

## t57\_mesfunc6

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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  $v6\_supinf\_2 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k26\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_mesfunc5 : \iota \Rightarrow o$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_numbers : \iota$  be given. Let  $k1\_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_mesfunc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))) \Rightarrow ( \\ \forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow (r2\_relset\_1 X0 k7\_numbers \\ (k1\_mesfunc5 X0 (k26\_valued\_1 X0 k1\_numbers X1 X2)) (k6\_mesfunc1 \\ X0 (k1\_mesfunc5 X0 X1) X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \Rightarrow ( \\ \forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow ((v6\_supinf\_2 X1) \Rightarrow (( \\ (r1\_xxreal\_0 k6\_numbers X2) \Rightarrow (v6\_supinf\_2 (k6\_mesfunc1 X0 X1 X2))) \wedge \\ ((r1\_xxreal\_0 X2 k6\_numbers) \Rightarrow (v2\_mesfunc5 (k6\_mesfunc1 X0 X1 \\ X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X2 \\ (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{3}$$

Assume the following.

$$v3\_membered k1\_numbers \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((v1\_relat\_1 \\ & X1)\wedge((v4\_relat\_1 X1 X0)\wedge((v5\_relat\_1 X1 k7\_numbers)\wedge(v1\_funct\_1 \\ & X1))))\wedge(m1\_subset\_1 X2 k1\_numbers)))\Rightarrow((v1\_funct\_1 (k6\_mesfunc1 \\ & X0 X1 X2))\wedge(m1\_subset\_1 (k6\_mesfunc1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 k7\_numbers)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v3\_membered X1)\wedge \\ & (((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1))))\wedge(v1\_xreal\_0 X3)))\Rightarrow((v1\_funct\_1 (k26\_valued\_1 X0 X1 \\ & X2 X3))\wedge(m1\_subset\_1 (k26\_valued\_1 X0 X1 X2 X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 k1\_numbers)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge( \\ & m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))\Rightarrow \\ & ((v1\_funct\_1 (k1\_mesfunc5 X0 X1))\wedge(m1\_subset\_1 (k1\_mesfunc5 \\ & X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_funct\_1 X1)\wedge( \\ & m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))\Rightarrow( \\ & k1\_mesfunc5 X0 X1 = X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))\Rightarrow((v4\_relat\_1 X2 X0)\wedge(v5\_relat\_1 X2 X1)) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \end{aligned} \quad (11)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((v1\_funct\_1 X1)\wedge( \\ & m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers))))\Rightarrow( \\ & \forall X2.(m1\_subset\_1 X2 k1\_numbers)\Rightarrow((v6\_supinf\_2 X1)\Rightarrow(( \\ & (r1\_xxreal\_0 k6\_numbers X2)\Rightarrow(v6\_supinf\_2 (k26\_valued\_1 X0 k1\_numbers \\ & X1 X2))))\wedge((r1\_xxreal\_0 X2 k6\_numbers)\Rightarrow(v2\_mesfunc5 (k26\_valued\_1 \\ & X0 k1\_numbers X1 X2)))))) \end{aligned}$$