

t6\_ortsp\_1  
(TMV795r7xEDoK1nfK8eMDiXzrccASSBJAkx)

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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  $v33\_algstr\_0 : \iota \Rightarrow o$  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  $v1\_ortsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l1\_orders\_2 : \iota \Rightarrow o$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ( \\
& (v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0))))))) \Rightarrow \\
& (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (( \\
& \neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 \\
& X2) \wedge ((v8\_vectsp\_1 X2 X0) \wedge ((v9\_vectsp\_1 X2 X0) \wedge ((v10\_vectsp\_1 \\
& X2 X0) \wedge ((v11\_vectsp\_1 X2 X0) \wedge (l1\_vectsp\_1 X2 X0))))))) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X2)) \Rightarrow ((k4\_vectsp\_1 X0 X2 (k4\_struct\_0 \\
& X0) X3 = k4\_struct\_0 X2) \wedge ((k4\_vectsp\_1 X0 X2 (k4\_algstr\_0 X0 (k5\_struct\_0 \\
& X0)) X3 = k4\_algstr\_0 X2 X3) \wedge (k4\_vectsp\_1 X0 X2 X1 (k4\_struct\_0 X2) = \\
& k4\_struct\_0 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. (l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \tag{2}$$

Assume the following.

$$\forall X0.(l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\ & ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\ & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ & (l1\_symsp\_1 X1 X0) \Rightarrow ((l1\_orders\_2 X1) \wedge (l1\_vectsp\_1 X1 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(l3\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (k5\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((l2\_algstr\_0 X0) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k4\_algstr\_0 X0 X1) (u1\_struct\_0 X0)) \quad (7)$$

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 ( \\ & (v1\_ortsp\_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 X1)) \Rightarrow (\forall X7. \\ & (m1\_subset\_1 X7 (u1\_struct\_0 X0)) \Rightarrow ((\neg (X2 \neq k4\_struct\_0 X1) \wedge ( \\ & X3 \neq k4\_struct\_0 X1) \wedge ((X4 \neq k4\_struct\_0 X1) \wedge ((X5 \neq k4\_struct\_0 X1) \wedge \\ & (\forall X8.(m1\_subset\_1 X8 (u1\_struct\_0 X1)) \Rightarrow (\neg (\neg r1\_orders\_2 \\ & X1 X8 X2) \wedge ((\neg r1\_orders\_2 X1 X8 X3) \wedge ((\neg r1\_orders\_2 X1 X8 X4) \wedge (\neg r1\_orders\_2 \\ & X1 X8 X5)))))))))) \wedge (((r1\_orders\_2 X1 X2 X3) \Rightarrow (r1\_orders\_2 X1 (k4\_vectsp\_1 \\ & X0 X1 X7 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 X8.(m1\_subset\_1 X8 (u1\_struct\_0 X0)) \Rightarrow (\neg r1\_orders\_2 \\ & X1 (k5\_algstr\_0 X1 X6 (k4\_vectsp\_1 X0 X1 X8 X3)) X2))) \wedge (((r1\_orders\_2 \\ & X1 X2 (k5\_algstr\_0 X1 X3 X4) \wedge (r1\_orders\_2 X1 X3 (k5\_algstr\_0 X1 \\ & X4 X2)) \Rightarrow (r1\_orders\_2 X1 X4 (k5\_algstr\_0 X1 X2 X3)))))))))) \end{aligned} \quad (8)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\ & ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 \\ & X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge (( \\ & v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge ((v9\_vectsp\_1 \\ & X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 X0) \wedge ((v1\_ortsp\_1 \\ & X1 X0) \wedge (l1\_symsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\ & X1)) \Rightarrow ((r1\_orders\_2 X1 X2 X3) \Rightarrow (r1\_orders\_2 X1 (k4\_algstr\_0 X1 X2 \\ & X3)))))) \end{aligned}$$