

## t40\_vfunct\_1

(TMGpMF6F6Rkzisc3BDB1PCPT2eyx4XvoNoa)

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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  $v2\_struct\_0 : \iota \Rightarrow o$  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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_vfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_normsp\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_normsp\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $k2\_normsp\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $l2\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X0) \wedge (((\neg v2\_struct\_0 X1) \wedge (l1\_normsp\_0 X1)) \wedge ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1)))))))) \Rightarrow (k3\_normsp\_0 X0 X1 X2 = k2\_normsp\_0 X1 X2) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 X0))) \Rightarrow (k1\_seq\_1 X0 X1 = k1\_funct\_1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1)\wedge(v4\_relat\_1 X1 X0))\Rightarrow(k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \quad (4)$$

Assume the following.

$$\forall X0.(l2\_normsp\_0 X0)\Rightarrow((l1\_normsp\_0 X0)\wedge(l2\_struct\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l1\_rlvect\_1 X0)\Rightarrow(l2\_algstr\_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_normsp\_1 X0)\Rightarrow((l1\_rlvect\_1 X0)\wedge(l2\_normsp\_0 X0)) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((\neg v2\_struct\_0 \\ X1)\wedge(l2\_algstr\_0 X1))\wedge((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1)))))))\Rightarrow((v1\_funct\_1 (k5\_vfunct\_1 \\ X0 X1 X2))\wedge(m1\_subset\_1 (k5\_vfunct\_1 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ X0 (u1\_struct\_0 X1)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge(((\neg v2\_struct\_0 \\ X1)\wedge(l1\_normsp\_0 X1))\wedge((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1)))))))\Rightarrow((v1\_funct\_1 (k3\_normsp\_0 \\ X0 X1 X2))\wedge(m1\_subset\_1 (k3\_normsp\_0 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ X0 k1\_numbers)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0)\Rightarrow(\forall X1.((\neg v2\_struct\_0 X1)\wedge \\ (l2\_algstr\_0 X1))\Rightarrow(\forall X2.((v1\_funct\_1 X2)\wedge(m1\_subset\_1 \\ X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1))))))\Rightarrow(\forall X3. \\ ((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 \\ (u1\_struct\_0 X1))))))\Rightarrow((X3 = k5\_vfunct\_1 X0 X1 X2)\Leftrightarrow((k1\_relset\_1 \\ X0 X3 = k1\_relset\_1 X0 X2)\wedge(\forall X4.(m1\_subset\_1 X4 X0)\Rightarrow((X4 \in \\ k1\_relset\_1 X0 X3)\Rightarrow(k7\_partfun1 (u1\_struct\_0 X1) X3 X4 = k4\_algstr\_0 \\ X1 (k7\_partfun1 (u1\_struct\_0 X1) X2 X4)))))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge \\
& (l1\_normsp\_0 X1)) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1)))))) \Rightarrow (\forall X3. \\
& ((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 \\
& k1\_numbers)))) \Rightarrow ((X3 = k3\_normsp\_0 X0 X1 X2) \Leftrightarrow ((k9\_xtuple\_0 X3 = \\
& k9\_xtuple\_0 X2) \wedge (\forall X4.(m1\_subset\_1 X4 X0) \Rightarrow ((X4 \in k9\_xtuple\_0 \\
& X3) \Rightarrow (k1\_funct\_1 X3 X4 = k1\_normsp\_0 X1 (k7\_partfun1 (u1\_struct\_0 \\
& X1) X2 X4)))))))))
\end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow ( \\
& (v1\_partfun1 X1 X0) \Leftrightarrow (k1\_relset\_1 X0 X1 = X0))
\end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge (v5\_relat\_1 X0 k1\_numbers)) \Rightarrow ((v1\_relat\_1 \\
& X0) \wedge (v3\_valued\_0 X0))
\end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))) \Rightarrow ((v4\_relat\_1 X2 X0) \wedge (v5\_relat\_1 X2 X1))
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2)
\end{aligned} \tag{15}$$

### Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow \\
& (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v2\_rlvect\_1 \\
& X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge ((v5\_rlvect\_1 X2) \wedge \\
& ((v6\_rlvect\_1 X2) \wedge ((v7\_rlvect\_1 X2) \wedge ((v8\_rlvect\_1 X2) \wedge ((v3\_normsp\_0 \\
& X2) \wedge ((v4\_normsp\_0 X2) \wedge ((v2\_normsp\_1 X2) \wedge (l1\_normsp\_1 X2)))))))))) \Rightarrow \\
& (\forall X3.((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& X0 (u1\_struct\_0 X2)))))) \Rightarrow ((v1\_partfun1 X3 X0) \Rightarrow ((k7\_partfun1 ( \\
& u1\_struct\_0 X2) (k5\_vfunct\_1 X0 X2 X3) X1 = k4\_algstr\_0 X2 (k7\_partfun1 \\
& (u1\_struct\_0 X2) X3 X1)) \wedge (k1\_seq\_1 (k3\_normsp\_0 X0 X2 X3) X1 = k1\_normsp\_0 \\
& X2 (k7\_partfun1 (u1\_struct\_0 X2) X3 X1))))))
\end{aligned}$$