

t89\_xxreal\_2

(TMZJ1hDzCvTHrF7dKkHJ2ZEzN6pp77iAcVk)

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Let  $v2\_membered : \iota \Rightarrow o$  be given. Let  $v6\_xxreal\_2 : \iota \Rightarrow o$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  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.

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

Assume the following.

$$\begin{aligned} \forall X0.(v2\_membered X0) \Rightarrow & ((v6\_xxreal\_2 X0) \Rightarrow (\forall X1.( \\ v1\_xxreal\_0 X1) \Rightarrow & (\forall X2.(v1\_xxreal\_0 X2) \Rightarrow (\forall X3.(v1\_xxreal\_0 \\ X3) \Rightarrow & (((X1 \in X0) \wedge ((X2 \in X0) \wedge ((r1\_xxreal\_0 X1 X3) \wedge (r1\_xxreal\_0 X3 \\ X2)))) \Rightarrow & (X3 \in X0)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.((v2\_membered X0) \wedge (v2\_membered X1)) \Rightarrow (v2\_membered (k2\_xboole\_0 X0 X1)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3.(X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \tag{4}$$

Assume the following.

$$\forall X0.(v2\_membered X0) \Rightarrow (\forall X1.(v2\_membered X1) \Rightarrow ((r1\_xboole\_0 X0 X1) \Leftrightarrow (\forall X2.(v1\_xxreal\_0 X2) \Rightarrow (\neg(X2 \in X0) \wedge (X2 \in X1)))))) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow ((r1\_xxreal\_0 X0 X1) \vee (r1\_xxreal\_0 X1 X0)) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0 X0 X1 = k2\_xboole\_0 X1 X0 \quad (7)$$

**Theorem 1**

$$\forall X0.(v2\_membered X0) \Rightarrow (\forall X1.(v2\_membered X1) \Rightarrow ((v6\_xxreal\_2 X0) \wedge (v6\_xxreal\_2 X1)) \Rightarrow ((r1\_xboole\_0 X0 X1) \vee (v6\_xxreal\_2 (k2\_xboole\_0 X0 X1))))))$$