $\xrightarrow{\text{tex}}$ “LessDivision(R)”]

[0 < 1/2(R) $\xrightarrow{\text{tex}}$ “0<1/2(R)”]

[PositiveToRight(Eq)(1term)(R) $\xrightarrow{\text{tex}}$ “PositiveToRight(Eq)(1 term)(R)”]

[Exp(+1)(R) $\xrightarrow{\text{tex}}$ “Exp(+1)(R)”]

[PositiveBase(R)(Indu) $\xrightarrow{\text{tex}}$ “PositiveBase(R)(Indu)”]

$[\text{PositiveBase}(\mathbb{R}) \xrightarrow{\text{tex}} \text{"PositiveBase}(\mathbb{R})"]$
 $[-x * y = -(x * y)(\mathbb{R}) \xrightarrow{\text{tex}} \text{"-x*y=-(x*y)(\mathbb{R})"}]$
 $[\text{PositiveToLeft}(\text{Eq})(\mathbb{R}) \xrightarrow{\text{tex}} \text{"PositiveToLeft}(\text{Eq})(\mathbb{R})"]$
 $[\text{Times1Left}(\mathbb{R}) \xrightarrow{\text{tex}} \text{"Times1Left}(\mathbb{R})"]$
 $[x + x = 2 * x(\mathbb{R}) \xrightarrow{\text{tex}} \text{"x+x=2*x(\mathbb{R})"}]$
 $[(1/2)x + (1/2)x = x(\mathbb{R}) \xrightarrow{\text{tex}} \text{"(1/2)x+(1/2)x=x(\mathbb{R})"}]$
 $[\text{DistributionOut}(\text{Minus})(\mathbb{R}) \xrightarrow{\text{tex}} \text{"DistributionOut}(\text{Minus})(\mathbb{R})"]$
 $[(1/2)(x + y) - x = (1/2)(y - x)(\mathbb{R}) \xrightarrow{\text{tex}} \text{"(1/2)(x+y)-x=(1/2)(y-x)(\mathbb{R})"}]$
 $[\text{IntervalSize}(\mathbb{R})(\text{Base}) \xrightarrow{\text{tex}} \text{"IntervalSize}(\mathbb{R})(\text{Base})"]$
 $[\text{LessMultiplicationLeft}(\mathbb{R}) \xrightarrow{\text{tex}} \text{"LessMultiplicationLeft}(\mathbb{R})"]$
 $[\text{NegativeToLeft}(\text{Less})(\mathbb{R}) \xrightarrow{\text{tex}} \text{"NegativeToLeft}(\text{Less})(\mathbb{R})"]$
 $[\text{NegativeToLeft}(\text{Less})(1\text{term})(\mathbb{R}) \xrightarrow{\text{tex}} \text{"NegativeToLeft}(\text{Less})(1\text{ term})(\mathbb{R})"]$
 $[y - (1/2)(x + y) = (1/2)(y - x)(\mathbb{R}) \xrightarrow{\text{tex}} \text{"y-(1/2)(x+y)=(1/2)(y-x)(\mathbb{R})"}]$
 $[\text{IntervalSize}(\mathbb{R})(\text{Indu}) \xrightarrow{\text{tex}} \text{"IntervalSize}(\mathbb{R})(\text{Indu})"]$
 $[\text{IntervalSize}(\mathbb{R}) \xrightarrow{\text{tex}} \text{"IntervalSize}(\mathbb{R})"]$
 $[\text{XSlessUS}(\mathbb{R}) \xrightarrow{\text{tex}} \text{"XSlessUS}(\mathbb{R})"]$
 $[\text{USdecreasing}(+1)(\mathbb{R}) \xrightarrow{\text{tex}} \text{"USdecreasing}(+1)(\mathbb{R})"]$
 $[1 \leq x + 1(\mathbb{N}) \xrightarrow{\text{tex}} \text{"1<=x+1(\mathbb{N})"}]$
 $[\text{ExpUnbounded}(\text{Base}) \xrightarrow{\text{tex}} \text{"ExpUnbounded}(\text{Base})"]$
 $[\text{ExpUnbounded}(\text{Indu}) \xrightarrow{\text{tex}} \text{"ExpUnbounded}(\text{Indu})"]$
 $[\text{ExpUnbounded} \xrightarrow{\text{tex}} \text{"ExpUnbounded"}]$
 $[\text{NonzeroProduct}(2)(\mathbb{R}) \xrightarrow{\text{tex}} \text{"NonzeroProduct}(2)(\mathbb{R})"]$
 $[\text{PositiveNonzero}(\mathbb{R}) \xrightarrow{\text{tex}} \text{"PositiveNonzero}(\mathbb{R})"]$
 $[\text{NonreciprocalToRight}(\text{Eq})(1\text{term})(\mathbb{R}) \xrightarrow{\text{tex}} \text{"NonreciprocalToRight}(\text{Eq})(1\text{ term})(\mathbb{R})"}]$

