

t41_xxreal_3 (TMQpYhNHg-
pTY2yimZcLKHxAXyCc47vWTaXt)

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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 $k3_xxreal_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xxreal_0 : \iota$ be given. Let $k1_xxreal_0 : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_xxreal_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xxreal_3 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $np_0 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (k1_xxreal_3 X0 (k2_xxreal_3 X0) = k6_numbers) \quad (1)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (2)$$

Assume the following.

$$k2_xxreal_3 k2_xxreal_0 = k1_xxreal_0 \quad (3)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow ((v1_xreal_0 X0) \Rightarrow ((k1_xxreal_3 (k3_xxreal_3 X1 X0) X0 = X1) \wedge (k3_xxreal_3 (k1_xxreal_3 X1 X0) X0 = X1)))) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\neg (k3_xxreal_3 X0 X1 = k2_xxreal_0) \wedge (X0 \neq k2_xxreal_0) \wedge (X1 \neq k1_xxreal_0))) \quad (5)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow ((X0 \neq k2_xxreal_0) \Rightarrow ((k3_xxreal_3 k2_xxreal_0 X0 = k2_xxreal_0) \wedge (k3_xxreal_3 X0 k2_xxreal_0 = k1_xxreal_0))) \quad (6)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\neg(\neg X0 \in k1_numbers) \wedge ((X0 \neq k1_xxreal_0) \wedge (X0 \neq k2_xxreal_0))) \quad (7)$$

Assume the following.

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

Assume the following.

$$v1_xboole_0 np_0 \quad (9)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (10)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2.(v1_xxreal_0 X2) \Rightarrow ((r1_xxreal_0 X0 X1) \Rightarrow (r1_xxreal_0 (k1_xxreal_3 X0 X2) (k1_xxreal_3 X1 X2))))) \quad (11)$$

Assume the following.

$$k2_xxreal_3 k1_xxreal_0 = k2_xxreal_0 \quad (12)$$

Assume the following.

$$\neg r1_xxreal_0 k1_xxreal_0 k2_xxreal_0 \quad (13)$$

Assume the following.

$$v1_xxreal_0 k2_xxreal_0 \quad (14)$$

Assume the following.

$$\neg v1_xxreal_0 k1_xxreal_0 \quad (15)$$

Assume the following.

$$v1_xxreal_0 k1_xxreal_0 \quad (16)$$

Assume the following.

$$\neg v1_xxreal_0 k2_xxreal_0 \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (v1_xxreal_0 (k3_xxreal_3 X0 X1)) \quad (18)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (k3_xxreal_3 X0 X1 = k1_xxreal_3 X0 (k2_xxreal_3 X1))) \quad (19)$$

Assume the following.

$$k1_xxreal_0 = k1_numbers \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow ((\\ ((X0 \in k1_numbers) \wedge (X1 \in k1_numbers)) \Rightarrow ((r1_xxreal_0 X0 X1) \Leftrightarrow (\exists X2. \\ (m1_subset_1 X2 k1_numbers) \wedge (\exists X3.(m1_subset_1 X3 k1_numbers) \wedge \\ ((X2 = X0) \wedge ((X3 = X1) \wedge (r1_xxreal_0 X2 X3)))))) \wedge ((\neg(X0 \in k1_numbers) \wedge \\ (X1 \in k1_numbers)) \Rightarrow ((r1_xxreal_0 X0 X1) \Leftrightarrow ((X0 = k2_xxreal_0) \vee (\\ X1 = k1_xxreal_0)))))) \end{aligned} \quad (21)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Leftrightarrow (X0 \in k1_numbers) \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (\\ k1_xxreal_3 X0 X1 = k1_xxreal_3 X1 X0) \quad (23)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (24)$$

Theorem 1

$$\begin{aligned} \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xxreal_0 X2) \Rightarrow ((r1_xxreal_0 (k3_xxreal_3 X2 X1) X0) \Rightarrow (((X0 = \\ k2_xxreal_0) \wedge ((X1 = k1_xxreal_0) \wedge (\neg r1_xxreal_0 X2 k6_numbers))) \vee \\ (((X0 = k1_xxreal_0) \wedge ((X1 = k2_xxreal_0) \wedge (\neg r1_xxreal_0 X2 k6_numbers))) \vee \\ (r1_xxreal_0 X2 (k1_xxreal_3 X0 X1)))))) \end{aligned}$$