

Peano Arithmetic

$$(\forall x) \sim Sx = 0.$$

$$(\forall x)(\forall y)(Sx = Sy \rightarrow x = y).$$

$$(\forall x)(x + 0) = x.$$

$$(\forall x)(\forall y)(x + Sy) = S(x + y).. 367-392.$$

$$(\forall x)(x \cdot 0) = 0.$$

$$(\forall x)(\forall y)(x \cdot Sy) = ((x \cdot y) + x).$$

$$(\forall x) \sim x < 0.$$

$$\forall x(\forall y)(x < Sy \leftrightarrow (x < y \vee x = y)).$$

Sentences obtained from the following induction axiom schema by substituting an arithmetical formula for “R” and prefixing universal quantifiers to bind any free variables that result:

$$((R0 \wedge (\forall x)(Rx \rightarrow RSx)) \rightarrow (\forall x)Rx)$$

