

t7\_xxreal\_2  
(TMb5vGTpp1UkbjtYQGaxRggxXpWsRKis6cn)

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Let  $v2\_membered : \iota \Rightarrow o$  be given. Let  $m2\_xxreal\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  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.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (r1\_xxreal\_0 (k3\_xxreal\_0 X0 X1) X0)) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (v1\_xxreal\_0 (k3\_xxreal\_0 X0 X1)) \quad (4)$$

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.

$$\forall X0.(v2\_membered X0) \Rightarrow (\forall X1.(m2\_xxreal\_2 X1 X0) \Rightarrow (v1\_xxreal\_0 X1)) \quad (6)$$

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.

$$\forall X0.(v2\_membered\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow ((m2\_xxreal\_2\ X1\ X0) \Leftrightarrow (\forall X2.(v1\_xxreal\_0\ X2) \Rightarrow ((X2 \in X0) \Rightarrow (r1\_xxreal\_0\ X1\ X2))))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0\ X0) \wedge (v1\_xxreal\_0\ X1)) \Rightarrow (k3\_xxreal\_0\ X0\ X1 = k3\_xxreal\_0\ X1\ X0) \quad (9)$$

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**

$$\forall X0.(v2\_membered\ X0) \Rightarrow (\forall X1.(v2\_membered\ X1) \Rightarrow (\forall X2.(m2\_xxreal\_2\ X2\ X0) \Rightarrow (\forall X3.(m2\_xxreal\_2\ X3\ X1) \Rightarrow (m2\_xxreal\_2\ (k3\_xxreal\_0\ X2\ X3)\ (k2\_xboole\_0\ X0\ X1)))))$$