

# t10\_mesfun7c (TMMkVn- jYp9nSZWUsQn2ax5Gs5Q9RvXCJoNU)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_mesfunc8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_numbers : \iota$  be given. Let  $k4\_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_mesfunc8 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_mesfunc8 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k9\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge \\ & (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k7\_numbers)) \wedge ((v1\_mesfunc8 \\ & X1 X0 k7\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\ & (k4\_partfun1 X0 k7\_numbers)))))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 k1\_numbers k5\_numbers) \Rightarrow (r2\_relset\_1 X0 k7\_numbers (k4\_mesfunc5 \\ & X0 k7\_numbers (k4\_mesfunc8 X0 X1) X2) (k2\_mesfunc8 X0 (k10\_nat\_1 \\ & (k4\_partfun1 X0 k7\_numbers) X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 \\ & X1)\wedge((v1\_funct\_2 X1 k5\_numbers X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 k5\_numbers X0))))))\wedge(v7\_ordinal1 X2))\Rightarrow(k10\_nat\_1 \\ & X0 X1 X2 = k9\_nat\_1 X1 X2) \end{aligned} \quad (5)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge( \\ & (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers))\wedge((v1\_mesfunc8 \\ & X1 X0 k1\_numbers)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\ & (k4\_partfun1 X0 k1\_numbers))))))))\Rightarrow((v1\_funct\_1 (k1\_mesfun7c \\ & X0 X1))\wedge((v1\_funct\_2 (k1\_mesfun7c X0 X1) k5\_numbers (k4\_partfun1 \\ & X0 k7\_numbers))\wedge(v1\_mesfunc8 (k1\_mesfun7c X0 X1) X0 k7\_numbers))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\neg v1\_xboole\_0 (k4\_partfun1 X0 X1) \quad (8)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (9)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge( \\ & (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers))\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers))))))))\Rightarrow \\ & ((v1\_funct\_1 (k1\_mesfun7c X0 X1))\wedge((v1\_funct\_2 (k1\_mesfun7c \\ & X0 X1) k5\_numbers (k4\_partfun1 X0 k7\_numbers))\wedge(m1\_subset\_1 ( \\ & k1\_mesfun7c X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 \\ & X0 k7\_numbers)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((v1\_funct\_1 \\ & X1)\wedge((v1\_funct\_2 X1 k5\_numbers X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 k5\_numbers X0))))))\wedge(v7\_ordinal1 X2))\Rightarrow((v1\_funct\_1 \\ & (k10\_nat\_1 X0 X1 X2))\wedge((v1\_funct\_2 (k10\_nat\_1 X0 X1 X2) k5\_numbers \\ & X0)\wedge(m1\_subset\_1 (k10\_nat\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k5\_numbers X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)) \wedge (m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow \\ (k5\_mesfun7c X0 X1 = k4\_mesfunc8 X0 (k1\_mesfun7c X0 X1))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)) \wedge (m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow \\ (k3\_mesfun7c X0 X1 = k2\_mesfunc8 X0 (k1\_mesfun7c X0 X1))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)) \wedge (m1\_subset\_1 \\ X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow \\ (k1\_mesfun7c X0 X1 = X1)) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Leftrightarrow (X0 \in k4\_ordinal1) \quad (16)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)) \wedge ((v1\_mesfunc8 \\ X1 X0 k1\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\ (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow (\forall X2.(v7\_ordinal1 \\ X2) \Rightarrow (r2\_relset\_1 X0 k7\_numbers (k4\_mesfunc5 X0 k7\_numbers (k5\_mesfun7c \\ X0 X1) X2) (k3\_mesfun7c X0 (k10\_nat\_1 (k4\_partfun1 X0 k1\_numbers) \\ X1 X2)))))) \end{aligned}$$