

t54_xxreal_3

(TMTQvkZkd7BvqBazdTSgSSoUoB1Gc8xq2Ae)

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Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k1_xxreal_0 : \iota$ be given. Let $k2_xxreal_0 : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_xxreal_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xxreal_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (r1_xxreal_0 k2_xxreal_0 X0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (\neg(\neg(X0 = k1_xxreal_0) \wedge (X1 = k2_xxreal_0)) \wedge \\ & ((\neg(X0 = k2_xxreal_0) \wedge (X1 = k1_xxreal_0)) \wedge ((\neg r1_xxreal_0 X2 (\\ & k1_xxreal_3 X0 X1)) \wedge (\neg(X0 \neq k1_xxreal_0) \wedge ((X1 \neq k1_xxreal_0) \wedge \\ & ((X2 \neq k2_xxreal_0) \wedge (\neg r1_xxreal_0 (k3_xxreal_3 X2 X1) X0)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow ((r1_xxreal_0 k1_xxreal_0 X0) \Rightarrow (X0 = k1_xxreal_0)) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow ((v1_xreal_0 X0) \Rightarrow ((r1_xxreal_0 (k1_xxreal_3 \\ & X1 X0) X2) \Leftrightarrow (r1_xxreal_0 X1 (k3_xxreal_3 X2 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (r1_xxreal_0 X0 k1_xxreal_0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow ((\\ & v1_xreal_0 X0) \Rightarrow ((k1_xxreal_3 (k3_xxreal_3 X1 X0) X0 = X1) \wedge (k3_xxreal_3 \\ & (k1_xxreal_3 X1 X0) X0 = X1)))) \end{aligned} \quad (6)$$

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.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow ((X0 \neq k2_xxreal_0) \Rightarrow ((k3_xxreal_3 k2_xxreal_0 X0 = k2_xxreal_0) \wedge (k3_xxreal_3 X0 k2_xxreal_0 = k1_xxreal_0))) \quad (8)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\neg(\neg X0 \in k1_numbers) \wedge ((X0 \neq k1_xxreal_0) \wedge (X0 \neq k2_xxreal_0))) \quad (9)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow ((X0 \neq k1_xxreal_0) \Rightarrow ((k3_xxreal_3 k1_xxreal_0 X0 = k1_xxreal_0) \wedge (k3_xxreal_3 X0 k1_xxreal_0 = k2_xxreal_0))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (r1_xxreal_0 X0 X0) \quad (11)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\neg(k1_xxreal_3 X0 X1 = k1_xxreal_0) \wedge ((X0 \neq k1_xxreal_0) \wedge (X1 \neq k1_xxreal_0)))) \quad (12)$$

Assume the following.

$$v1_xxreal_0 k2_xxreal_0 \quad (13)$$

Assume the following.

$$v1_xxreal_0 k1_xxreal_0 \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (v1_xxreal_0 (k3_xxreal_3 X0 X1)) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (v1_xxreal_0 (k1_xxreal_3 X0 X1)) \quad (16)$$

Assume the following.

$$k1_xxreal_0 = k1_numbers \quad (17)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Leftrightarrow (X0 \in k1_numbers) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (k1_xxreal_3 X0 X1 = k1_xxreal_3 X1 X0) \quad (19)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (20)$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (\neg(\neg(X0 = k1_xxreal_0) \wedge (X1 = k1_xxreal_0)) \wedge \\ & ((\neg(X0 = k2_xxreal_0) \wedge (X1 = k2_xxreal_0)) \wedge ((\neg r1_xxreal_0 X2 (\\ & k3_xxreal_3 X0 X1)) \wedge (\neg(X0 \neq k1_xxreal_0) \wedge ((X1 \neq k2_xxreal_0) \wedge \\ & ((X2 \neq k2_xxreal_0) \wedge (\neg r1_xxreal_0 (k1_xxreal_3 X2 X1) X0)))))))))) \end{aligned}$$