

t22\_lmod\_6 (TMLGZjKExyTNknKoCwJeiQoWt-  
ghvcVz9P6a)

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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  $m1\_vectsp\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_lmod\_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_vectsp\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\ & ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow \\ & (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 \\ & X1 X0) \wedge ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 \\ & X1 X0) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge \\ & (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1\_vectsp\_4 X2 X0 X1) \Rightarrow \\ & (\forall X3.(m1\_vectsp\_4 X3 X0 X1) \Rightarrow ((m1\_vectsp\_4 X2 X0 (k1\_vectsp\_5 \\ & X0 X1 X2 X3)) \wedge (m1\_vectsp\_4 X3 X0 (k1\_vectsp\_5 X0 X1 X2 X3)))))) \end{aligned} \quad (1)$$

Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2\_struct\_0 \\
& X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge \\
& ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 \\
& X0) \wedge (l6\_algstr\_0 X0)))))))) \wedge (((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 \\
& X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 \\
& X1 X0) \wedge ((v11\_vectsp\_1 X1 X0) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 \\
& X1) \wedge ((v4\_rlvect\_1 X1) \wedge (l1\_vectsp\_1 X1 X0)))))))))) \wedge ((m1\_vectsp\_4 \\
& X2 X0 X1) \wedge (m1\_vectsp\_4 X3 X0 X1))) \Rightarrow ((v7\_vectsp\_1 (k1\_vectsp\_5 \\
& X0 X1 X2 X3) X0) \wedge (m1\_vectsp\_4 (k1\_vectsp\_5 X0 X1 X2 X3) X0 X1))
\end{aligned} \tag{3}$$

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**

$$\begin{aligned}
& \forall X0. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ( \\
& (v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))) \Rightarrow \\
& (\forall X1. (((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 \\
& X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v8\_vectsp\_1 X1 X0) \wedge \\
& ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 X1 \\
& X0) \wedge (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2. (m1\_vectsp\_4 X2 \\
& X0 X1) \Rightarrow (\forall X3. (m1\_vectsp\_4 X3 X0 X1) \Rightarrow ((r1\_lmod\_6 X0 X2 (k1\_vectsp\_5 \\
& X0 X1 X2 X3)) \wedge (r1\_lmod\_6 X0 X3 (k1\_vectsp\_5 X0 X1 X2 X3))))))
\end{aligned}$$