t54_valued_2 (TMPUFVV-gio8w7VSLszEV7ecHYAXD4VfTGmh)

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Let $v1\_valued\_2 : \iota \Rightarrow o$ be given. Let $v1\_xcmplx\_0 : \iota \Rightarrow o$ 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 $v2\_relat\_1 : \iota \Rightarrow o$ be given. Let $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_valued\_2 : \iota \Rightarrow \iota$ be given. Let $k1\_valued\_2 : \iota \Rightarrow \iota$ be given. Let $k42\_valued\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_valued\_0 : \iota \Rightarrow o$ be given. Let $k24\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $k41\_valued\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Let $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k10\_xtuple\_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v1\_xcmplx\_0\ X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0\ X1) \Rightarrow (\forall X2.((v1\_relat\_1\ X2) \wedge ((v1\_funct\_1\ X2) \wedge (v1\_valued\_0\ X2))) \Rightarrow (((v2\_relat\_1\ X2) \wedge (k24\_valued\_1\ X2\ X0 = k24\_valued\_1\ X2\ X1)) \Rightarrow ((X2 = k1\_xboole\_0) \vee (X0 = X1))))))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\neg (v1\_xboole\_0\ X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0\ X1)) \tag{2}$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1\_valued\_2\ X1) \wedge (((v1\_funct\_1\ X2) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))) \wedge (v1\_xcmplx\_0\ X3))) \Rightarrow (k42\_valued\_2\ X0\ X1\ X2\ X3 = k41\_valued\_2\ X1\ X2\ X3) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow(k1\_relset\_1\ X0\ X1 = k9\_xtuple\_0\ X1) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v1\_relat\_1\ X0))\Rightarrow(\neg v1\_xboole\_0\ (k9\_xtuple\_0\ X0)) \tag{6}$$

Assume the following.

$$v1\_xboole\_0\ k1\_xboole\_0 \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1\_valued\_2\ X2)\wedge((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X2)))))\Rightarrow(v1\_valued\_0\ (k1\_funct\_1\ X3\ X1)) \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1\_valued\_2\ X2)\wedge((v1\_funct\_1\ X3)\wedge(m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X2)))))\Rightarrow((v1\_relat\_1\ (k1\_funct\_1\ X3\ X1))\wedge(v1\_funct\_1\ (k1\_funct\_1\ X3\ X1))) \tag{9}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1\_valued\_2\ X1)\wedge(((v1\_funct\_1\ X2)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\wedge(v1\_xcmplx\_0\ X3)))\Rightarrow((v1\_funct\_1\ (k42\_valued\_2\ X0\ X1\ X2\ X3))\wedge(m1\_subset\_1\ (k42\_valued\_2\ X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ (k2\_valued\_2\ (k1\_valued\_2\ X1))))))) \tag{10}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_valued\_2\ X0)\wedge(((v1\_relat\_1\ X1)\wedge((v5\_relat\_1\ X1\ X0)\wedge(v1\_funct\_1\ X1)))\wedge(v1\_xcmplx\_0\ X2)))\Rightarrow((v1\_relat\_1\ (k41\_valued\_2\ X0\ X1\ X2))\wedge(v1\_funct\_1\ (k41\_valued\_2\ X0\ X1\ X2))) \tag{11}$$

Assume the following.

$$\forall X0.(v1\_relat\_1\ X0)\Rightarrow((v2\_relat\_1\ X0)\Leftrightarrow(\neg k1\_xboole\_0 \in k10\_xtuple\_0\ X0)) \tag{12}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0))\Rightarrow(\forall X1.(X1 = k10\_xtuple\_0\ X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(\exists X3.(X3 \in k9\_xtuple\_0\ X0)\wedge(X2 = k1\_funct\_1\ X0\ X3))))) \tag{13}$$

Assume the following.

$$\forall X0.(v1\_valued\_2\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge((v5\_relat\_1\ X1\ X0)\wedge(v1\_funct\_1\ X1)))\Rightarrow(\forall X2.(v1\_xcmplx\_0\ X2)\Rightarrow(\forall X3.((v1\_relat\_1\ X3)\wedge(v1\_funct\_1\ X3))\Rightarrow((X3 = k41\_valued\_2\ X0\ X1\ X2)\Leftrightarrow((k9\_xtuple\_0\ X3 = k9\_xtuple\_0\ X1)\wedge(\forall X4.(X4 \in k9\_xtuple\_0\ X3)\Rightarrow(k1\_funct\_1\ X3\ X4 = k24\_valued\_1\ (k1\_funct\_1\ X1\ X4)\ X2)))))))) \tag{14}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Leftrightarrow(\forall X1.\neg X1 \in X0) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow((v4\_relat\_1\ X2\ X0)\wedge(v5\_relat\_1\ X2\ X1)) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))\Rightarrow(v1\_relat\_1\ X2) \tag{17}$$

Theorem 1

$$\forall X0.\forall X1.(v1\_valued\_2\ X1)\Rightarrow(\forall X2.(v1\_xcmplx\_0\ X2)\Rightarrow(\forall X3.(v1\_xcmplx\_0\ X3)\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))\Rightarrow(((v2\_relat\_1\ X4)\wedge((\forall X5.(X5 \in k1\_relset\_1\ X0\ X4)\Rightarrow(v2\_relat\_1\ (k1\_funct\_1\ X4\ X5)))\wedge(r2\_relset\_1\ X0\ (k2\_valued\_2\ (k1\_valued\_2\ X1))\ (k42\_valued\_2\ X0\ X1\ X4\ X2)\ (k42\_valued\_2\ X0\ X1\ X4\ X3))))\Rightarrow((X4 = k1\_xboole\_0)\vee(X2 = X3))))))$$