

l93_xxreal_3

(TMQ66rECeotoQyFvHEHcREAgismNDusvoLy)

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Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k4_xxreal_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k2_xxreal_0 : \iota$ be given. Let $k1_xxreal_0 : \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1_xboole_0 X0) \wedge ((X0 \neq X1) \wedge (v1_xboole_0 X1)) \quad (1)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow ((X0 = k6_numbers) \Rightarrow (k4_xxreal_3 X1 (k4_xxreal_3 \\ & X0 X2) = k4_xxreal_3 (k4_xxreal_3 X1 X0) X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow ((X0 = k6_numbers) \Rightarrow (k4_xxreal_3 X0 (k4_xxreal_3 \\ & X1 X2) = k4_xxreal_3 (k4_xxreal_3 X0 X1) X2)))) \end{aligned} \quad (4)$$

Assume the following.

$$v1_xxreal_0 k2_xxreal_0 \quad (5)$$

Assume the following.

$$\neg v1_xreal_0 k1_xxreal_0 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \wedge \\ & ((v1_xxreal_0 X1) \wedge (v2_xxreal_0 X1))) \Rightarrow ((v1_xxreal_0 (k4_xxreal_3 \\ & X0 X1)) \wedge (v2_xxreal_0 (k4_xxreal_3 X0 X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_xxreal_0 X0)\wedge(v3_xxreal_0 X0))\wedge((v1_xxreal_0 X1)\wedge(v3_xxreal_0 X1)))\Rightarrow((v1_xxreal_0 (k4_xxreal_3 X0 X1))\wedge(v2_xxreal_0 (k4_xxreal_3 X0 X1))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_xxreal_0 X0)\wedge(v2_xxreal_0 X0))\wedge((v1_xxreal_0 X1)\wedge(v3_xxreal_0 X1)))\Rightarrow((v1_xxreal_0 (k4_xxreal_3 X0 X1))\wedge(v3_xxreal_0 (k4_xxreal_3 X0 X1))) \quad (9)$$

Assume the following.

$$v1_xxreal_0 k1_xxreal_0 \quad (10)$$

Assume the following.

$$\neg v1_xxreal_0 k2_xxreal_0 \quad (11)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow(v1_xxreal_0 (k4_xxreal_3 X0 X1)) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0)\Rightarrow(\forall X1.(v1_xxreal_0 X1)\Rightarrow(\forall X2. \\ & (v1_xxreal_0 X2)\Rightarrow((((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow((X2 = \\ & k4_xxreal_3 X0 X1)\Leftrightarrow(\exists X3.(v1_xcmplx_0 X3)\wedge(\exists X4. \\ & (v1_xcmplx_0 X4)\wedge((X0 = X3)\wedge((X1 = X4)\wedge(X2 = k3_xcmplx_0 X3 X4))))))\wedge \\ & ((\neg(\neg(v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\wedge(((v2_xxreal_0 X0)\wedge \\ & (v2_xxreal_0 X1))\vee((v3_xxreal_0 X0)\wedge(v3_xxreal_0 X1)))\wedge(\neg \\ & X2 = k4_xxreal_3 X0 X1)\Leftrightarrow(X2 = k1_xxreal_0)))\wedge(\neg(\neg(v1_xxreal_0 \\ & X0)\wedge(v1_xxreal_0 X1))\wedge(((v2_xxreal_0 X0)\wedge(v3_xxreal_0 X1))\vee \\ & ((v3_xxreal_0 X0)\wedge(v2_xxreal_0 X1)))\wedge(\neg(X2 = k4_xxreal_3 X0 X1)\Leftrightarrow \\ & (X2 = k2_xxreal_0)))\wedge(\neg(\neg(v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\wedge \\ & ((\neg(\neg(v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\wedge(((v2_xxreal_0 X0)\wedge \\ & v2_xxreal_0 X1))\vee((v3_xxreal_0 X0)\wedge(v3_xxreal_0 X1))))\wedge(\neg \\ & (\neg(v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\wedge(((v2_xxreal_0 X0)\wedge(v3_xxreal_0 \\ & X1))\vee((v3_xxreal_0 X0)\wedge(v2_xxreal_0 X1))))\wedge(\neg(X2 = k4_xxreal_3 \\ & X0 X1)\Leftrightarrow(X2 = k6_numbers)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0)\wedge(v1_xxreal_0 X1))\Rightarrow(k4_xxreal_3 X0 X1 = k4_xxreal_3 X1 X0) \quad (15)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0)\wedge(\neg(v2_xxreal_0 X0)\wedge(\neg(v3_xxreal_0 X0))))\Rightarrow((v1_xboole_0 X0)\wedge(v1_xxreal_0 X0)) \quad (16)$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow ((\neg v1_xxreal_0 X0) \Rightarrow (k4_xxreal_3 X0 (k4_xxreal_3 \\ & X1 X2) = k4_xxreal_3 (k4_xxreal_3 X0 X1) X2)))) \end{aligned}$$