

t305_xxreal_1

(TMJ9vKnLWfDShnx1APTiKYqDgMkTxyePMqA)

October 27, 2020

Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_numbers : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow ((X0 \in k4_xxreal_1 X1 X2) \Leftrightarrow ((\neg r1_xxreal_0 X0 X1) \wedge \\ & (\neg r1_xxreal_0 X2 X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow ((X0 \in k3_xxreal_1 X1 X2) \Leftrightarrow ((\neg r1_xxreal_0 X0 X1) \wedge \\ & (r1_xxreal_0 X0 X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow \\ & (r1_xxreal_0 X0 X2)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (r1_xxreal_0 X0 X0) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.k6_subset_1 X0 X1 = k4_xboole_0 X0 X1 \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (v2_membered (k4_xxreal_1 X0 X1)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(v2_membered\ X0)\Rightarrow(v2_membered\ (k4_xboole_0\ X0\ X1)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0\ X0)\wedge(v1_xxreal_0\ X1))\Rightarrow(v2_membered\ (k3_xxreal_1\ X0\ X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v2_membered\ X0)\wedge(v2_membered\ X1))\Rightarrow(v2_membered\ (k2_xboole_0\ X0\ X1)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k4_xboole_0\ X0\ X1)\Leftrightarrow(\forall X3.(X3 \in X2)\Leftrightarrow((X3 \in X0)\wedge(\neg X3 \in X1))) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xxreal_0\ X0)\Rightarrow(\forall X1.(v1_xxreal_0\ X1)\Rightarrow(k4_xxreal_1\ X0\ X1 = ReplSep\ (toset\ (\lambda X2 : \iota.m1_subset_1\ X2\ k7_numbers)) \\ (\lambda X2 : \iota.(\neg r1_xxreal_0\ X2\ X0)\wedge(\neg r1_xxreal_0\ X1\ X2))\ (\lambda X2 : \iota.X2))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xxreal_0\ X0)\Rightarrow(\forall X1.(v1_xxreal_0\ X1)\Rightarrow(k3_xxreal_1\ X0\ X1 = ReplSep\ (toset\ (\lambda X2 : \iota.m1_subset_1\ X2\ k7_numbers)) \\ (\lambda X2 : \iota.(\neg r1_xxreal_0\ X2\ X0)\wedge(r1_xxreal_0\ X2\ X1))\ (\lambda X2 : \iota.X2))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2_xboole_0\ X0\ X1)\Leftrightarrow(\forall X3.(X3 \in X2)\Leftrightarrow((X3 \in X0)\vee(X3 \in X1))) \quad (13)$$

Assume the following.

$$\forall X0.(v2_membered\ X0)\Rightarrow(\forall X1.(v2_membered\ X1)\Rightarrow((X0 = X1)\Leftrightarrow(\forall X2.(v1_xxreal_0\ X2)\Rightarrow((X2 \in X0)\Leftrightarrow(X2 \in X1)))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0\ X0)\wedge(v1_xxreal_0\ X1))\Rightarrow((r1_xxreal_0\ X0\ X1)\vee(r1_xxreal_0\ X1\ X0)) \quad (15)$$

Theorem 1

$$\begin{aligned} \forall X0.(v1_xxreal_0\ X0)\Rightarrow(\forall X1.(v1_xxreal_0\ X1)\Rightarrow(\forall X2. \\ (v1_xxreal_0\ X2)\Rightarrow(\forall X3.(v1_xxreal_0\ X3)\Rightarrow(\neg(\neg r1_xxreal_0\ X1\ X0)\wedge(\neg r1_xxreal_0\ X3\ X2)\wedge(k6_subset_1\ (k4_xxreal_1\ X0\ X3) \\ (k3_xxreal_1\ X2\ X1)\neq k2_xboole_0\ (k3_xxreal_1\ X0\ X2)\ (k4_xxreal_1\ X1\ X3)))))) \end{aligned}$$