

## t2\_topreal7

(TMY3X1YNimr8efkyeFXW4NrHyL9qYNeg93y)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_square\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_membered : \iota \Rightarrow o$  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.

$$\begin{aligned} & \forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xxreal\_0 X2) \Rightarrow (\forall X3.(v1\_xxreal\_0 X3) \Rightarrow (((r1\_xxreal\_0 \\ & X0 X1) \wedge (r1\_xxreal\_0 X2 X3)) \Rightarrow (r1\_xxreal\_0 (k4\_xxreal\_0 X0 X2) ( \\ & k4\_xxreal\_0 X1 X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k1\_numbers) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 k1\_numbers) \Rightarrow (r1\_xxreal\_0 (k2\_square\_1 (k7\_real\_1 \\ & X0 X2) (k7\_real\_1 X1 X3)) (k7\_real\_1 (k2\_square\_1 X0 X1) (k2\_square\_1 \\ & X2 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers) \wedge (m1\_subset\_1 \\ & X1 k1\_numbers)) \Rightarrow (k2\_square\_1 X0 X1 = k4\_xxreal\_0 X0 X1) \end{aligned} \quad (4)$$

Assume the following.

$$v3\_membered k1\_numbers \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers) \wedge (v1\_xreal\_0 \\ & X1)) \Rightarrow (m1\_subset\_1 (k7\_real\_1 X0 X1) k1\_numbers) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k1\_numbers)\wedge(m1\_subset\_1 X1 k1\_numbers))\Rightarrow(m1\_subset\_1 (k2\_square\_1 X0 X1) k1\_numbers) \quad (7)$$

Assume the following.

$$\forall X0.(v3\_membered X0)\Rightarrow(v2\_membered X0) \quad (8)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(v2\_membered X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 X0)\Rightarrow(v1\_xreal\_0 X1)) \quad (10)$$

**Theorem 1**

$$\begin{aligned} &\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(\forall X1.(m1\_subset\_1 \\ &X1 k1\_numbers)\Rightarrow(\forall X2.(m1\_subset\_1 X2 k1\_numbers)\Rightarrow(\forall X3. \\ &(m1\_subset\_1 X3 k1\_numbers)\Rightarrow(\forall X4.(m1\_subset\_1 X4 k1\_numbers)\Rightarrow \\ &(\forall X5.(m1\_subset\_1 X5 k1\_numbers)\Rightarrow(((r1\_xreal\_0 X0 (k7\_real\_1 \\ &X1 X2))\wedge(r1\_xreal\_0 X3 (k7\_real\_1 X4 X5)))\Rightarrow(r1\_xreal\_0 (k2\_square\_1 \\ &X0 X3) (k7\_real\_1 (k2\_square\_1 X1 X4) (k2\_square\_1 X2 X5)))))))))) \end{aligned}$$