

t30\_mesfun9c (TM-  
PVdM6jxWFbW6D27bHyuXMP6DxnUKVJqBX)

October 27, 2020

Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  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  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_mesfunc5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_mesfun9c : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k2\_mesfun9c : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k11\_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_mesfun7c : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  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.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ( \\ & \quad (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)) \wedge (m1\_subset\_1 \\ & \quad X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow \\ & \quad (\forall X2. (v7\_ordinal1 X2) \Rightarrow (\forall X3. (v7\_ordinal1 X3) \Rightarrow ( \\ & \quad \forall X4. ((X4 \in k1\_relset\_1 X0 (k4\_mesfunc5 X0 k1\_numbers (k2\_mesfun9c \\ & \quad X0 X1) X2)) \wedge (r1\_xreal\_0 X3 X2)) \Rightarrow ((X4 \in k1\_relset\_1 X0 (k4\_mesfunc5 \\ & \quad X0 k1\_numbers (k2\_mesfun9c X0 X1) X3)) \wedge (X4 \in k1\_relset\_1 X0 (k4\_mesfunc5 \\ & \quad X0 k1\_numbers X1 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ( \\ & \quad (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)) \wedge (m1\_subset\_1 \\ & \quad X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)))))) \Rightarrow \\ & \quad ((r2\_funct\_2 k5\_numbers (k4\_partfun1 X0 k1\_numbers) (k2\_mesfun9c \\ & \quad X0 (k11\_mesfun7c X0 X1)) (k11\_mesfun7c X0 (k3\_mesfun9c X0 X1))) \wedge \\ & \quad (r2\_funct\_2 k5\_numbers (k4\_partfun1 X0 k1\_numbers) (k2\_mesfun9c \\ & \quad X0 (k12\_mesfun7c X0 X1)) (k12\_mesfun7c X0 (k3\_mesfun9c X0 X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1 X2)\wedge \\ & ((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X0 X1)))))\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 X0 X1)\wedge(m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))))\Rightarrow((r2\_funct\_2 X0 X1 X2 \\ & X3)\Leftrightarrow(X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge( \\ & (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k2\_numbers))\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k2\_numbers))))))\Rightarrow \\ & ((v1\_funct\_1 (k3\_mesfun9c X0 X1))\wedge((v1\_funct\_2 (k3\_mesfun9c \\ & X0 X1) k5\_numbers (k4\_partfun1 X0 k2\_numbers))\wedge(m1\_subset\_1 ( \\ & k3\_mesfun9c X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 \\ & X0 k2\_numbers)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge( \\ & (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k1\_numbers))\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k1\_numbers))))))\Rightarrow \\ & ((v1\_funct\_1 (k2\_mesfun9c X0 X1))\wedge((v1\_funct\_2 (k2\_mesfun9c \\ & X0 X1) k5\_numbers (k4\_partfun1 X0 k1\_numbers))\wedge(m1\_subset\_1 ( \\ & k2\_mesfun9c X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 \\ & X0 k1\_numbers)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((v1\_funct\_1 X1)\wedge( \\ & (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k2\_numbers))\wedge(m1\_subset\_1 \\ & X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k2\_numbers))))))\Rightarrow \\ & ((v1\_funct\_1 (k11\_mesfun7c X0 X1))\wedge((v1\_funct\_2 (k11\_mesfun7c \\ & X0 X1) k5\_numbers (k4\_partfun1 X0 k1\_numbers))\wedge(m1\_subset\_1 ( \\ & k11\_mesfun7c X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 \\ & X0 k1\_numbers)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\
& (v1\_funct\_2 X1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)) \wedge (m1\_subset\_1 \\
& X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 X0 k2\_numbers)))))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers (k4\_partfun1 \\
& X0 k1\_numbers)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers \\
& (k4\_partfun1 X0 k1\_numbers)))))) \Rightarrow ((X2 = k11\_mesfun7c X0 X1) \Leftrightarrow ( \\
& \forall X3.(v7\_ordinal1 X3) \Rightarrow ((k1\_relset\_1 X0 (k4\_mesfunc5 X0 \\
& k1\_numbers X2 X3) = k1\_relset\_1 X0 (k4\_mesfunc5 X0 k2\_numbers X1 \\
& X3)) \wedge (\forall X4.(m1\_subset\_1 X4 X0) \Rightarrow ((X4 \in k1\_relset\_1 X0 (k4\_mesfunc5 \\
& X0 k1\_numbers X2 X3)) \Rightarrow (k1\_seq\_1 (k4\_mesfunc5 X0 k1\_numbers X2 X3) \\
& X4 = k1\_seq\_1 (k7\_comseq\_3 (k9\_mesfun7c X0 X1 X4) X3))))))))) \\
& \hspace{15em} (8)
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow ( \\
& \forall X2.(v7\_ordinal1 X2) \Rightarrow (\forall X3.\forall X4.((v1\_funct\_1 \\
& X4) \wedge ((v1\_funct\_2 X4 k5\_numbers (k4\_partfun1 X0 k2\_numbers)) \wedge \\
& (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers (k4\_partfun1 \\
& X0 k2\_numbers)))))) \Rightarrow (((X3 \in k1\_relset\_1 X0 (k4\_mesfunc5 X0 k2\_numbers \\
& (k3\_mesfun9c X0 X4) X1)) \wedge (r1\_xreal\_0 X2 X1)) \Rightarrow ((X3 \in k1\_relset\_1 \\
& X0 (k4\_mesfunc5 X0 k2\_numbers (k3\_mesfun9c X0 X4) X2)) \wedge (X3 \in k1\_relset\_1 \\
& X0 (k4\_mesfunc5 X0 k2\_numbers X4 X2)))))))))
\end{aligned}$$