

## t75\_rmod\_2

(TMJ7P1Le9pVBQ38KxaKBAem2kK5czp9ZueV)

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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  $v4\_vectsp\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_vectsp\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_rmod\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_rmod\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $k3\_rmod\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 \\
 & X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\
 & ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))) \Rightarrow \\
 & (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 \\
 & X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_2 X1 X0) \wedge \\
 & (l1\_vectsp\_2 X1 X0)))))))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\
 & X1)) \Rightarrow (\forall X3. (m1\_rmod\_2 X3 X0 X1) \Rightarrow (\forall X4. (m2\_rmod\_2 \\
 & X4 X0 X1 X3) \Rightarrow ((X2 \in X4) \Leftrightarrow (X4 = k3\_rmod\_2 X0 X1 X2 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge \\
 & ((v3\_group\_1 X1) \wedge ((v4\_vectsp\_1 X1) \wedge ((v5\_vectsp\_1 X1) \wedge ((v2\_rlvect\_1 \\
 & X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge (l6\_algstr\_0 X1)))))))) \Rightarrow \\
 & (\forall X2. ((\neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v2\_rlvect\_1 \\
 & X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge ((v4\_vectsp\_2 X2 X1) \wedge \\
 & (l1\_vectsp\_2 X2 X1)))))))) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 \\
 & X2)) \Rightarrow (\forall X4. (m1\_rmod\_2 X4 X1 X2) \Rightarrow ((X0 \in k3\_rmod\_2 X1 X2 X3 X4) \Leftrightarrow \\
 & (\exists X5. (m1\_subset\_1 X5 (u1\_struct\_0 X2)) \wedge ((r1\_struct\_0 \\
 & X4 X5) \wedge (X0 = k3\_rlvect\_1 X2 X3 X5))))))
 \end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge (v3\_group\_1 \\ & X0) \wedge (v4\_vectsp\_1 X0) \wedge (v5\_vectsp\_1 X0) \wedge (v2\_rlvect\_1 X0) \wedge \\ & ((v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow \\ & (\forall X1.((\neg v2\_struct\_0 X1) \wedge (v13\_algstr\_0 X1) \wedge (v2\_rlvect\_1 \\ & X1) \wedge (v3\_rlvect\_1 X1) \wedge (v4\_rlvect\_1 X1) \wedge (v4\_vectsp\_2 X1 X0) \wedge \\ & (l1\_vectsp\_2 X1 X0)))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4. \\ & (m1\_rmod\_2 X4 X0 X1) \Rightarrow (\forall X5.(m2\_rmod\_2 X5 X0 X1 X4) \Rightarrow (\neg (X2 \in \\ & X5) \wedge (X3 \in X5) \wedge (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X1)) \Rightarrow \\ & (\neg (r1\_struct\_0 X4 X6) \wedge (k3\_rlvect\_1 X1 X2 X6 = X3)))))))))) \end{aligned}$$