

$$\Omega = \langle ; +^{(2)}, *^{(2)}, 0^{(0)}, 1^{(0)} \rangle \quad \mathfrak{A} = (\omega, +, *, 0, 1)$$

$$1) (\exists u) x \approx u * u \wedge (\exists u)(\exists v)(u * v \approx y \rightarrow (u \approx 1 \vee v \approx 1))$$

$$2) (\exists u)(x + u \approx y \wedge \neg(u \approx 0))$$

$$3) (\exists u) z * u \approx x \wedge (\exists u) z * u \approx y$$

$$4) (\forall u)(\neg((\exists v)u * v \approx x \wedge (\exists v)u * v \approx y) \wedge \neg(u \approx 0 \vee u \approx 1))$$

$$5) (\forall a)(\forall b)(\forall c)(a + b) * c \approx (a + c) * (b + c)$$

$$6) (\forall u)((\exists v)x + v \approx u) \wedge \neg(\exists a)(\exists b)(a * b \approx u \rightarrow (a \approx 1 \vee b \approx 1))$$