

## t24\_mesfun9c

(TMHA1jcfkJtFw9Jq9XzMVRTiwmSFqbuy5pf)

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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  $k2\_numbers : \iota$  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  $v1\_mesfunc8 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k11\_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_comseq\_3 : \iota \Rightarrow \iota$  be given. Let  $k9\_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((v1\_funct\_1 X1) \wedge \\ & (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)) \wedge ((v1\_mesfunc8 \\ & X1 X0 k2\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\ & (k4\_partfun1 X0 k2\_numbers)))))) \Rightarrow ((v1\_funct\_1 (k11\_mesfun7c \\ & X0 X1)) \wedge ((v1\_funct\_2 (k11\_mesfun7c X0 X1) k5\_numbers (k4\_partfun1 \\ & X0 k1\_numbers)) \wedge (v1\_mesfunc8 (k11\_mesfun7c X0 X1) X0 k1\_numbers))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((v1\_funct\_1 X1) \wedge \\ & (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)) \wedge (m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)))))) \Rightarrow \\ & ((v1\_funct\_1 (k11\_mesfun7c X0 X1)) \wedge ((v1\_funct\_2 (k11\_mesfun7c \\ & X0 X1) k5\_numbers (k4\_partfun1 X0 k1\_numbers)) \wedge (m1\_subset\_1 ( \\ & k11\_mesfun7c X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 \\ & X0 k1\_numbers)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
& X2 k5\_numbers (k4\_partfun1 X0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 X1)))))) \Rightarrow ((v1\_mesfunc8 \\
& X2 X0 X1) \Leftrightarrow (\forall X3. (v7\_ordinal1 X3) \Rightarrow (\forall X4. (v7\_ordinal1 \\
& X4) \Rightarrow (k1\_relset\_1 X0 (k4\_mesfunc5 X0 X1 X2 X3) = k1\_relset\_1 X0 (k4\_mesfunc5 \\
& X0 X1 X2 X4))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ( \\
& (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)) \wedge (m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)))))) \Rightarrow \\
& (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers (k4\_partfun1 \\
& X0 k1\_numbers)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\
& (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow ((X2 = k11\_mesfun7c X0 X1) \Leftrightarrow ( \\
& \forall X3. (v7\_ordinal1 X3) \Rightarrow ((k1\_relset\_1 X0 (k4\_mesfunc5 X0 \\
& k1\_numbers X2 X3) = k1\_relset\_1 X0 (k4\_mesfunc5 X0 k2\_numbers X1 \\
& X3)) \wedge (\forall X4. (m1\_subset\_1 X4 X0) \Rightarrow ((X4 \in k1\_relset\_1 X0 (k4\_mesfunc5 \\
& X0 k1\_numbers X2 X3)) \Rightarrow (k1\_seq\_1 (k4\_mesfunc5 X0 k1\_numbers X2 X3) \\
& X4 = k1\_seq\_1 (k7\_comseq\_3 (k9\_mesfun7c X0 X1 X4) X3)))))))))
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ( \\
& (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)) \wedge (m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)))))) \Rightarrow \\
& ((v1\_mesfunc8 X1 X0 k2\_numbers) \Leftrightarrow (v1\_mesfunc8 (k11\_mesfun7c X0 \\
& X1) X0 k1\_numbers))
\end{aligned}$$