

t8_xxreal_2

(TMEiE9qwhPHcazoBhn9bnQBhQ3mmLhAtbwD)

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Let $v2_membered : \iota \Rightarrow o$ be given. Let $m1_xxreal_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_xxreal_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (r1_xxreal_0 X0 (k4_xxreal_0 X0 X1))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (v1_xxreal_0 (k4_xxreal_0 X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v2_membered X0) \wedge (v2_membered X1)) \Rightarrow (v2_membered (k2_xboole_0 X0 X1)) \quad (5)$$

Assume the following.

$$\forall X0.(v2_membered X0) \Rightarrow (\forall X1.(m1_xxreal_2 X1 X0) \Rightarrow (v1_xxreal_0 X1)) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(X2 = k2_xboole_0 X0 X1) \Leftrightarrow (\forall X3. \\ & (X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(v2_membered\ X0) \Rightarrow (\forall X1.(v1_xxreal_0\ X1) \Rightarrow ((m1_xxreal_2\ X1\ X0) \Leftrightarrow (\forall X2.(v1_xxreal_0\ X2) \Rightarrow ((X2 \in X0) \Rightarrow (r1_xxreal_0\ X2\ X1))))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0\ X0) \wedge (v1_xxreal_0\ X1)) \Rightarrow (k4_xxreal_0\ X0\ X1 = k4_xxreal_0\ X1\ X0) \quad (9)$$

Assume the following.

$$\forall X0.(v2_membered\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ X0) \Rightarrow (v1_xxreal_0\ X1)) \quad (10)$$

Theorem 1

$$\forall X0.(v2_membered\ X0) \Rightarrow (\forall X1.(v2_membered\ X1) \Rightarrow (\forall X2.(m1_xxreal_2\ X2\ X0) \Rightarrow (\forall X3.(m1_xxreal_2\ X3\ X1) \Rightarrow (m1_xxreal_2\ (k4_xxreal_0\ X2\ X3)\ (k2_xboole_0\ X0\ X1)))))$$