

t84\_xxreal\_2 (TM-  
dompk6RZJudCcMG4vkkyMLqUw4hCTqPHb)

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Let  $v2\_membered : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v6\_xxreal\_2 : \iota \Rightarrow o$  be given. Let  $k1\_xxreal\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ (v1\_xxreal\_0 X2) \Rightarrow ((X0 \in k1\_xxreal\_1 X1 X2) \Leftrightarrow ((r1\_xxreal\_0 X1 X0) \wedge \\ (r1\_xxreal\_0 X0 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (( \\ (r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X0)) \Rightarrow (X0 = X1))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow ( \\ v2\_membered (k1\_xxreal\_1 X0 X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.(v2\_membered X0) \Rightarrow (\forall X1.(r1\_tarski X0 X1) \Leftrightarrow (\forall X2. \\ (v1\_xxreal\_0 X2) \Rightarrow ((X2 \in X0) \Rightarrow (X2 \in X1)))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(r1\_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow \\ (X2 \in X1)) \end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(v2\_membered X0) \Leftrightarrow (\forall X1.(X1 \in X0) \Rightarrow (v1\_xxreal\_0 X1)) \tag{6}$$

Assume the following.

$$\begin{aligned} \forall X0.(v2\_membered X0) \Rightarrow ((v6\_xxreal\_2 X0) \Leftrightarrow (\forall X1.( \\ v1\_xxreal\_0 X1) \Rightarrow (\forall X2.(v1\_xxreal\_0 X2) \Rightarrow (((X1 \in X0) \wedge (X2 \in \\ X0)) \Rightarrow (r1\_tarski (k1\_xxreal\_1 X1 X2) X0)))))) \end{aligned} \tag{7}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v2\_membered\ X0) \Rightarrow ((\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow ( \\ & \quad \forall X2.(v1\_xxreal\_0\ X2) \Rightarrow (\forall X3.(v1\_xxreal\_0\ X3) \Rightarrow (( \\ & (X1 \in X0) \wedge (X2 \in X0)) \Rightarrow ((r1\_xxreal\_0\ X3\ X1) \vee (r1\_xxreal\_0\ X2\ X3) \vee \\ & \quad (X3 \in X0)))))) \Rightarrow (v6\_xxreal\_2\ X0)) \end{aligned}$$