

t139\_zmodul01  
(TMXh3UNMA3j4LsdSymrffFD5JnJ7jt6z6xXS)

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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  $v2\_zmodul01 : \iota \Rightarrow o$  be given. Let  $v3\_zmodul01 : \iota \Rightarrow o$  be given. Let  $v4\_zmodul01 : \iota \Rightarrow o$  be given. Let  $v5\_zmodul01 : \iota \Rightarrow o$  be given. Let  $l1\_zmodul01 : \iota \Rightarrow o$  be given. Let  $v8\_zmodul01 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_zmodul01 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m3\_zmodul01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_zmodul01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_zmodul01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_struct\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_zmodul01 X0) \wedge \\ & ((v3\_zmodul01 X0) \wedge ((v4\_zmodul01 X0) \wedge ((v5\_zmodul01 X0) \wedge (l1\_zmodul01 \\ & X0)))))))))) \Rightarrow (\forall X1.((v8\_zmodul01 X1 X0) \wedge (m1\_zmodul01 \\ & X1 X0)) \Rightarrow (\forall X2.(m3\_zmodul01 X2 X0 X1) \Rightarrow ((r1\_zmodul01 X0 X2 \\ & X1) \wedge (r1\_zmodul01 X0 X1 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge \\ & ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_zmodul01 \\ & X0) \wedge ((v3\_zmodul01 X0) \wedge ((v4\_zmodul01 X0) \wedge ((v5\_zmodul01 X0) \wedge \\ & (l1\_zmodul01 X0)))))))))) \wedge (m1\_zmodul01 X1 X0)) \Rightarrow (\forall X2. \\ & (m3\_zmodul01 X2 X0 X1) \Rightarrow (m1\_zmodul01 X2 X0)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2\_struct\_0 \\
& X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\
& ((v4\_rlvect\_1 X0) \wedge ((v2\_zmodul01 X0) \wedge ((v3\_zmodul01 X0) \wedge ((v4\_zmodul01 \\
& X0) \wedge ((v5\_zmodul01 X0) \wedge (l1\_zmodul01 X0)))))))))) \wedge ((m1\_subset\_1 \\
& X1 (u1\_struct\_0 X0)) \wedge ((m1\_zmodul01 X2 X0) \wedge (m1\_zmodul01 X3 X0))) \Rightarrow \\
& (m1\_subset\_1 (k9\_zmodul01 X0 X1 X2 X3) (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_zmodul01 X0) \wedge \\
& ((v3\_zmodul01 X0) \wedge ((v4\_zmodul01 X0) \wedge ((v5\_zmodul01 X0) \wedge (l1\_zmodul01 \\
& X0)))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\
& (\forall X2. (m1\_zmodul01 X2 X0) \Rightarrow (\forall X3. (m1\_zmodul01 X3 X0) \Rightarrow \\
& ((r1\_zmodul01 X0 X2 X3) \Rightarrow (\forall X4. (m1\_subset\_1 X4 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) (u1\_struct\_0 X0))) \Rightarrow ((X4 = k9\_zmodul01 X0 X1 X2 \\
& X3) \Leftrightarrow ((X1 = k3\_rlvect\_1 X0 (k2\_domain\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0) X4) (k3\_domain\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0) X4)) \wedge (( \\
& r1\_struct\_0 X2 (k2\_domain\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0) \\
& X4)) \wedge (r1\_struct\_0 X3 (k3\_domain\_1 (u1\_struct\_0 X0) (u1\_struct\_0 \\
& X0) X4))))))))))
\end{aligned} \tag{4}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_zmodul01 X0) \wedge \\
& ((v3\_zmodul01 X0) \wedge ((v4\_zmodul01 X0) \wedge ((v5\_zmodul01 X0) \wedge (l1\_zmodul01 \\
& X0)))))))))) \Rightarrow (\forall X1. ((v8\_zmodul01 X1 X0) \wedge (m1\_zmodul01 \\
& X1 X0)) \Rightarrow (\forall X2. (m3\_zmodul01 X2 X0 X1) \Rightarrow (\forall X3. (m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0)) \Rightarrow (k3\_rlvect\_1 X0 (k2\_domain\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0) (k9\_zmodul01 X0 X3 X1 X2)) (k3\_domain\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0) (k9\_zmodul01 X0 X3 X1 X2)) = X3)))
\end{aligned}$$