

t20\_vectsp\_4  
(TMZvrqFhGwNUqG9Sdcrf6vsDpzadL2gCK8w)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  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  $l6\_algstr\_0 : \iota \Rightarrow o$  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  $m1\_vectsp\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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. 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. Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_struct\_0 X0)) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (r1\_struct\_0 X0 X1)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow \\ & (\forall X1. (((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 X0) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4. (m1\_vectsp\_4 X4 X0 X1) \Rightarrow (\forall X5. (m1\_subset\_1 X5 (u1\_struct\_0 X4)) \Rightarrow (\forall X6. (m1\_subset\_1 X6 (u1\_struct\_0 X4)) \Rightarrow (((X5 = X2) \wedge (X6 = X3)) \Rightarrow (k3\_rlvect\_1 X4 X5 X6 = k3\_rlvect\_1 X1 X2 X3)))))))))) \quad (3) \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 \\
& X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\
& ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 \\
& X1 X0) \wedge ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 \\
& X1 X0) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge \\
& (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1\_vectsp\_4 X2 X0 X1) \Rightarrow \\
& (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X2)) \Rightarrow (m1\_subset\_1 X3 \\
& (u1\_struct\_0 X1))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((v2\_rlvect\_1 X0) \wedge (l1\_algstr\_0 \\
& X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\
& X0)))) \Rightarrow (k3\_rlvect\_1 X0 X1 X2 = k1\_algstr\_0 X0 X1 X2)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge \\
& ((v3\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \wedge \\
& ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge \\
& ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 \\
& X0) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge \\
& (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1\_vectsp\_4 X2 X0 \\
& X1) \Rightarrow ((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v8\_vectsp\_1 X2 \\
& X0) \wedge ((v9\_vectsp\_1 X2 X0) \wedge ((v10\_vectsp\_1 X2 X0) \wedge ((v11\_vectsp\_1 \\
& X2 X0) \wedge ((v2\_rlvect\_1 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge \\
& (l1\_vectsp\_1 X2 X0))))))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.(l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \tag{7}$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (l1\_struct\_0 X0) \tag{8}$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_struct\_0 X0) \Rightarrow (\forall X1.(l1\_vectsp\_1 X1 X0) \Rightarrow (l2\_algstr\_0 X1)) \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((l1\_algstr\_0 X0)\wedge((m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 \\ & (k1\_algstr\_0 X0 X1 X2) (u1\_struct\_0 X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_struct\_0 X0)\Rightarrow(\forall X1.(r1\_struct\_0 X0 X1)\Leftrightarrow \\ & (X1 \in u1\_struct\_0 X0)) \end{aligned} \quad (12)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v13\_algstr\_0 X0)\wedge((v3\_group\_1 \\ & X0)\wedge((v4\_vectsp\_1 X0)\wedge((v5\_vectsp\_1 X0)\wedge((v2\_rlvect\_1 X0)\wedge \\ & ((v3\_rlvect\_1 X0)\wedge((v4\_rlvect\_1 X0)\wedge(l6\_algstr\_0 X0))))))))\Rightarrow \\ & (\forall X1.((\neg v2\_struct\_0 X1)\wedge((v13\_algstr\_0 X1)\wedge((v8\_vectsp\_1 \\ & X1 X0)\wedge((v9\_vectsp\_1 X1 X0)\wedge((v10\_vectsp\_1 X1 X0)\wedge((v11\_vectsp\_1 \\ & X1 X0)\wedge((v2\_rlvect\_1 X1)\wedge((v3\_rlvect\_1 X1)\wedge((v4\_rlvect\_1 X1)\wedge \\ & (l1\_vectsp\_1 X1 X0))))))))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X1))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X1))\Rightarrow(\forall X4. \\ & (m1\_vectsp\_4 X4 X0 X1)\Rightarrow(((r1\_struct\_0 X4 X2)\wedge(r1\_struct\_0 X4 X3))\Rightarrow \\ & (r1\_struct\_0 X4 (k3\_rlvect\_1 X1 X2 X3)))))) \end{aligned}$$