t57_vfunct_1 (TMY-wDx1UA1ug4HNNJ22498DEDvhtGpMmUt9)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v13\_algstr\_0 : \iota \Rightarrow o$ be given. Let $v2\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v4\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v5\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v6\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v7\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v8\_rlvect\_1 : \iota \Rightarrow o$ be given. Let $v3\_normsp\_0 : \iota \Rightarrow o$ be given. Let $v4\_normsp\_0 : \iota \Rightarrow o$ be given. Let $v2\_normsp\_1 : \iota \Rightarrow o$ be given. Let $l1\_normsp\_1 : \iota \Rightarrow o$ 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 $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $r1\_vfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3\_funct\_1 : \iota \Rightarrow o$ be given. Let $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_vfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.(\neg v1\_xboole\_0\ X1) \Rightarrow (\forall X2.((\neg v2\_struct\_0\ X2) \wedge ((v13\_algstr\_0\ X2) \wedge ((v2\_rlvect\_1\ X2) \wedge ((v3\_rlvect\_1\ X2) \wedge ((v4\_rlvect\_1\ X2) \wedge ((v5\_rlvect\_1\ X2) \wedge ((v6\_rlvect\_1\ X2) \wedge ((v7\_rlvect\_1\ X2) \wedge ((v8\_rlvect\_1\ X2) \wedge ((v3\_normsp\_0\ X2) \wedge ((v4\_normsp\_0\ X2) \wedge ((v2\_normsp\_1\ X2) \wedge (l1\_normsp\_1\ X2))))))))))))) \Rightarrow (\forall X3.((v1\_funct\_1\ X3) \wedge (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X1\ (u1\_struct\_0\ X2))))) \Rightarrow ((v3\_funct\_1\ (k2\_partfun1\ X1\ (u1\_struct\_0\ X2)\ X3\ X0)) \Rightarrow (r1\_vfunct\_1\ X1\ X2\ X3\ X0)))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(\neg v1\_xboole\_0\ X2) \Rightarrow (\forall X3.((\neg v2\_struct\_0\ X3) \wedge ((v13\_algstr\_0\ X3) \wedge ((v2\_rlvect\_1\ X3) \wedge ((v3\_rlvect\_1\ X3) \wedge ((v4\_rlvect\_1\ X3) \wedge ((v5\_rlvect\_1\ X3) \wedge ((v6\_rlvect\_1\ X3) \wedge ((v7\_rlvect\_1\ X3) \wedge ((v8\_rlvect\_1\ X3) \wedge ((v3\_normsp\_0\ X3) \wedge ((v4\_normsp\_0\ X3) \wedge ((v2\_normsp\_1\ X3) \wedge (l1\_normsp\_1\ X3))))))))))))) \Rightarrow (\forall X4.((v1\_funct\_1\ X4) \wedge (m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X2\ (u1\_struct\_0\ X3))))) \Rightarrow (\forall X5.((v1\_funct\_1\ X5) \wedge (m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X2\ (u1\_struct\_0\ X3))))) \Rightarrow (((r1\_vfunct\_1\ X2\ X3\ X4\ X0) \wedge (r1\_vfunct\_1\ X2\ X3\ X5\ X1)) \Rightarrow (r1\_vfunct\_1\ X2\ X3\ (k2\_vfunct\_1\ X2\ X3\ X4\ X5)\ (k3\_xboole\_0\ X0\ X1)))))) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.k3\_xboole\_0\ X0\ X1 = k3\_xboole\_0\ X1\ X0 \tag{3}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.(\neg v1\_xboole\_0\ X2)\Rightarrow(\forall X3.((\neg v2\_struct\_0\ X3)\wedge((v13\_algstr\_0\ X3)\wedge((v2\_rlvect\_1\ X3)\wedge((v3\_rlvect\_1\ X3)\wedge((v4\_rlvect\_1\ X3)\wedge((v5\_rlvect\_1\ X3)\wedge((v6\_rlvect\_1\ X3)\wedge((v7\_rlvect\_1\ X3)\wedge((v8\_rlvect\_1\ X3)\wedge((v3\_normsp\_0\ X3)\wedge((v4\_normsp\_0\ X3)\wedge((v2\_normsp\_1\ X3)\wedge(l1\_normsp\_1\ X3))))))))))))\Rightarrow(\forall X4.((v1\_funct\_1\ X4)\wedge(m1\_subset\_1\ X4\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X2\ (u1\_struct\_0\ X3)))))\Rightarrow(\forall X5.((v1\_funct\_1\ X5)\wedge(m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X2\ (u1\_struct\_0\ X3)))))\Rightarrow(((r1\_vfunct\_1\ X2\ X3\ X4\ X0)\wedge(v3\_funct\_1\ (k2\_partfun1\ X2\ (u1\_struct\_0\ X3)\ X5\ X1)))\Rightarrow((r1\_vfunct\_1\ X2\ X3\ (k2\_vfunct\_1\ X2\ X3\ X4\ X5)\ (k3\_xboole\_0\ X0\ X1))\wedge(r1\_vfunct\_1\ X2\ X3\ (k2\_vfunct\_1\ X2\ X3\ X5\ X4)\ (k3\_xboole\_0\ X0\ X1)))))))$$