

t42_xxreal_3 (TMTgXiAnKd- kwSpP2U9P76G7h5bdP3zNBHmA)

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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 $k1_xxreal_0 : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k2_xxreal_0 : \iota$ be given. Let $k3_xxreal_3 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $np_0 : \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ 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.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (r1_xxreal_0 k2_xxreal_0 X0) \quad (4)$$

Assume the following.

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

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (r1_xxreal_0 X0 k1_xxreal_0) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 X0 (k2_xcmplx_0 X1 X2)) \Leftrightarrow (r1_xxreal_0 \\ & (k6_xcmplx_0 X0 X1) X2)))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (8)$$

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.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\neg \\ & (X0 \in k1_numbers) \wedge ((r1_xxreal_0 X0 X1) \wedge ((\neg X1 \in k1_numbers) \wedge (X1 \neq \\ & k1_xxreal_0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$v1_xboole_0 np_0 \quad (11)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (12)$$

Assume the following.

$$\exists X0.(v1_xboole_0 X0) \wedge (v1_xxreal_0 X0) \quad (13)$$

Assume the following.

$$\exists X0.(v1_xxreal_0 X0) \wedge ((v2_xxreal_0 X0) \wedge (\neg v1_xreal_0 X0)) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\neg \\ & (k1_xxreal_3 X0 X1 = k1_xxreal_0) \wedge ((X0 \neq k1_xxreal_0) \wedge (X1 \neq k1_xxreal_0)))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (k2_xxreal_3 (k2_xxreal_3 X0) = X0) \quad (16)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1_xreal_0 X0) \wedge \\ & ((v1_xreal_0 X1) \wedge ((v1_xcmplx_0 X2) \wedge (v1_xcmplx_0 X3)))) \Rightarrow (((\\ & X0 = X2) \wedge (X1 = X3)) \Rightarrow (k3_xxreal_3 X0 X1 = k6_xcmplx_0 X2 X3)) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1_xreal_0 X0)\wedge \\ & ((v1_xreal_0 X1)\wedge((v1_xcmplx_0 X2)\wedge(v1_xcmplx_0 X3))))\Rightarrow(((\\ & X0 = X2)\wedge(X1 = X3))\Rightarrow(k1_xxreal_3 X0 X1 = k2_xcmplx_0 X2 X3)) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_xreal_0 X0)\wedge((v1_xxreal_0 X1)\wedge(\neg \\ & v1_xreal_0 X1)))\Rightarrow(\neg v1_xreal_0 (k1_xxreal_3 X0 X1)) \end{aligned} \quad (19)$$

Assume the following.

$$v3_xxreal_0 k2_xxreal_0 \quad (20)$$

Assume the following.

$$v1_xxreal_0 k2_xxreal_0 \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0)\Rightarrow((v1_xxreal_0 (k2_xxreal_3 X0))\wedge \\ & (v1_xreal_0 (k2_xxreal_3 X0))) \end{aligned} \quad (22)$$

Assume the following.

$$v1_xxreal_0 k1_xxreal_0 \quad (23)$$

Assume the following.

$$\neg v1_xreal_0 k2_xxreal_0 \quad (24)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_xxreal_0 X0)\wedge(v3_xxreal_0 X0))\Rightarrow((v1_xxreal_0 \\ & (k2_xxreal_3 X0))\wedge(v2_xxreal_0 (k2_xxreal_3 X0))) \end{aligned} \quad (25)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_xxreal_0 X0)\wedge(\neg v3_xxreal_0 X0))\Rightarrow((v1_xxreal_0 \\ & (k2_xxreal_3 X0))\wedge(\neg v2_xxreal_0 (k2_xxreal_3 X0))) \end{aligned} \quad (26)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow(\\ & v1_xxreal_0 (k3_xxreal_3 X0 X1)) \end{aligned} \quad (27)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0)\Rightarrow(v1_xxreal_0 (k2_xxreal_3 X0)) \quad (28)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow(\\ & v1_xxreal_0 (k1_xxreal_3 X0 X1)) \end{aligned} \quad (29)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (k3_xxreal_3 X0 X1 = k1_xxreal_3 X0 (k2_xxreal_3 X1))) \quad (30)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (((v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \Rightarrow ((X2 = \\ & k1_xxreal_3 X0 X1) \Leftrightarrow (\exists X3.(v1_xcmplx_0 X3) \wedge (\exists X4. \\ & (v1_xcmplx_0 X4) \wedge ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = k2_xcmplx_0 X3 X4)))))) \wedge \\ & (((((X0 = k1_xxreal_0) \wedge (X1 \neq k2_xxreal_0)) \vee ((X1 = k1_xxreal_0) \wedge \\ & (X0 \neq k2_xxreal_0))) \Rightarrow ((X2 = k1_xxreal_3 X0 X1) \Leftrightarrow (X2 = k1_xxreal_0))) \wedge \\ & (((((X0 = k2_xxreal_0) \wedge (X1 \neq k1_xxreal_0)) \vee ((X1 = k2_xxreal_0) \wedge \\ & (X0 \neq k1_xxreal_0))) \Rightarrow ((X2 = k1_xxreal_3 X0 X1) \Leftrightarrow (X2 = k2_xxreal_0))) \wedge \\ & (\neg(\neg(v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \wedge ((\neg(X0 = k1_xxreal_0) \wedge \\ & (X1 \neq k2_xxreal_0)) \wedge ((\neg(X1 = k1_xxreal_0) \wedge (X0 \neq k2_xxreal_0)) \wedge \\ & ((\neg(X0 = k2_xxreal_0) \wedge (X1 \neq k1_xxreal_0)) \wedge ((\neg(X1 = k2_xxreal_0) \wedge \\ & (X0 \neq k1_xxreal_0)) \wedge (\neg(X2 = k1_xxreal_3 X0 X1) \Leftrightarrow (X2 = k6_numbers)))))))))) \wedge \\ & (31) \end{aligned}$$

Assume the following.

$$k1_xxreal_0 = k1_numbers \quad (32)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (k1_xxreal_3 X0 X1 = k1_xxreal_3 X1 X0) \quad (33)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (34)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X0))) \quad (35)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (36)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (37)$$

Theorem 1

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