

t2\_symsp\_1  
(TMGx8YLpkgWkYRSXGRpnhoeaURyawHpzLkV)

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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  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v8\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v9\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v10\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v11\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_symsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_symsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge (v3\_rlvect\_1 \\ &X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l2\_algstr\_0 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ &X1 (u1\_struct\_0 X0)) \Rightarrow ((k1\_algstr\_0 X0 X1 (k4\_struct\_0 X0) = X1) \wedge \\ &(k1\_algstr\_0 X0 (k4\_struct\_0 X0) X1 = X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ &X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\ &((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\ &X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ &((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge (( \\ &v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge ((v9\_vectsp\_1 \\ &X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 X0) \wedge ((v2\_symsp\_1 \\ &X1 X0) \wedge (l1\_symsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2. (m1\_subset\_1 \\ &X2 (u1\_struct\_0 X1)) \Rightarrow (r1\_orders\_2 X1 (k4\_struct\_0 X1) X2))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1 X0)\wedge(l1\_algstr\_0 X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(k3\_rlvect\_1 X0 X1 X2 = k1\_algstr\_0 X0 X1 X2) \quad (3)$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0)\Rightarrow((l2\_algstr\_0 X0)\wedge(l5\_algstr\_0 X0)) \quad (4)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l1\_algstr\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0)\Rightarrow(\forall X1.(l1\_vectsp\_1 X1 X0)\Rightarrow(l2\_algstr\_0 X1)) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge((v13\_algstr\_0 X0)\wedge((v33\_algstr\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge((v3\_group\_1 X0)\wedge((v5\_group\_1 X0)\wedge((v4\_vectsp\_1 X0)\wedge((v5\_vectsp\_1 X0)\wedge(l6\_algstr\_0 X0))))))))))\Rightarrow(\forall X1.(l1\_symsp\_1 X1 X0)\Rightarrow((l1\_orders\_2 X1)\wedge(l1\_vectsp\_1 X1 X0))) \quad (8)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0)\Rightarrow(m1\_subset\_1 (k4\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((l2\_algstr\_0 X0)\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(m1\_subset\_1 (k4\_algstr\_0 X0 X1) (u1\_struct\_0 X0))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v2\_rlvect\_1 X0)\wedge(l1\_algstr\_0 X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 (k3\_rlvect\_1 X0 X1 X2) (u1\_struct\_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1\_algstr\_0 X0)\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 (k1\_algstr\_0 X0 X1 X2) (u1\_struct\_0 X0)) \quad (12)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\
& ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge (( \\
& v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge (l1\_symsp\_1 X1 X0)))))) \Rightarrow ( \\
& (v2\_symsp\_1 X1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow \\
& (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4.(m1\_subset\_1 \\
& X4 (u1\_struct\_0 X1)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 \\
& X1)) \Rightarrow (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X0)) \Rightarrow ((\neg (X2 \neq k4\_struct\_0 \\
& X1) \wedge (\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 X1)) \Rightarrow (r1\_orders\_2 \\
& X1 X7 X2))) \wedge (((r1\_orders\_2 X1 X2 X3) \Rightarrow (r1\_orders\_2 X1 (k4\_vectsp\_1 \\
& X0 X1 X6 X2) X3)) \wedge (((r1\_orders\_2 X1 X3 X2) \wedge (r1\_orders\_2 X1 X4 X2)) \Rightarrow \\
& (r1\_orders\_2 X1 (k3\_rlvect\_1 X1 X3 X4) X2)) \wedge ((\neg (\neg r1\_orders\_2 X1 \\
& X3 X2) \wedge (\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 X0)) \Rightarrow (\neg r1\_orders\_2 \\
& X1 (k5\_algstr\_0 X1 X5 (k4\_vectsp\_1 X0 X1 X7 X3)) X2))) \wedge (((r1\_orders\_2 \\
& X1 X2 (k3\_rlvect\_1 X1 X3 X4) \wedge (r1\_orders\_2 X1 X3 (k3\_rlvect\_1 X1 \\
& X4 X2))) \Rightarrow (r1\_orders\_2 X1 X4 (k3\_rlvect\_1 X1 X2 X3))))))))))))) \\
& \tag{13}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\
& ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\
& X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge (( \\
& v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge ((v9\_vectsp\_1 \\
& X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 X0) \wedge ((v2\_symsp\_1 \\
& X1 X0) \wedge (l1\_symsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1\_subset\_1 \\
& X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\
& X1)) \Rightarrow ((r1\_orders\_2 X1 X2 X3) \Rightarrow (r1\_orders\_2 X1 X3 X2))))
\end{aligned}$$