

t64\_xxreal\_3

(TMaiiaq41FeooLTaXL68f9UQu6S3voh5MojG)

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Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xxreal\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xxreal\_0 : \iota$  be given. Let  $k1\_xxreal\_0 : \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ (v1\_xxreal\_0 X2) \Rightarrow (\neg(X2 \neq k2\_xxreal\_0) \wedge ((X2 \neq k1\_xxreal\_0) \wedge (( \\ \neg r1\_xxreal\_0 X1 X0) \wedge (r1\_xxreal\_0 (k1\_xxreal\_3 X1 X2) (k1\_xxreal\_3 \\ X0 X2)))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (r1\_xxreal\_0 k2\_xxreal\_0 X0) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ (v1\_xxreal\_0 X2) \Rightarrow (\neg(\neg(X0 = k2\_xxreal\_0) \wedge (X1 = k2\_xxreal\_0)) \wedge \\ ((\neg(X1 = k2\_xxreal\_0) \wedge (X2 = k1\_xxreal\_0)) \wedge ((r1\_xxreal\_0 X0 (k1\_xxreal\_3 \\ X2 X1)) \wedge (X1 = k2\_xxreal\_0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow ((r1\_xxreal\_0 k1\_xxreal\_0 X0) \Rightarrow (X0 = k1\_xxreal\_0)) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ (v1\_xxreal\_0 X2) \Rightarrow (\forall X3.(v1\_xxreal\_0 X3) \Rightarrow (((r1\_xxreal\_0 \\ X0 X1) \wedge (r1\_xxreal\_0 X2 X3)) \Rightarrow (r1\_xxreal\_0 (k1\_xxreal\_3 X0 X2) ( \\ k1\_xxreal\_3 X1 X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ (v1\_xxreal\_0 X2) \Rightarrow (((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X2)) \Rightarrow \\ (r1\_xxreal\_0 X0 X2)))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow ((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X0)) \Rightarrow (X0 = X1)) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\neg (k1\_xxreal\_3 X0 X1 = k2\_xxreal\_0) \wedge ((X0 \neq k2\_xxreal\_0) \wedge (X1 \neq k2\_xxreal\_0)))) \quad (8)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2.(v1\_xxreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 X0 X1) \Rightarrow (r1\_xxreal\_0 (k1\_xxreal\_3 X0 X2) (k1\_xxreal\_3 X1 X2))))) \quad (9)$$

Assume the following.

$$v1\_xxreal\_0 k1\_xxreal\_0 \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (v1\_xxreal\_0 (k1\_xxreal\_3 X0 X1)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow ((r1\_xxreal\_0 X0 X1) \vee (r1\_xxreal\_0 X1 X0)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (k1\_xxreal\_3 X0 X1 = k1\_xxreal\_3 X1 X0) \quad (13)$$

**Theorem 1**

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2.(v1\_xxreal\_0 X2) \Rightarrow (\forall X3.(v1\_xxreal\_0 X3) \Rightarrow (\neg (\neg r1\_xxreal\_0 X1 X0) \wedge ((\neg r1\_xxreal\_0 X3 X2) \wedge (r1\_xxreal\_0 (k1\_xxreal\_3 X1 X3) (k1\_xxreal\_3 X0 X2))))))))$$