

## t9\_supinf\_1

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_setfam\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_numbers : \iota$  be given. Let  $v2\_membered : \iota \Rightarrow o$  be given. Let  $k5\_setfam\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xxreal\_2 : \iota \Rightarrow \iota$  be given. Let  $k6\_supinf\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_xxreal\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_setfam\_1 X0) \wedge (m1\_subset\_1 \\ X0 (k1\_zfmisc\_1 (k1\_zfmisc\_1 k7\_numbers)))))) \Rightarrow (\forall X1.(v2\_membered \\ X1) \Rightarrow ((X1 = k5\_setfam\_1 k7\_numbers X0) \Rightarrow (m2\_xxreal\_2 (k2\_xxreal\_2 \\ (k6\_supinf\_1 X0)) X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_setfam\_1 X0) \wedge (m1\_subset\_1 \\ X0 (k1\_zfmisc\_1 (k1\_zfmisc\_1 k7\_numbers)))))) \Rightarrow (\forall X1.(( \\ \neg v1\_xboole\_0 X1) \wedge (v2\_membered X1)) \Rightarrow ((X1 = k5\_setfam\_1 k7\_numbers \\ X0) \Rightarrow (m2\_xxreal\_2 (k2\_xxreal\_2 X1) (k6\_supinf\_1 X0)))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (\forall X1.(v1\_xxreal\_0 X1) \Rightarrow (( \\ (r1\_xxreal\_0 X0 X1) \wedge (r1\_xxreal\_0 X1 X0)) \Rightarrow (X0 = X1))) \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_setfam\_1 X0) \wedge (m1\_subset\_1 \\ X0 (k1\_zfmisc\_1 (k1\_zfmisc\_1 k7\_numbers)))))) \Rightarrow (v2\_membered ( \\ k6\_supinf\_1 X0)) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(v2\_membered X0) \Rightarrow (v1\_xxreal\_0 (k2\_xxreal\_2 X0)) \tag{5}$$

Assume the following.

$$\forall X0.(v2\_membered\ X0) \Rightarrow (\forall X1.(v1\_xreal\_0\ X1) \Rightarrow ((X1 = k2\_xreal\_2\ X0) \Leftrightarrow ((m2\_xreal\_2\ X1\ X0) \wedge (\forall X2.(m2\_xreal\_2\ X2\ X0) \Rightarrow (r1\_xreal\_0\ X2\ X1)))))) \quad (6)$$

**Theorem 1**

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge ((v1\_setfam\_1\ X0) \wedge (m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k1\_zfmisc\_1\ k7\_numbers)))))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0\ X1) \wedge (v2\_membered\ X1)) \Rightarrow ((X1 = k5\_setfam\_1\ k7\_numbers\ X0) \Rightarrow (k2\_xreal\_2\ X1 = k2\_xreal\_2\ (k6\_supinf\_1\ X0))))$$