

t9_xxreal_3
(TMRoL1RVkc8vfx3ch8cAHiXLZzt4nJs8fsb)

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Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k2_xxreal_3 : \iota \Rightarrow \iota$ 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. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k3_xxreal_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Assume the following.

$$k2_xxreal_3 \ k2_xxreal_0 = k1_xxreal_0 \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 \ X0 \ X1) \tag{2}$$

Assume the following.

$$\forall X0. (v1_xxreal_0 \ X0) \Rightarrow (\neg(\neg X0 \in k1_numbers) \wedge ((X0 \neq k1_xxreal_0) \wedge (X0 \neq k2_xxreal_0))) \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xcmplx_0 \ X0) \wedge (v1_xcmplx_0 \ X1)) \Rightarrow (k2_xcmplx_0 \ (k4_xcmplx_0 \ X0) \ (k4_xcmplx_0 \ X1) = k4_xcmplx_0 \ (k2_xcmplx_0 \ X0 \ X1)) \tag{4}$$

Assume the following.

$$\forall X0. (v1_xxreal_0 \ X0) \Rightarrow ((X0 \in k1_numbers) \Rightarrow (k2_xxreal_3 \ (k1_xxreal_3 \ X0 \ k1_xxreal_0) = k1_xxreal_3 \ (k2_xxreal_3 \ k1_xxreal_0) \ (k2_xxreal_3 \ X0))) \tag{5}$$

Assume the following.

$$k2_xxreal_3 \ k1_xxreal_0 = k2_xxreal_0 \tag{6}$$

Assume the following.

$$k2_xxreal_3 (k1_xxreal_3 k1_xxreal_0 k2_xxreal_0) = k3_xxreal_3 (k2_xxreal_3 k2_xxreal_0) k1_xxreal_0 \quad (7)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k4_xcmplx_0 (k4_xcmplx_0 X0) = X0) \quad (8)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (k2_xxreal_3 (k2_xxreal_3 X0) = X0) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow ((X0 = X1) \Rightarrow (k2_xxreal_3 X0 = k4_xcmplx_0 X1)) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_xreal_0 X0) \wedge ((v1_xreal_0 X1) \wedge ((v1_xcmplx_0 X2) \wedge (v1_xcmplx_0 X3)))) \Rightarrow (((X0 = X2) \wedge (X1 = X3)) \Rightarrow (k1_xxreal_3 X0 X1 = k2_xcmplx_0 X2 X3)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_xxreal_0 X0) \wedge ((v3_xxreal_0 X0) \wedge (\neg v1_xreal_0 X0))) \wedge ((v1_xxreal_0 X1) \wedge ((v2_xxreal_0 X1) \wedge (\neg v1_xreal_0 X1)))) \Rightarrow ((v1_xboole_0 (k1_xxreal_3 X0 X1)) \wedge (v1_xxreal_0 (k1_xxreal_3 X0 X1))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_xxreal_0 X0) \wedge ((v3_xxreal_0 X0) \wedge (\neg v1_xreal_0 X0))) \wedge ((v1_xxreal_0 X1) \wedge ((v3_xxreal_0 X1) \wedge (\neg v1_xreal_0 X1)))) \Rightarrow ((v1_xxreal_0 (k1_xxreal_3 X0 X1)) \wedge (\neg v1_xreal_0 (k1_xxreal_3 X0 X1))) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0) \wedge ((v1_xxreal_0 X1) \wedge (\neg v1_xreal_0 X1))) \Rightarrow (\neg v1_xreal_0 (k1_xxreal_3 X0 X1)) \quad (14)$$

Assume the following.

$$v3_xxreal_0 k2_xxreal_0 \quad (15)$$

Assume the following.

$$v2_xxreal_0 k1_xxreal_0 \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0)\wedge(v1_xreal_0 X1))\Rightarrow((v1_xxreal_0 (k1_xxreal_3 X0 X1))\wedge(v1_xreal_0 (k1_xxreal_3 X0 X1))) \quad (17)$$

Assume the following.

