

t91_xxreal_2
(TMS6Svpo5PHEemzbqLBTDFzY3fTqrkgzDnm)

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Let $v2_membered : \iota \Rightarrow o$ be given. Let $v2_xxreal_2 : \iota \Rightarrow o$ be given. Let $v6_xxreal_2 : \iota \Rightarrow o$ be given. Let $k1_xxreal_2 : \iota \Rightarrow \iota$ be given. Let $k2_xxreal_2 : \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(v2_membered X0) \Rightarrow & ((\forall X1.(v1_xxreal_0 X1) \Rightarrow (\\ & \forall X2.(v1_xxreal_0 X2) \Rightarrow (\forall X3.(v1_xxreal_0 X3) \Rightarrow (\\ (X1 \in X0) \wedge (X2 \in X0) \Rightarrow & ((r1_xxreal_0 X3 X1) \vee ((r1_xxreal_0 X2 X3) \vee \\ & (X3 \in X0)))))) \Rightarrow (v6_xxreal_2 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(v2_membered X0) \Rightarrow & ((v6_xxreal_2 X0) \Rightarrow (\forall X1.(\\ v1_xxreal_0 X1) \Rightarrow & (\forall X2.(v1_xxreal_0 X2) \Rightarrow (((X1 \in X0) \wedge (r1_xxreal_0 \\ X2 X1)) \Rightarrow & ((r1_xxreal_0 X2 (k2_xxreal_2 X0)) \vee (X2 \in X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(v2_membered X0) \Rightarrow & ((v6_xxreal_2 X0) \Rightarrow (\forall X1.(\\ v1_xxreal_0 X1) \Rightarrow & (\forall X2.(v1_xxreal_0 X2) \Rightarrow (\forall X3.(v1_xxreal_0 \\ X3) \Rightarrow & (((X1 \in X0) \wedge ((X2 \in X0) \wedge ((r1_xxreal_0 X1 X3) \wedge (r1_xxreal_0 X3 \\ X2)))) \Rightarrow & (X3 \in X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xxreal_0 X0) \Rightarrow & (\forall X1.(v2_membered X1) \Rightarrow (\\ X0 \in X1) \Rightarrow & (r1_xxreal_0 (k2_xxreal_2 X1) X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xxreal_0 X0) \Rightarrow & (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xxreal_0 X2) \Rightarrow & (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow \\ & (r1_xxreal_0 X0 X2)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v2_membered\ X0)\wedge(v2_membered\ X1))\Rightarrow(v2_membered\ (k2_xboole_0\ X0\ X1)) \quad (6)$$

Assume the following.

$$\forall X0.(v2_membered\ X0)\Rightarrow(v1_xxreal_0\ (k2_xxreal_2\ X0)) \quad (7)$$

Assume the following.

$$\forall X0.(v2_membered\ X0)\Rightarrow(v1_xxreal_0\ (k1_xxreal_2\ X0)) \quad (8)$$

Assume the following.

$$\forall X0.(v2_membered\ X0)\Rightarrow((v2_xxreal_2\ X0)\Leftrightarrow(k1_xxreal_2\ X0\in X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2_xboole_0\ X0\ X1)\Leftrightarrow(\forall X3.(X3\in X2)\Leftrightarrow((X3\in X0)\vee(X3\in X1))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0\ X0)\wedge(v1_xxreal_0\ X1))\Rightarrow((r1_xxreal_0\ X0\ X1)\vee(r1_xxreal_0\ X1\ X0)) \quad (11)$$

Theorem 1

$$\forall X0.(v2_membered\ X0)\Rightarrow(\forall X1.(v2_membered\ X1)\Rightarrow(((v2_xxreal_2\ X0)\wedge((v6_xxreal_2\ X0)\wedge((v6_xxreal_2\ X1)\wedge(k1_xxreal_2\ X0 = k2_xxreal_2\ X1))))\Rightarrow(v6_xxreal_2\ (k2_xboole_0\ X0\ X1))))$$