

t56\_cfunct\_1  
(TMSeSANEowr8GTPsBCeZ2sTA1r33Emeerwz)

October 27, 2020

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  $k2\_numbers : \iota$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_cfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k31\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_cfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k55\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. ((v1\_funct\_1 \\ & X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 k2\_numbers)))) \Rightarrow \\ & ((r2\_relset\_1 X1 k2\_numbers (k2\_partfun1 X1 k2\_numbers (k31\_valued\_1 \\ & X1 k2\_numbers X2) X0) (k31\_valued\_1 X1 k2\_numbers (k2\_partfun1 \\ & X1 k2\_numbers X2 X0))) \wedge ((r2\_relset\_1 X1 k2\_numbers (k2\_partfun1 \\ & X1 k2\_numbers (k2\_cfunct\_1 X1 X2) X0) (k2\_cfunct\_1 X1 (k2\_partfun1 \\ & X1 k2\_numbers X2 X0))) \wedge (r2\_relset\_1 X1 k1\_numbers (k2\_partfun1 \\ & X1 k1\_numbers (k55\_valued\_1 X1 k2\_numbers X2) X0) (k55\_valued\_1 \\ & X1 k2\_numbers (k2\_partfun1 X1 k2\_numbers X2 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. ((v1\_funct\_1 \\ & X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 k2\_numbers)))) \Rightarrow \\ & (\forall X3. ((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & X1 k2\_numbers)))) \Rightarrow ((r2\_relset\_1 X1 k2\_numbers (k2\_partfun1 X1 \\ & k2\_numbers (k19\_valued\_1 X1 k2\_numbers k2\_numbers X2 X3) X0) (k19\_valued\_1 \\ & X1 k2\_numbers k2\_numbers (k2\_partfun1 X1 k2\_numbers X2 X0) (k2\_partfun1 \\ & X1 k2\_numbers X3 X0))) \wedge ((r2\_relset\_1 X1 k2\_numbers (k2\_partfun1 \\ & X1 k2\_numbers (k19\_valued\_1 X1 k2\_numbers k2\_numbers X2 X3) X0) \\ & (k19\_valued\_1 X1 k2\_numbers k2\_numbers (k2\_partfun1 X1 k2\_numbers \\ & X2 X0) X3)) \wedge (r2\_relset\_1 X1 k2\_numbers (k2\_partfun1 X1 k2\_numbers \\ & (k19\_valued\_1 X1 k2\_numbers k2\_numbers X2 X3) X0) (k19\_valued\_1 \\ & X1 k2\_numbers k2\_numbers X2 (k2\_partfun1 X1 k2\_numbers X3 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\ m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k2\_numbers)))) \Rightarrow ( \\ \forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ X0 k2\_numbers)))) \Rightarrow (r2\_relset\_1 X0 k2\_numbers (k1\_cfunct\_1 X0 \\ X1 X2) (k19\_valued\_1 X0 k2\_numbers k2\_numbers X1 (k2\_cfunct\_1 X0 \\ X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X2 \\ (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((v1\_funct\_1 X2) \wedge \\ (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))) \Rightarrow (k2\_partfun1 \\ X0 X1 X2 X3 = k5\_relat\_1 X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$v1\_membered k2\_numbers \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((v1\_funct\_1 X2) \wedge \\ (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((v1\_funct\_1 \\ (k2\_partfun1 X0 X1 X2 X3)) \wedge (m1\_subset\_1 (k2\_partfun1 X0 X1 X2 X3) \\ (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))) \end{aligned} \quad (7)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0) \wedge (((v1\_funct\_1 \\ X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k2\_numbers)))) \wedge \\ ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 \\ k2\_numbers)))))) \Rightarrow ((v1\_funct\_1 (k1\_cfunct\_1 X0 X1 X2)) \wedge (m1\_subset\_1 \\ (k1\_cfunct\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k2\_numbers)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v1\_membered \\
& X1)\wedge((v1\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X2))))))\Rightarrow((v1\_funct\_1 (k19\_valued\_1 X0 X1 X2 \\
& X3 X4)\wedge(m1\_subset\_1 (k19\_valued\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 k2\_numbers))))))
\end{aligned} \tag{10}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.\forall X1.(\neg v1\_xboole\_0 X1)\Rightarrow(\forall X2.((v1\_funct\_1 \\
& X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 k2\_numbers))))\Rightarrow \\
& (\forall X3.((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X1 k2\_numbers))))\Rightarrow((r2\_relset\_1 X1 k2\_numbers (k2\_partfun1 X1 \\
& k2\_numbers (k1\_cfunct\_1 X1 X2 X3) X0) (k1\_cfunct\_1 X1 (k2\_partfun1 \\
& X1 k2\_numbers X2 X0) (k2\_partfun1 X1 k2\_numbers X3 X0)))\wedge((r2\_relset\_1 \\
& X1 k2\_numbers (k2\_partfun1 X1 k2\_numbers (k1\_cfunct\_1 X1 X2 X3) \\
& X0) (k1\_cfunct\_1 X1 (k2\_partfun1 X1 k2\_numbers X2 X0) X3))\wedge(r2\_relset\_1 \\
& X1 k2\_numbers (k2\_partfun1 X1 k2\_numbers (k1\_cfunct\_1 X1 X2 X3) \\
& X0) (k1\_cfunct\_1 X1 X2 (k2\_partfun1 X1 k2\_numbers X3 X0))))))
\end{aligned}$$