

t11\_chain\_1  
(TMLxg2fkXXvz8HK39berJCeYsnwPwZjyxhj)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_membered : \iota \Rightarrow o$  be given. Let  $k1\_xxreal\_2 : \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_2 : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_2 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v2\_membered X1) \Rightarrow ((X0 \in X1) \Rightarrow (r1\_xxreal\_0 X0 (k1\_xxreal\_2 X1)))) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\forall X0.(v2\_membered X0) \Rightarrow ((v2\_xxreal\_2 X0) \Leftrightarrow (k1\_xxreal\_2 X0 \in X0)) \quad (3)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers)) \Rightarrow (v3\_membered X0) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (5)$$

Assume the following.

$$\forall X0.(v3\_membered X0) \Rightarrow (v2\_membered X0) \quad (6)$$

Assume the following.

$$\forall X0.((v2\_membered X0) \wedge ((\neg v1\_xboole\_0 X0) \wedge (v1\_finset\_1 X0))) \Rightarrow ((v2\_membered X0) \wedge ((\neg v1\_xboole\_0 X0) \wedge ((v1\_xxreal\_2 X0) \wedge (v2\_xxreal\_2 X0)))) \quad (7)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (v1\_xreal\_0 X0) \quad (8)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_finset\_1 X0) \wedge (m1\_subset\_1 \\ & X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\exists X1.(m1\_subset\_1 X1 k1\_numbers) \wedge \\ & ((X1 \in X0) \wedge (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow ((X2 \in X0) \Rightarrow \\ & (r1\_xxreal\_0 X2 X1)))))) \end{aligned}$$