

## t11\_mesfunc2

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_prob\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_prob\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_numbers : \iota$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $r1\_mesfunc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_mesfunc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_mesfunc1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_mesfunc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_mesfunc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ( \\ m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \Rightarrow ( \\ \forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ X0 k7\_numbers)))) \Rightarrow (r2\_relset\_1 X0 k7\_numbers (k4\_mesfunc1 X0 \\ X1 X2) (k3\_mesfunc1 X0 X1 (k7\_mesfunc1 X0 X2)))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. \neg (v1\_xboole\_0 X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0 X1)) \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge \\ & ((v1\_prob\_1 X1 X0) \wedge ((v4\_prob\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k1\_zfmisc\_1 X0)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \Rightarrow (\forall X3.( \\ & (v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 \\ & k7\_numbers)))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 X1) \Rightarrow (((v3\_valued\_0 \\ & X2) \wedge ((v3\_valued\_0 X3) \wedge ((r1\_mesfunc1 X0 X1 X2 X4) \wedge (r1\_mesfunc1 \\ & X0 X1 X3 X4)))) \Rightarrow (r1\_mesfunc1 X0 X1 (k3\_mesfunc1 X0 X2 X3) X4)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge \\ & ((v1\_prob\_1 X1 X0) \wedge ((v4\_prob\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k1\_zfmisc\_1 X0)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \Rightarrow (\forall X3.( \\ & m2\_subset\_1 X3 (k1\_zfmisc\_1 X0) X1) \Rightarrow (\forall X4.(m1\_subset\_1 \\ & X4 k1\_numbers) \Rightarrow (((r1\_mesfunc1 X0 X1 X2 X3) \wedge (r1\_tarski X3 (k9\_xtuple\_0 \\ & X2))) \Rightarrow (r1\_mesfunc1 X0 X1 (k6\_mesfunc1 X0 X2 X4) X3)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ & m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \Rightarrow ( \\ & \forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow ((v3\_valued\_0 X1) \Rightarrow (v3\_valued\_0 \\ & (k6\_mesfunc1 X0 X1 X2)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 X0 \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 X2 \\ & (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))))\Rightarrow(\forall X2.(m2\_subset\_1 X2 X0 X1)\Leftrightarrow(m1\_subset\_1 X2 X1)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v4\_relat\_1 X1 X0))\Rightarrow(k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (12)$$

Assume the following.

$$\exists X0.(v1\_xboole\_0 X0)\wedge(v1\_xreal\_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_relat\_1 X1)\wedge(v4\_relat\_1 X1 X0)\wedge((v5\_relat\_1 X1 k7\_numbers)\wedge(v1\_funct\_1 X1))))\Rightarrow((v1\_funct\_1 (k7\_mesfunc1 X0 X1))\wedge(m1\_subset\_1 (k7\_mesfunc1 X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((v1\_relat\_1 X1)\wedge((v4\_relat\_1 X1 X0)\wedge((v5\_relat\_1 X1 k7\_numbers)\wedge(v1\_funct\_1 X1))))\wedge(m1\_subset\_1 X2 k1\_numbers))\Rightarrow((v1\_funct\_1 (k6\_mesfunc1 X0 X1 X2))\wedge(m1\_subset\_1 (k6\_mesfunc1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((v1\_relat\_1 X1)\wedge((v4\_relat\_1 X1 X0)\wedge((v5\_relat\_1 X1 k7\_numbers)\wedge(v1\_funct\_1 X1))))\wedge((v1\_relat\_1 X2)\wedge((v4\_relat\_1 X2 X0)\wedge((v5\_relat\_1 X2 k7\_numbers)\wedge(v1\_funct\_1 X2))))\Rightarrow((v1\_funct\_1 (k4\_mesfunc1 X0 X1 X2))\wedge(m1\_subset\_1 (k4\_mesfunc1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((v1\_relat\_1 X1)\wedge((v4\_relat\_1 X1 X0)\wedge((v5\_relat\_1 X1 k7\_numbers)\wedge(v1\_funct\_1 X1))))\wedge((v1\_relat\_1 X2)\wedge((v4\_relat\_1 X2 X0)\wedge((v5\_relat\_1 X2 k7\_numbers)\wedge(v1\_funct\_1 X2))))\Rightarrow((v1\_funct\_1 (k3\_mesfunc1 X0 X1 X2))\wedge(m1\_subset\_1 (k3\_mesfunc1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (m1\_subset\_1 (k1\_real\_1 X0) k1\_numbers) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_xboole\_0 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 X0))) \Rightarrow (v1\_xboole\_0 X2)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v4\_relat\_1 X2 X0) \wedge (v5\_relat\_1 X2 X1)) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (21)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge \\ & ((v1\_prob\_1 X1 X0) \wedge ((v4\_prob\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k1\_zfmisc\_1 X0)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k7\_numbers)))) \Rightarrow (\forall X3.( \\ & (v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 \\ & k7\_numbers)))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 X1) \Rightarrow (((v3\_valued\_0 \\ & X2) \wedge ((v3\_valued\_0 X3) \wedge ((r1\_mesfunc1 X0 X1 X2 X4) \wedge ((r1\_mesfunc1 \\ & X0 X1 X3 X4) \wedge (r1\_tarski X4 (k1\_relset\_1 X0 X3)))))) \Rightarrow (r1\_mesfunc1 \\ & X0 X1 (k4\_mesfunc1 X0 X2 X3 X4)))))) \end{aligned}$$