

## t76\_rmod\_2

(TMVRyzcYDkqAciQTwfQjDKHnFoEqjeE1qYf)

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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  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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.

$$\begin{aligned}
 & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 \\
 & X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\
 & ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))) \Rightarrow \\
 & (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 \\
 & X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_2 X1 X0) \wedge \\
 & (l1\_vectsp\_2 X1 X0)))))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\
 & X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4. \\
 & (m1\_rmod\_2 X4 X0 X1) \Rightarrow ((X2 \in k3\_rmod\_2 X0 X1 X3 X4) \Leftrightarrow (\exists X5.(m1\_subset\_1 \\
 & X5 (u1\_struct\_0 X1) \wedge ((r1\_struct\_0 X4 X5) \wedge (X2 = k5\_algstr\_0 X1 \\
 & X3 X5))))))))))
 \end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\ & ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow \\ & (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 \\ & X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v4\_vectsp\_2 X1 X0) \wedge \\ & (l1\_vectsp\_2 X1 X0)))))))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4. \\ & (m1\_rmod\_2 X4 X0 X1) \Rightarrow (\forall X5.(m2\_rmod\_2 X5 X0 X1 X4) \Rightarrow (\neg (X2 \in \\ & X5) \wedge ((X3 \in X5) \wedge (\forall X6.(m1\_subset\_1 X6 (u1\_struct\_0 X1)) \Rightarrow \\ & (\neg (r1\_struct\_0 X4 X6) \wedge (k5\_algstr\_0 X1 X2 X6 = X3)))))))))) \end{aligned}$$