[ExpNonzero(Base) $\xrightarrow{\text{tex}}$ “ExpNonzero(Base)”]

[ExpNonzero(Indu) $\xrightarrow{\text{tex}}$ “ExpNonzero(Indu)”]

[ExpNonzero $\xrightarrow{\text{tex}}$ “ExpNonzero”]

[MultiplyEquations(R) $\xrightarrow{\text{tex}}$ “MultiplyEquations(R)”]

[ExpNonzero(2) $\xrightarrow{\text{tex}}$ “ExpNonzero(2)”]

[HalfBase(Base) $\xrightarrow{\text{tex}}$ “HalfBase(Base)”]

[HalfBase(Indu) $\xrightarrow{\text{tex}}$ “HalfBase(Indu)”]

[HalfBase $\xrightarrow{\text{tex}}$ “HalfBase”]

[Three2threeFactors(R) $\xrightarrow{\text{tex}}$ “Three2threeFactors(R)”]

[x * y = zBackwards(R) $\xrightarrow{\text{tex}}$ “x*y=zBackwards(R)”]

[PositiveInverted(R) $\xrightarrow{\text{tex}}$ “PositiveInverted(R)”]

[ReciprocalToRight(Less)(R) $\xrightarrow{\text{tex}}$ “ReciprocalToRight(Less)(R)”]

[ReciprocalToRight(Less)(1term)(R) $\xrightarrow{\text{tex}}$ “ReciprocalToRight(Less)(1term)(R)”]

[NonreciprocalToLeft(Less)(R) $\xrightarrow{\text{tex}}$ “NonreciprocalToLeft(Less)(R)”]

[1 < x * y(R) $\xrightarrow{\text{tex}}$ “1<x*y(R)”]

[SwitchFactors(1/x < y)(R) $\xrightarrow{\text{tex}}$ “SwitchFactors(1/x<y)(R)”]

[SmallHalving $\xrightarrow{\text{tex}}$ “SmallHalving”]

[IntervalSize(anyPositive) $\xrightarrow{\text{tex}}$ “IntervalSize(anyPositive)”]

[USdecreasing(+n)(Base) $\xrightarrow{\text{tex}}$ “USdecreasing(+n)(Base)”]

[USdecreasing(+n)(Indu) $\xrightarrow{\text{tex}}$ “USdecreasing(+n)(Indu)”]

[USdecreasing(+n) $\xrightarrow{\text{tex}}$ “USdecreasing(+n)”]

[USdecreasing $\xrightarrow{\text{tex}}$ “USdecreasing”]

[LeqAdditionLeft(R) $\xrightarrow{\text{tex}}$ “LeqAdditionLeft(R)”]

[ToNotLess(R) $\xrightarrow{\text{tex}}$ “ToNotLess(R)”]

[LimitOfUSIsLeq $\xrightarrow{\text{tex}}$ “LimitOfUSIsLeq”]

[SubtractEquations(Less)(R) $\xrightarrow{\text{tex}}$ “SubtractEquations(Less)(R)”]

[SubtractEquationsLeft(Less)(R) $\xrightarrow{\text{tex}}$ “SubtractEquationsLeft(Less)(R)”]

[LessNegated(Negative)(R) $\xrightarrow{\text{tex}}$ “LessNegated(Negative)(R)”]

[FromNegatedAnd(ImPLY) $\xrightarrow{\text{tex}}$ “FromNegatedAnd(ImPLY)”]

[RemoveDoubleNeg(Consequent) $\xrightarrow{\text{tex}}$ “RemoveDoubleNeg(Consequent)”]

[FromNotUpperBound $\xrightarrow{\text{tex}}$ “FromNotUpperBound”]

[LeqNUB $\xrightarrow{\text{tex}}$ “LeqNUB”]

[USlimitIsLeastUpperBound(Helper) $\xrightarrow{\text{tex}}$
“USlimitIsLeastUpperBound(Helper)”]

[USlimitIsLeastUpperBound $\xrightarrow{\text{tex}}$ “USlimitIsLeastUpperBound”]

[ExistMP3 $\xrightarrow{\text{tex}}$ “ExistMP3”]

[GreaterPositive(N) $\xrightarrow{\text{tex}}$ “GreaterPositive(N)”]

[ysFClose(Helper) $\xrightarrow{\text{tex}}$ “ysFClose(Helper)”]

[ysFClose $\xrightarrow{\text{tex}}$ “ysFClose”]

[ysFCAuchy(Helper) $\xrightarrow{\text{tex}}$ “ysFCAuchy(Helper)”]

[ysFCAuchy $\xrightarrow{\text{tex}}$ “ysFCAuchy”]

[from <<== $\xrightarrow{\text{tex}}$ “from<<==”]

[NonnegativeNumerical(F) $\xrightarrow{\text{tex}}$ “NonnegativeNumerical(F)”]

[to <<== $\xrightarrow{\text{tex}}$ “to<<==”]

[NegativeNumerical(F) $\xrightarrow{\text{tex}}$ “NegativeNumerical(F)”]