

## t55\_cfunct\_1

(TMPv9XBqkA44MLdEQ54czA7hQBcD5f5T8Sr)

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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  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k46\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k2\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_membered : \iota \Rightarrow o$  be given. Let  $k45\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k30\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Assume the following.

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

Assume the following.

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

Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v1\_membered \\
& X1)\wedge((v1\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X2))))))\Rightarrow(k46\_valued\_1 X0 X1 X2 X3 X4 = k45\_valued\_1 \\
& X3 X4)
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((v1\_membered X1)\wedge((v1\_funct\_1 \\
& X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow(k31\_valued\_1 \\
& X0 X1 X2 = k30\_valued\_1 X2)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v1\_membered \\
& X1)\wedge((v1\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X2))))))\Rightarrow(k2\_valued\_1 X0 X1 X2 X3 X4 = k1\_valued\_1 \\
& X3 X4)
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((v1\_funct\_1 X2)\wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow(k2\_partfun1 \\
& X0 X1 X2 X3 = k5\_relat\_1 X2 X3)
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge(v1\_valued\_0 X0))\Rightarrow((v1\_relat\_1 (k5\_relat\_1 X0 X1))\wedge(v1\_valued\_0 (k5\_relat\_1 X0 X1))) \quad (8)$$

Assume the following.

$$v1\_membered k2\_numbers \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v1\_membered X1)\wedge((v1\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2))))))))\Rightarrow((v1\_funct\_1 (k46\_valued\_1 X0 X1 X2 X3 X4))\wedge(m1\_subset\_1 (k46\_valued\_1 X0 X1 X2 X3 X4) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k2\_numbers)))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_membered X1)\wedge((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))))\Rightarrow((v1\_funct\_1 (k31\_valued\_1 X0 X1 X2))\wedge(m1\_subset\_1 (k31\_valued\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k2\_numbers)))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\Rightarrow((v1\_funct\_1 (k2\_partfun1 X0 X1 X2 X3))\wedge(m1\_subset\_1 (k2\_partfun1 X0 X1 X2 X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))) \quad (12)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_valued\_0 X0)))\Rightarrow((\forall X1.((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_valued\_0 X1))))\Rightarrow(k45\_valued\_1 X0 X1 = k1\_valued\_1 X0 (k30\_valued\_1 X1))) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v1\_membered X1)\wedge((v1\_membered X2)\wedge(((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))))\wedge((v1\_funct\_1 X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X2))))))))\Rightarrow(k2\_valued\_1 X0 X1 X2 X3 X4 = k2\_valued\_1 X0 X1 X2 X4 X3) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_membered\ X1)\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_valued\_0\ X2)) \quad (16)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.\forall X1.(\neg v1\_xboole\_0\ X1)\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ k2\_numbers))))\Rightarrow \\ & (\forall X3.((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ k2\_numbers))))\Rightarrow((r2\_reset\_1\ X1\ k2\_numbers\ (k2\_partfun1\ X1 \\ k2\_numbers\ (k46\_valued\_1\ X1\ k2\_numbers\ k2\_numbers\ X2\ X3)\ X0)\ (k46\_valued\_1 \\ X1\ k2\_numbers\ k2\_numbers\ (k2\_partfun1\ X1\ k2\_numbers\ X2\ X0)\ (k2\_partfun1 \\ X1\ k2\_numbers\ X3\ X0)))\wedge((r2\_reset\_1\ X1\ k2\_numbers\ (k2\_partfun1 \\ X1\ k2\_numbers\ (k46\_valued\_1\ X1\ k2\_numbers\ k2\_numbers\ X2\ X3)\ X0) \\ (k46\_valued\_1\ X1\ k2\_numbers\ k2\_numbers\ (k2\_partfun1\ X1\ k2\_numbers \\ X2\ X0)\ X3))\wedge(r2\_reset\_1\ X1\ k2\_numbers\ (k2\_partfun1\ X1\ k2\_numbers \\ (k46\_valued\_1\ X1\ k2\_numbers\ k2\_numbers\ X2\ X3)\ X0)\ (k46\_valued\_1 \\ X1\ k2\_numbers\ k2\_numbers\ X2\ (k2\_partfun1\ X1\ k2\_numbers\ X3\ X0)))))) \end{aligned}$$