

t9\_vectsp\_1  
(TMY34viuNYbTj61j4RLsWRJixGVsU43DRLv)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v2\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  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  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\ X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow & \quad (1) \\ (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k6\_algstr\_0 X0 \\ (k4\_struct\_0 X0) X1 = k4\_struct\_0 X0)) & \end{aligned}$$

Assume the following.

$$\forall X0. (l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (2)$$

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.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. ((l3\_algstr\_0 X0) \wedge ((m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 \\ (k6\_algstr\_0 X0 X1 X2) (u1\_struct\_0 X0)) & \quad (5) \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. ((l2\_algstr\_0 X0) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k4\_algstr\_0 X0 X1) (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow ((v2\_vectsp\_1 \\
& \quad X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& \quad (u1\_struct\_0 X0)) \Rightarrow (k6\_algstr\_0 X0 (k1\_algstr\_0 X0 X2 X3) X1 = k1\_algstr\_0 \\
& \quad X0 (k6\_algstr\_0 X0 X2 X1) (k6\_algstr\_0 X0 X3 X1))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_algstr\_0 X0)) \Rightarrow (\forall X1. \\
& \quad (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 \\
& \quad X0) \wedge (v13\_algstr\_0 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\
& \quad X0)) \Rightarrow ((X2 = k4\_algstr\_0 X0 X1) \Leftrightarrow (k1\_algstr\_0 X0 X1 X2 = k4\_struct\_0 \\
& \quad X0))))))
\end{aligned} \tag{8}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\
& \quad X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow \\
& \quad (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \\
& \quad X2 (u1\_struct\_0 X0)) \Rightarrow (k6\_algstr\_0 X0 (k4\_algstr\_0 X0 X1) X2 = k4\_algstr\_0 \\
& \quad X0 (k6\_algstr\_0 X0 X1 X2))))
\end{aligned}$$