

## t55\_rfunct\_1

(TMJoAfyTjjXkzZeGfHe2aw7TdhrgA76pmCz)

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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  $k1\_numbers : \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k3\_rfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_rfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k47\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k20\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k1\_rfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k18\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_rfunct\_1 : \iota \Rightarrow \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. (\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge ( \\
 & \quad m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))) \Rightarrow ( \\
 & \quad (v1\_partfun1 (k6\_rfunct\_1 X0 k1\_numbers X1) X0) \Leftrightarrow ((k8\_relset\_1 \\
 & \quad X0 k1\_numbers X1 (k1\_tarski k6\_numbers) = k1\_xboole\_0) \wedge (v1\_partfun1 \\
 & \quad \quad X1 X0)))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge ( \\
& \quad m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))) \Rightarrow ( \\
& \quad \forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad X0 k1\_numbers)))) \Rightarrow (((v1\_partfun1 X1 X0) \wedge (v1\_partfun1 X2 X0)) \Rightarrow \\
& \quad (v1\_partfun1 (k3\_valued\_1 X0 k1\_numbers k1\_numbers X1 X2) X0)) \wedge \\
& \quad (((v1\_partfun1 (k3\_valued\_1 X0 k1\_numbers k1\_numbers X1 X2) X0) \Rightarrow \\
& \quad ((v1\_partfun1 X1 X0) \wedge (v1\_partfun1 X2 X0))) \wedge (((v1\_partfun1 X1 \\
& \quad X0) \wedge (v1\_partfun1 X2 X0)) \Rightarrow (v1\_partfun1 (k47\_valued\_1 X0 k1\_numbers \\
& \quad k1\_numbers X1 X2) X0)) \wedge (((v1\_partfun1 (k47\_valued\_1 X0 k1\_numbers \\
& \quad k1\_numbers X1 X2) X0) \Rightarrow ((v1\_partfun1 X1 X0) \wedge (v1\_partfun1 X2 X0))) \wedge \\
& \quad (((v1\_partfun1 X1 X0) \wedge (v1\_partfun1 X2 X0)) \Rightarrow (v1\_partfun1 (k20\_valued\_1 \\
& \quad X0 k1\_numbers k1\_numbers X1 X2) X0)) \wedge ((v1\_partfun1 (k20\_valued\_1 \\
& \quad X0 k1\_numbers k1\_numbers X1 X2) X0) \Rightarrow ((v1\_partfun1 X1 X0) \wedge (v1\_partfun1 \\
& \quad X2 X0)))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow \\
& \quad (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_valued\_0 \\
& \quad X1)))) \Rightarrow (k1\_rfunct\_1 X0 X1 = k18\_valued\_1 X0 (k4\_rfunct\_1 X1))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((v3\_membered X1) \wedge ((v1\_funct\_1 \\
& \quad X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))) \Rightarrow (k6\_rfunct\_1 \\
& \quad X0 X1 X2 = k4\_rfunct\_1 X2)
\end{aligned} \tag{4}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.((v3\_membered X1) \wedge \\
& \quad (((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad X0 X1)))) \wedge ((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad X0 X1)))))) \Rightarrow (k3\_rfunct\_1 X0 X1 X2 X3 = k1\_rfunct\_1 X2 X3)
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered \\
& \quad X1) \wedge ((v3\_membered X2) \wedge (((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 X0 X1)))) \wedge ((v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 X0 X2)))))) \Rightarrow (k20\_valued\_1 X0 X1 X2 X3 X4 = k18\_valued\_1 \\
& \quad X3 X4)
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(v3\_membered\ X1)\Rightarrow(v3\_valued\_0\ (k2\_zfmisc\_1\ X0\ X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1\ (k2\_zfmisc\_1\ X0\ X1) \quad (9)$$

Assume the following.

$$v3\_membered\ k1\_numbers \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1 \\ & X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(v1\_valued\_0\ X1))))))\wedge \\ & ((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge((v1\_partfun1 \\ & X2\ X0)\wedge(v1\_valued\_0\ X2))))))\Rightarrow((v1\_relat\_1\ (k18\_valued\_1\ X1\ X2))\wedge \\ & ((v1\_funct\_1\ (k18\_valued\_1\ X1\ X2))\wedge(v1\_partfun1\ (k18\_valued\_1 \\ & X1\ X2)\ X0))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v3\_membered\ X1)\wedge((v1\_funct\_1 \\ & X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))))\Rightarrow((v1\_funct\_1 \\ & (k6\_rfunct\_1\ X0\ X1\ X2))\wedge(m1\_subset\_1\ (k6\_rfunct\_1\ X0\ X1\ X2)\ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1\ X0\ k1\_numbers)))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v3\_valued\_0\ X0))\Rightarrow((v1\_relat\_1\ X0)\wedge(v1\_valued\_0\ X0)) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v4\_relat\_1\ X2\ X0)\wedge(v5\_relat\_1\ X2\ X1)) \quad (14)$$

Assume the following.

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

Assume the following.

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

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_valued\_0\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_valued\_0\ X1)) \quad (17)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge \\ m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 k1\_numbers)))) \Rightarrow ( \\ \forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ X0 k1\_numbers)))) \Rightarrow (((v1\_partfun1 X1 X0) \wedge ((k8\_relset\_1 X0 k1\_numbers \\ X2 (k1\_tarski k6\_numbers) = k1\_xboole\_0) \wedge (v1\_partfun1 X2 X0))) \Leftrightarrow \\ (v1\_partfun1 (k3\_rfunct\_1 X0 k1\_numbers X1 X2) X0)))) \end{aligned}$$