

## t21\_lmod\_6

(TMJd1x4QW74GLdep41jd5bhVCEWJTWLEKfD)

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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  $v4\_vectsp\_1 : \iota \Rightarrow o$  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  $r1\_lmod\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_vectsp\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_vectsp\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 \\
 & X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\
 & ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))) \Rightarrow \\
 & (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 \\
 & X1 X0) \wedge ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 \\
 & X1 X0) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge \\
 & (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1\_vectsp\_4 X2 X0 X1) \Rightarrow \\
 & (m1\_vectsp\_4 X2 X0 (k2\_vectsp\_4 X0 X1)))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge \\
 & ((v3\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 \\
 & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))) \wedge \\
 & ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge \\
 & ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 \\
 & X0) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge \\
 & (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1\_vectsp\_4 X2 X0 \\
 & X1) \Rightarrow ((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v8\_vectsp\_1 X2 \\
 & X0) \wedge ((v9\_vectsp\_1 X2 X0) \wedge ((v10\_vectsp\_1 X2 X0) \wedge ((v11\_vectsp\_1 \\
 & X2 X0) \wedge ((v2\_rlvect\_1 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge \\
 & (l1\_vectsp\_1 X2 X0))))))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge \\
& ((v3\_group\_1 X0) \wedge (v4\_vectsp\_1 X0) \wedge (v5\_vectsp\_1 X0) \wedge (v2\_rlvect\_1 \\
& X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \wedge \\
& ((\neg v2\_struct\_0 X1) \wedge (v13\_algstr\_0 X1) \wedge (v8\_vectsp\_1 X1 X0) \wedge \\
& ((v9\_vectsp\_1 X1 X0) \wedge (v10\_vectsp\_1 X1 X0) \wedge (v11\_vectsp\_1 X1 \\
& X0) \wedge (v2\_rlvect\_1 X1) \wedge (v3\_rlvect\_1 X1) \wedge (v4\_rlvect\_1 X1) \wedge \\
& (l1\_vectsp\_1 X1 X0)))))) \Rightarrow ((v7\_vectsp\_1 (k2\_vectsp\_4 X0 \\
& X1) X0) \wedge (m1\_vectsp\_4 (k2\_vectsp\_4 X0 X1) X0 X1))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge (v2\_rlvect\_1 \\
& X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v3\_group\_1 X0) \wedge ( \\
& (v4\_vectsp\_1 X0) \wedge (v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow \\
& (\forall X1. ((\neg v2\_struct\_0 X1) \wedge (v13\_algstr\_0 X1) \wedge (v2\_rlvect\_1 \\
& X1) \wedge (v3\_rlvect\_1 X1) \wedge (v4\_rlvect\_1 X1) \wedge (v8\_vectsp\_1 X1 X0) \wedge \\
& ((v9\_vectsp\_1 X1 X0) \wedge (v10\_vectsp\_1 X1 X0) \wedge (v11\_vectsp\_1 X1 \\
& X0) \wedge (l1\_vectsp\_1 X1 X0)))))) \Rightarrow (\forall X2. ((\neg v2\_struct\_0 \\
& X2) \wedge (v13\_algstr\_0 X2) \wedge (v2\_rlvect\_1 X2) \wedge (v3\_rlvect\_1 X2) \wedge \\
& (v4\_rlvect\_1 X2) \wedge (v8\_vectsp\_1 X2 X0) \wedge (v9\_vectsp\_1 X2 X0) \wedge \\
& ((v10\_vectsp\_1 X2 X0) \wedge (v11\_vectsp\_1 X2 X0) \wedge (l1\_vectsp\_1 X2 X0)))))) \Rightarrow \\
& ((r1\_lmod\_6 X0 X1 X2) \Leftrightarrow (m1\_vectsp\_4 X1 X0 X2)))
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge (v2\_rlvect\_1 \\
& X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v3\_group\_1 X0) \wedge ( \\
& (v4\_vectsp\_1 X0) \wedge (v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow \\
& (\forall X1. ((\neg v2\_struct\_0 X1) \wedge (v13\_algstr\_0 X1) \wedge (v2\_rlvect\_1 \\
& X1) \wedge (v3\_rlvect\_1 X1) \wedge (v4\_rlvect\_1 X1) \wedge (v8\_vectsp\_1 X1 X0) \wedge \\
& ((v9\_vectsp\_1 X1 X0) \wedge (v10\_vectsp\_1 X1 X0) \wedge (v11\_vectsp\_1 X1 \\
& X0) \wedge (l1\_vectsp\_1 X1 X0)))))) \Rightarrow (\forall X2. ((\neg v2\_struct\_0 \\
& X2) \wedge (v13\_algstr\_0 X2) \wedge (v2\_rlvect\_1 X2) \wedge (v3\_rlvect\_1 X2) \wedge \\
& (v4\_rlvect\_1 X2) \wedge (v8\_vectsp\_1 X2 X0) \wedge (v9\_vectsp\_1 X2 X0) \wedge \\
& ((v10\_vectsp\_1 X2 X0) \wedge (v11\_vectsp\_1 X2 X0) \wedge (l1\_vectsp\_1 X2 X0)))))) \Rightarrow \\
& ((r1\_lmod\_6 X0 X1 X2) \Rightarrow (r1\_lmod\_6 X0 X1 (k2\_vectsp\_4 X0 X2)))
\end{aligned}$$