t56_rfunct_1 (TMN5mNhEFo9Y2TMMpE3mY1StfxPHPhVispr)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ 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 $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k47\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_valued\_0 : \iota \Rightarrow o$ be given. Let $k18\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $k45\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_membered : \iota \Rightarrow o$ be given. Let $k1\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3\_valued\_0 : \iota \Rightarrow o$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_valued\_0\ X0))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_valued\_0\ X1))) \Rightarrow (\forall X2.k1\_funct\_1\ (k18\_valued\_1\ X0\ X1)\ X2 = k3\_xcmplx\_0\ (k1\_funct\_1\ X0\ X2)\ (k1\_funct\_1\ X1\ X2))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{2}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0) \wedge ((v1\_funct\_1\ X0) \wedge (v1\_valued\_0\ X0))) \Rightarrow (\forall X1.((v1\_relat\_1\ X1) \wedge ((v1\_funct\_1\ X1) \wedge (v1\_valued\_0\ X1))) \Rightarrow (\forall X2.(X2 \in k9\_xtuple\_0\ (k45\_valued\_1\ X0\ X1)) \Rightarrow (k1\_funct\_1\ (k45\_valued\_1\ X0\ X1)\ X2 = k6\_xcmplx\_0\ (k1\_funct\_1\ X0\ X2)\ (k1\_funct\_1\ X1\ X2)))) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered\ X1)\wedge((v3\_membered\ X2)\wedge(((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\wedge((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X2)))))))\Rightarrow(k47\_valued\_1\ X0\ X1\ X2\ X3\ X4 = k45\_valued\_1\ X3\ X4) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered\ X1)\wedge((v3\_membered\ X2)\wedge(((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\wedge((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X2)))))))\Rightarrow(k3\_valued\_1\ X0\ X1\ X2\ X3\ X4 = k1\_valued\_1\ X3\ X4) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3\_membered\ X1)\wedge((v3\_membered\ X2)\wedge(((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\wedge((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X2)))))))\Rightarrow(k20\_valued\_1\ X0\ X1\ X2\ X3\ X4 = k18\_valued\_1\ X3\ X4) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow(k1\_relset\_1\ X0\ X1 = k9\_xtuple\_0\ X1) \tag{7}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.v1\_relat\_1\ (k2\_zfmisc\_1\ X0\ X1) \tag{9}$$

Assume the following.

$$v3\_membered\ k1\_numbers \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(v1\_valued\_0\ X1)))))\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge((v1\_partfun1\ X2\ X0)\wedge(v1\_valued\_0\ X2))))))\Rightarrow((v1\_relat\_1\ (k45\_valued\_1\ X1\ X2))\wedge((v1\_funct\_1\ (k45\_valued\_1\ X1\ X2))\wedge(v1\_partfun1\ (k45\_valued\_1\ X1\ X2)\ X0))) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1)\wedge((v4\_relat\_1\ X1\ X0)\wedge((v1\_funct\_1\ X1)\wedge((v1\_partfun1\ X1\ X0)\wedge(v1\_valued\_0\ X1)))))\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge((v1\_partfun1\ X2\ X0)\wedge(v1\_valued\_0\ X2))))))\Rightarrow((v1\_relat\_1\ (k1\_valued\_1\ X1\ X2))\wedge((v1\_funct\_1\ (k1\_valued\_1\ X1\ X2))\wedge(v1\_partfun1\ (k1\_valued\_1\ X1\ X2)\ X0))) \tag{12}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_valued\_0\ X1)))\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_valued\_0\ X2)))))\Rightarrow((v1\_relat\_1\ (k45\_valued\_1\ X1\ X2))\wedge((v4\_relat\_1\ (k45\_valued\_1\ X1\ X2)\ X0)\wedge(v1\_funct\_1\ (k45\_valued\_1\ X1\ X2)))) \tag{13}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_valued\_0\ X1)))\wedge((v1\_relat\_1\ X2)\wedge((v4\_relat\_1\ X2\ X0)\wedge((v1\_funct\_1\ X2)\wedge(v1\_valued\_0\ X2)))))\Rightarrow((v1\_relat\_1\ (k1\_valued\_1\ X1\ X2))\wedge((v4\_relat\_1\ (k1\_valued\_1\ X1\ X2)\ X0)\wedge(v1\_funct\_1\ (k1\_valued\_1\ X1\ X2)))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_valued\_0\ X0)))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_valued\_0\ X1))))\Rightarrow((v1\_relat\_1\ (k45\_valued\_1\ X0\ X1))\wedge(v1\_funct\_1\ (k45\_valued\_1\ X0\ X1))) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_valued\_0\ X0)))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_valued\_0\ X1))))\Rightarrow((v1\_relat\_1\ (k1\_valued\_1\ X0\ X1))\wedge(v1\_funct\_1\ (k1\_valued\_1\ X0\ X1))) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow((v1\_partfun1\ X1\ X0)\Leftrightarrow(k1\_relset\_1\ X0\ X1 = X0)) \tag{17}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_valued\_0\ X0)))\Rightarrow (\forall X1.((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_valued\_0\ X1)))\Rightarrow(\forall X2.((v1\_relat\_1\ X2)\wedge(v1\_funct\_1\ X2))\Rightarrow((X2 = k1\_valued\_1\ X0\ X1)\Leftrightarrow((k9\_xtuple\_0\ X2 = k3\_xboole\_0\ (k9\_xtuple\_0\ X0)\ (k9\_xtuple\_0\ X1))\wedge(\forall X3.(X3 \in k9\_xtuple\_0\ X2)\Rightarrow(k1\_funct\_1\ X2\ X3 = k2\_xcmplx\_0\ (k1\_funct\_1\ X0\ X3)\ (k1\_funct\_1\ X1\ X3)))))))) \tag{18}$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_valued\_0\ X0)))\wedge((v1\_relat\_1\ X1)\wedge((v1\_funct\_1\ X1)\wedge(v1\_valued\_0\ X1))))\Rightarrow (k1\_valued\_1\ X0\ X1 = k1\_valued\_1\ X1\ X0) \tag{19}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v3\_valued\_0\ X0))\Rightarrow((v1\_relat\_1\ X0)\wedge(v1\_valued\_0\ X0)) \tag{20}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v4\_relat\_1\ X2\ X0)\wedge(v5\_relat\_1\ X2\ X1)) \tag{21}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_relat\_1\ X1)) \tag{22}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_valued\_0\ X0))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))\Rightarrow(v1\_valued\_0\ X1)) \tag{23}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow(\forall X2.((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))\Rightarrow(\forall X3.((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ k1\_numbers))))\Rightarrow(((v1\_partfun1\ X2\ X0)\wedge(v1\_partfun1\ X3\ X0))\Rightarrow((k1\_funct\_1\ (k3\_valued\_1\ X0\ k1\_numbers\ k1\_numbers\ X2\ X3)\ X1 = k2\_xcmplx\_0\ (k1\_funct\_1\ X2\ X1)\ (k1\_funct\_1\ X3\ X1))\wedge((k1\_funct\_1\ (k47\_valued\_1\ X0\ k1\_numbers\ k1\_numbers\ X2\ X3)\ X1 = k6\_xcmplx\_0\ (k1\_funct\_1\ X2\ X1)\ (k1\_funct\_1\ X3\ X1))\wedge(k1\_funct\_1\ (k20\_valued\_1\ X0\ k1\_numbers\ k1\_numbers\ X2\ X3)\ X1 = k3\_xcmplx\_0\ (k1\_funct\_1\ X2\ X1)\ (k1\_funct\_1\ X3\ X1))))))))$$