

## t30\_mesfunc6

(TMM1Y7mKZMHXmfq7U66KkU1hFuBXN7tTWEg)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k1\_mesfunc2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_rfunct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_mesfunc2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_rfunct\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_numbers : \iota$  be given. Let  $k2\_supinf\_2 : \iota \Rightarrow \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_supinf\_2 : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_extreal2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k12\_supinf\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_rfunct\_3 : \iota \Rightarrow \iota$  be given. Let  $k1\_rfunct\_3 : \iota \Rightarrow \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k7\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 X1 k1\_numbers) \Rightarrow ((X0 = X1) \Rightarrow (k2\_supinf\_2 X0 = k1\_real\_1 X1))) \quad (1)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (2)$$

Assume the following.

$$k1\_supinf\_2 = k1\_xboole\_0 \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 X0))) \Rightarrow (k1\_seq\_1 X0 X1 = k1\_funct\_1 X0 X1) \quad (4)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (k1\_real\_1 X0 = k4\_xcmplx\_0 X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k7\_numbers)\wedge(m1\_subset\_1 X1 k7\_numbers))\Rightarrow(k1\_extreal2 X0 X1 = k4\_xxreal\_0 X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v2\_valued\_0 X0)))\Rightarrow(k12\_supinf\_2 X0 X1 = k1\_funct\_1 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 X0)))\Rightarrow(v1\_xreal\_0 (k1\_funct\_1 X0 X1)) \quad (8)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k7\_numbers)\Rightarrow(m1\_subset\_1 (k2\_supinf\_2 X0) k7\_numbers) \quad (9)$$

Assume the following.

$$m1\_subset\_1 k1\_supinf\_2 k7\_numbers \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 X0)))\Rightarrow(m1\_subset\_1 (k1\_seq\_1 X0 X1) k1\_numbers) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))\Rightarrow((v1\_funct\_1 (k1\_mesfunc5 X0 X1))\wedge(m1\_subset\_1 (k1\_mesfunc5 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))\Rightarrow((v1\_funct\_1 (k19\_rfunct\_3 X0 X1))\wedge(m1\_subset\_1 (k19\_rfunct\_3 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))\Rightarrow((v1\_funct\_1 (k18\_rfunct\_3 X0 X1))\wedge(m1\_subset\_1 (k18\_rfunct\_3 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v2\_valued\_0 X0)))\Rightarrow(m1\_subset\_1 (k12\_supinf\_2 X0 X1) k7\_numbers) \quad (15)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_funct\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))\Rightarrow(k1\_mesfunc5 X0 X1 = X1)) \quad (16)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_funct\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers))))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers))))\Rightarrow((X2 = k2\_mesfunc2 X0 X1)\Leftrightarrow((k1\_relset\_1 X0 X2 = k1\_relset\_1 X0 X1)\wedge(\forall X3.(m1\_subset\_1 X3 X0)\Rightarrow((X3 \in k1\_relset\_1 X0 X2)\Rightarrow(k12\_supinf\_2 X2 X3 = k1\_extreal2 (k2\_supinf\_2 (k12\_supinf\_2 X1 X3)) k1\_supinf\_2)))))))) \quad (17)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(k2\_rfunct\_3 X0 = k4\_xxreal\_0 (k4\_xcplx\_0 X0) k6\_numbers) \quad (18)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_funct\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers))))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers))))\Rightarrow((X2 = k1\_mesfunc2 X0 X1)\Leftrightarrow((k1\_relset\_1 X0 X2 = k1\_relset\_1 X0 X1)\wedge(\forall X3.(m1\_subset\_1 X3 X0)\Rightarrow((X3 \in k1\_relset\_1 X0 X2)\Rightarrow(k12\_supinf\_2 X2 X3 = k1\_extreal2 (k12\_supinf\_2 X1 X3) k1\_supinf\_2)))))))) \quad (19)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(k1\_rfunct\_3 X0 = k4\_xxreal\_0 X0 k6\_numbers) \quad (20)$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_funct\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))\Rightarrow((X2 = k19\_rfunct\_3 X0 X1)\Leftrightarrow((k1\_relset\_1 X0 X2 = k1\_relset\_1 X0 X1)\wedge(\forall X3.(m1\_subset\_1 X3 X0)\Rightarrow((X3 \in k1\_relset\_1 X0 X2)\Rightarrow(k1\_seq\_1 X2 X3 = k2\_rfunct\_3 (k1\_seq\_1 X1 X3)))))))) \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))) \Rightarrow ( \\ \forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ X0 k1\_numbers)))) \Rightarrow ((X2 = k18\_rfunct\_3 X0 X1) \Leftrightarrow ((k1\_relset\_1 X0 \\ X2 = k1\_relset\_1 X0 X1) \wedge (\forall X3.(m1\_subset\_1 X3 X0) \Rightarrow ((X3 \in k1\_relset\_1 \\ X0 X2) \Rightarrow (k1\_seq\_1 X2 X3 = k1\_rfunct\_3 (k1\_seq\_1 X1 X3))))))) \end{aligned} \quad (22)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v3\_valued\_0 X0)) \Rightarrow ((v1\_relat\_1 X0) \wedge (v2\_valued\_0 X0)) \quad (23)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v5\_relat\_1 X0 k1\_numbers)) \Rightarrow ((v1\_relat\_1 X0) \wedge (v3\_valued\_0 X0)) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v4\_relat\_1 X2 X0) \wedge (v5\_relat\_1 X2 X1)) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (26)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))) \Rightarrow ( \\ (k1\_mesfunc2 X0 (k1\_mesfunc5 X0 X1) = k18\_rfunct\_3 X0 X1) \wedge (k2\_mesfunc2 \\ X0 (k1\_mesfunc5 X0 X1) = k19\_rfunct\_3 X0 X1))) \end{aligned}$$