

t23\_vectsp\_1  
(TMZb4Ls1ppT258x8cjP313xpFLKAERFFKtQ)

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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  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_vectsp\_1 : \iota \Rightarrow o$  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  $l1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

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

Assume the following.

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

Assume the following.

$$\forall X0. (l2\_struct\_0 X0) \Rightarrow (l1\_struct\_0 X0) \tag{3}$$

Assume the following.

$$\forall X0. (l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \tag{4}$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (\forall X1.(l1\_vectsp\_1 X1 X0) \Rightarrow (l2\_algstr\_0 X1)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0 \\ & X0) \wedge (l1\_struct\_0 X0)) \wedge (((\neg v2\_struct\_0 X1) \wedge (l1\_vectsp\_1 X1 X0)) \wedge \\ & ((m1\_subset\_1 X2 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X3 (u1\_struct\_0 \\ & X1)))))) \Rightarrow (m1\_subset\_1 (k4\_vectsp\_1 X0 X1 X2 X3) (u1\_struct\_0 X1)) \end{aligned} \quad (6)$$

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.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_vectsp\_1 X1 X0)) \Rightarrow ((v8\_vectsp\_1 X1 X0) \Leftrightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \\ & X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\ & X1)) \Rightarrow (k4\_vectsp\_1 X0 X1 X2 (k1\_algstr\_0 X1 X3 X4) = k1\_algstr\_0 X1 \\ & (k4\_vectsp\_1 X0 X1 X2 X3) (k4\_vectsp\_1 X0 X1 X2 X4))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k5\_algstr\_0 X0 X1 X2 = k1\_algstr\_0 X0 X1 (k4\_algstr\_0 X0 X2)))) \quad (9)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge \\ & (v3\_vectsp\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 \\ & X0)))))))))) \Rightarrow (\forall X1.(((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 \\ & X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge \\ & ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 \\ & X0) \wedge (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 \\ & (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow \\ & (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X1)) \Rightarrow (k4\_vectsp\_1 X0 \\ & X1 X2 (k5\_algstr\_0 X1 X3 X4) = k5\_algstr\_0 X1 (k4\_vectsp\_1 X0 X1 X2 \\ & X3) (k4\_vectsp\_1 X0 X1 X2 X4)))))) \end{aligned}$$