t90_xxreal_2 (TMdY1ckFnRoQ9i6FhEy2234dCaiavQ2iJ1f)

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Let $v2\_membered : \iota \Rightarrow o$ be given. Let $v6\_xxreal\_2 : \iota \Rightarrow o$ be given. Let $v1\_xxreal\_2 : \iota \Rightarrow o$ 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.

$$\forall X0.(v2\_membered\ X0) \Rightarrow ((\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (\forall X2.(v1\_xxreal\_0\ X2) \Rightarrow (\forall X3.(v1\_xxreal\_0\ X3) \Rightarrow ((X1 \in X0) \wedge (X2 \in X0)) \Rightarrow ((r1\_xxreal\_0\ X3\ X1) \vee ((r1\_xxreal\_0\ X2\ X3) \vee (X3 \in X0)))))))) \Rightarrow (v6\_xxreal\_2\ X0)) \tag{1}$$

Assume the following.

$$\forall X0.(v2\_membered\ X0) \Rightarrow ((v6\_xxreal\_2\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (\forall X2.(v1\_xxreal\_0\ X2) \Rightarrow (((X1 \in X0) \wedge (r1\_xxreal\_0\ X1\ X2)) \Rightarrow ((r1\_xxreal\_0\ (k1\_xxreal\_2\ X0)\ X2) \vee (X2 \in X0)))))) \tag{2}$$

Assume the following.

$$\forall X0.(v2\_membered\ X0) \Rightarrow ((v6\_xxreal\_2\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (\forall X2.(v1\_xxreal\_0\ X2) \Rightarrow (\forall X3.(v1\_xxreal\_0\ X3) \Rightarrow (((X1 \in X0) \wedge ((X2 \in X0) \wedge ((r1\_xxreal\_0\ X1\ X3) \wedge (r1\_xxreal\_0\ X3\ X2)))) \Rightarrow (X3 \in X0)))))) \tag{3}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v2\_membered\ X1) \Rightarrow ((X0 \in X1) \Rightarrow (r1\_xxreal\_0\ X0\ (k1\_xxreal\_2\ X1)))) \tag{4}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (\forall X2.(v1\_xxreal\_0\ X2) \Rightarrow (((r1\_xxreal\_0\ X0\ X1) \wedge (r1\_xxreal\_0\ X1\ X2)) \Rightarrow (r1\_xxreal\_0\ X0\ X2)))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((v2\_membered\ X0)\wedge(v2\_membered\ X1))\Rightarrow(\\ v2\_membered\ (k2\_xboole\_0\ X0\ X1)) \tag{6}$$

Assume the following.

$$\forall X0.(v2\_membered\ X0)\Rightarrow(v1\_xxreal\_0\ (k1\_xxreal\_2\ X0)) \tag{7}$$

Assume the following.

$$\forall X0.(v2\_membered\ X0)\Rightarrow((v1\_xxreal\_2\ X0)\Leftrightarrow(k2\_xxreal\_2\ X0\in X0)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2=k2\_xboole\_0\ X0\ X1)\Leftrightarrow(\forall X3.\\ (X3\in X2)\Leftrightarrow((X3\in X0)\vee(X3\in X1))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0\ X0)\wedge(v1\_xxreal\_0\ X1))\Rightarrow(\\ (r1\_xxreal\_0\ X0\ X1)\vee(r1\_xxreal\_0\ X1\ X0)) \tag{10}$$

Theorem 1

$$\forall X0.(v2\_membered\ X0)\Rightarrow(\forall X1.(v2\_membered\ X1)\Rightarrow((\\ (v6\_xxreal\_2\ X0)\wedge((v1\_xxreal\_2\ X1)\wedge((v6\_xxreal\_2\ X1)\wedge(k1\_xxreal\_2\\ X0=k2\_xxreal\_2\ X1))))\Rightarrow(v6\_xxreal\_2\ (k2\_xboole\_0\ X0\ X1))))$$