

# t58\_fvaluat1 (TMXTTTiLPAg- ToXrN71FWk9RMu5ic11zsTT6)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  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  $v1\_realset2 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_fvaluat1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_fvaluat1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k7\_fvaluat1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_numbers : \iota$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v36\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_fvaluat1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $u3\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ( \\
& (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v1\_realset2 X0) \wedge (l6\_algstr\_0 \\
& X0)))))))) \Rightarrow (\forall X1. (m1\_fvaluat1 X1 X0) \Rightarrow ((v3\_fvaluat1 \\
& X0) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. (m1\_subset\_1 X4 \\
& (u1\_struct\_0 (k7\_fvaluat1 X0 X1))) \Rightarrow (\forall X5. (m1\_subset\_1 \\
& X5 (u1\_struct\_0 (k7\_fvaluat1 X0 X1))) \Rightarrow (((X2 = X4) \wedge (X3 = X5)) \Rightarrow (k3\_rlvect\_1 \\
& X0 X2 X3 = k3\_rlvect\_1 (k7\_fvaluat1 X0 X1) X4 X5)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ( \\
& (v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v1\_realset2 X0) \wedge (l6\_algstr\_0 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X2.(m1\_fvaluat1 X2 X0) \Rightarrow ((v3\_fvaluat1 X0) \Rightarrow ((r1\_xxreal\_0 \\
& k6\_numbers (k3\_funct\_2 (u1\_struct\_0 X0) k7\_numbers X2 X1)) \Leftrightarrow (m1\_subset\_1 \\
& X1 (u1\_struct\_0 (k7\_fvaluat1 X0 X2))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ( \\
& (v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v1\_realset2 X0) \wedge (l6\_algstr\_0 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X2.(m1\_fvaluat1 X2 X0) \Rightarrow ((v3\_fvaluat1 X0) \Rightarrow (k3\_funct\_2 \\
& (u1\_struct\_0 X0) k7\_numbers X2 (k4\_algstr\_0 X0 X1) = k3\_funct\_2 \\
& (u1\_struct\_0 X0) k7\_numbers X2 X1))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v2\_rlvect\_1 X0) \wedge (l1\_algstr\_0 \\
& X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (k3\_rlvect\_1 X0 X1 X2 = k1\_algstr\_0 X0 X1 X2)
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \tag{5}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge \\
& ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v1\_realset2 X0) \wedge \\
& (l6\_algstr\_0 X0)))))))))) \wedge (m1\_fvaluat1 X1 X0)) \Rightarrow ((\neg v2\_struct\_0 \\
& (k7\_fvaluat1 X0 X1)) \wedge ((\neg v6\_struct\_0 (k7\_fvaluat1 X0 X1)) \wedge ((v13\_algstr\_0 \\
& (k7\_fvaluat1 X0 X1)) \wedge ((v36\_algstr\_0 (k7\_fvaluat1 X0 X1)) \wedge ((v3\_group\_1 \\
& (k7\_fvaluat1 X0 X1)) \wedge ((v5\_group\_1 (k7\_fvaluat1 X0 X1)) \wedge ((v4\_vectsp\_1 \\
& (k7\_fvaluat1 X0 X1)) \wedge ((v5\_vectsp\_1 (k7\_fvaluat1 X0 X1)) \wedge ((v2\_rlvect\_1 \\
& (k7\_fvaluat1 X0 X1)) \wedge ((v3\_rlvect\_1 (k7\_fvaluat1 X0 X1)) \wedge ((v4\_rlvect\_1 \\
& (k7\_fvaluat1 X0 X1)) \wedge (l6\_algstr\_0 (k7\_fvaluat1 X0 X1))))))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.((l2\_algstr\_0 X0)\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow(m1\_subset\_1 (k4\_algstr\_0 X0 X1) (u1\_struct\_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0)\Rightarrow(k4\_struct\_0 X0 = u2\_struct\_0 X0) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge((v13\_algstr\_0 \\ & X0)\wedge((v3\_group\_1 X0)\wedge((v5\_vectsp\_1 X0)\wedge((v2\_rlvect\_1 X0)\wedge( \\ & (v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge((v1\_realset2 X0)\wedge(l6\_algstr\_0 \\ & X0))))))))))\Rightarrow(\forall X1.(m1\_fvaluat1 X1 X0)\Rightarrow((v3\_fvaluat1 \\ & X0)\Rightarrow(\forall X2.((\neg v2\_struct\_0 X2)\wedge((\neg v6\_struct\_0 X2)\wedge((v13\_algstr\_0 \\ & X2)\wedge((v36\_algstr\_0 X2)\wedge((v3\_group\_1 X2)\wedge((v5\_group\_1 X2)\wedge( \\ & (v4\_vectsp\_1 X2)\wedge((v5\_vectsp\_1 X2)\wedge((v2\_rlvect\_1 X2)\wedge((v3\_rlvect\_1 \\ & X2)\wedge((v4\_rlvect\_1 X2)\wedge(l6\_algstr\_0 X2))))))))))))))\Rightarrow((X2 = k7\_fvaluat1 \\ & X0 X1)\Leftrightarrow((u1\_struct\_0 X2 = k6\_fvaluat1 X0 X1)\wedge((u1\_algstr\_0 X2 = \\ & k2\_partfun1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) ( \\ & u1\_struct\_0 X0) (u1\_algstr\_0 X0) (k2\_zfmisc\_1 (k6\_fvaluat1 X0 \\ & X1) (k6\_fvaluat1 X0 X1))))\wedge((u2\_algstr\_0 X2 = k2\_partfun1 (k2\_zfmisc\_1 \\ & (u1\_struct\_0 X0) (u1\_struct\_0 X0)) (u1\_struct\_0 X0) (u2\_algstr\_0 \\ & X0) (k2\_zfmisc\_1 (k6\_fvaluat1 X0 X1) (k6\_fvaluat1 X0 X1))))\wedge((u2\_struct\_0 \\ & X2 = k4\_struct\_0 X0)\wedge(u3\_struct\_0 X2 = k5\_struct\_0 X0)))))) \quad (10) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge(l2\_algstr\_0 X0))\Rightarrow(\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 \\ & X0)\wedge(v13\_algstr\_0 X0)))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0))\Rightarrow((X2 = k4\_algstr\_0 X0 X1)\Leftrightarrow(k1\_algstr\_0 X0 X1 X2 = k4\_struct\_0 \\ & X0)))) \quad (11) \end{aligned}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge((v13\_algstr\_0 \\ & X0)\wedge((v3\_group\_1 X0)\wedge((v5\_vectsp\_1 X0)\wedge((v2\_rlvect\_1 X0)\wedge( \\ & (v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge((v1\_realset2 X0)\wedge(l6\_algstr\_0 \\ & X0))))))))))\Rightarrow(\forall X1.(m1\_fvaluat1 X1 X0)\Rightarrow((v3\_fvaluat1 \\ & X0)\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3. \\ & (m1\_subset\_1 X3 (u1\_struct\_0 (k7\_fvaluat1 X0 X1))\Rightarrow((X2 = X3)\Rightarrow \\ & (k4\_algstr\_0 X0 X2 = k4\_algstr\_0 (k7\_fvaluat1 X0 X1) X3)))))) \end{aligned}$$