

t168\_xxreal\_1 (TMRphQvgpPAVkaBaa5XEMnKJwTbmMSbAcRL)

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Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xxreal\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_membered : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_numbers : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow ((X0 \in k2\_xxreal\_1 X1 X2) \Leftrightarrow ((r1\_xxreal\_0 X1 X0) \wedge \\ & (\neg r1\_xxreal\_0 X2 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X2)) \Rightarrow \\ & (r1\_xxreal\_0 X0 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow ( \\ & v2\_membered (k2\_xxreal\_1 X0 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((v2\_membered X0) \wedge (v2\_membered X1)) \Rightarrow ( \\ & v2\_membered (k2\_xboole\_0 X0 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(X2 = k2\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. \\ & (X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (k2\_xxreal\_1 \\ & X0 X1 = \text{ReplSep} (\text{toset} (\lambda X2 : \iota.m1\_subset\_1 X2 k7\_numbers)) \\ & (\lambda X2 : \iota.(r1\_xxreal\_0 X0 X2) \wedge (\neg r1\_xxreal\_0 X1 X2)) (\lambda X2 : \\ & \iota.X2))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v2\_membered\ X0) \Rightarrow (\forall X1.(v2\_membered\ X1) \Rightarrow ((X0 = X1) \Leftrightarrow (\forall X2.(v1\_xxreal\_0\ X2) \Rightarrow ((X2 \in X0) \Leftrightarrow (X2 \in X1))))) \quad (7)$$

**Theorem 1**

$$\forall X0.(v1\_xxreal\_0\ X0) \Rightarrow (\forall X1.(v1\_xxreal\_0\ X1) \Rightarrow (\forall X2.(v1\_xxreal\_0\ X2) \Rightarrow (((r1\_xxreal\_0\ X0\ X1) \wedge (r1\_xxreal\_0\ X1\ X2)) \Rightarrow (k2\_xboole\_0\ (k2\_xxreal\_1\ X0\ X1)\ (k2\_xxreal\_1\ X1\ X2) = k2\_xxreal\_1\ X0\ X2))))$$