$$v1_xxreal_0 k2_xxreal_0 \quad (18)$$

Assume the following.

$$\neg v1_xreal_0 k1_xxreal_0 \quad (19)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0)\Rightarrow((v1_xxreal_0 (k2_xxreal_3 X0))\wedge(v1_xreal_0 (k2_xxreal_3 X0))) \quad (20)$$

Assume the following.

$$v1_xxreal_0 k1_xxreal_0 \quad (21)$$

Assume the following.

$$\neg v1_xreal_0 k2_xxreal_0 \quad (22)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(v1_xcmplx_0 (k4_xcmplx_0 X0)) \quad (23)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0)\Rightarrow(v1_xxreal_0 (k2_xxreal_3 X0)) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow(v1_xxreal_0 (k1_xxreal_3 X0 X1)) \quad (25)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0)\Rightarrow(\forall X1.(v1_xcmplx_0 X1)\Rightarrow(k6_xcmplx_0 X0 X1 = k2_xcmplx_0 X0 (k4_xcmplx_0 X1))) \quad (26)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0)\Rightarrow(\forall X1.(v1_xxreal_0 X1)\Rightarrow(k3_xxreal_3 X0 X1 = k1_xxreal_3 X0 (k2_xxreal_3 X1))) \quad (27)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\
& (v1_xxreal_0 X2) \Rightarrow (((v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \Rightarrow ((X2 = \\
& k1_xxreal_3 X0 X1) \Leftrightarrow (\exists X3.(v1_xcmplx_0 X3) \wedge (\exists X4. \\
& (v1_xcmplx_0 X4) \wedge ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = k2_xcmplx_0 X3 X4)))))) \wedge \\
& (((((X0 = k1_xxreal_0) \wedge (X1 \neq k2_xxreal_0)) \vee ((X1 = k1_xxreal_0) \wedge \\
& (X0 \neq k2_xxreal_0))) \Rightarrow ((X2 = k1_xxreal_3 X0 X1) \Leftrightarrow (X2 = k1_xxreal_0))) \wedge \\
& (((((X0 = k2_xxreal_0) \wedge (X1 \neq k1_xxreal_0)) \vee ((X1 = k2_xxreal_0) \wedge \\
& (X0 \neq k1_xxreal_0))) \Rightarrow ((X2 = k1_xxreal_3 X0 X1) \Leftrightarrow (X2 = k2_xxreal_0))) \wedge \\
& (\neg(\neg(v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \wedge ((\neg(X0 = k1_xxreal_0) \wedge \\
& (X1 \neq k2_xxreal_0)) \wedge ((\neg(X1 = k1_xxreal_0) \wedge (X0 \neq k2_xxreal_0)) \wedge \\
& ((\neg(X0 = k2_xxreal_0) \wedge (X1 \neq k1_xxreal_0)) \wedge ((\neg(X1 = k2_xxreal_0) \wedge \\
& (X0 \neq k1_xxreal_0)) \wedge (\neg(X2 = k1_xxreal_3 X0 X1) \Leftrightarrow (X2 = k6_numbers))))))))))))) \\
& \tag{28}
\end{aligned}$$

Assume the following.

$$k1_xxreal_0 = k1_numbers \tag{29}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (\\
& k1_xxreal_3 X0 X1 = k1_xxreal_3 X1 X0) \\
& \tag{30}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_xxreal_0 X0) \wedge (v3_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 \\
& X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v2_xxreal_0 X0))) \\
& \tag{31}
\end{aligned}$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \tag{32}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 \\
& X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X0))) \\
& \tag{33}
\end{aligned}$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \tag{34}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_xxreal_0 X0) \wedge ((\neg v3_xxreal_0 X0) \wedge (\neg v1_xreal_0 \\
& X0))) \Rightarrow ((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \\
& \tag{35}
\end{aligned}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \tag{36}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (k2_xxreal_3 \\
& (k1_xxreal_3 X0 X1) = k1_xxreal_3 (k2_xxreal_3 X0) (k2_xxreal_3 \\
& X1)))
\end{aligned}$$