

t104\_zmodul01  
(TMGoFnjMetFJ7ts5pssCXG7hgB2m3qQxuFy)

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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  $m1\_zmodul01 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_zmodul01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_zmodul01 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. k3\_xboole\_0 (k3\_xboole\_0 X0 X1) X2 = k3\_xboole\_0 X0 (k3\_xboole\_0 X1 X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. k3\_xboole\_0 X0 X0 = X0 \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v2\_zmodul01 X0) \wedge ((v3\_zmodul01 X0) \wedge ((v4\_zmodul01 X0) \wedge ((v5\_zmodul01 X0) \wedge (l1\_zmodul01 X0)))))))))) \wedge ((m1\_zmodul01 X1 X0) \wedge (m1\_zmodul01 \\ & X2 X0))) \Rightarrow ((v1\_zmodul01 (k7\_zmodul01 X0 X1 X2)) \wedge (m1\_zmodul01 (k7\_zmodul01 X0 X1 X2) X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v2\_zmodul01 X0) \wedge \\ & ((v3\_zmodul01 X0) \wedge ((v4\_zmodul01 X0) \wedge ((v5\_zmodul01 X0) \wedge (l1\_zmodul01 X0)))))))))) \Rightarrow (\forall X1. (m1\_zmodul01 X1 X0) \Rightarrow (\forall X2. (m1\_zmodul01 \\ & X2 X0) \Rightarrow (\forall X3. ((v1\_zmodul01 X3) \wedge (m1\_zmodul01 X3 X0)) \Rightarrow ((X3 = k7\_zmodul01 X0 X1 X2) \Leftrightarrow (u1\_struct\_0 X3 = k3\_xboole\_0 (u1\_struct\_0 \\ & X1) (u1\_struct\_0 X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 \\ & X0) \wedge (v2\_rlvect\_1 X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge \\ & ((v2\_zmodul01 X0) \wedge (v3\_zmodul01 X0) \wedge (v4\_zmodul01 X0) \wedge (v5\_zmodul01 \\ & X0) \wedge (l1\_zmodul01 X0)))))) \wedge ((m1\_zmodul01 X1 X0) \wedge (m1\_zmodul01 \\ & X2 X0)) \Rightarrow (k7\_zmodul01 X0 X1 X2 = k7\_zmodul01 X0 X2 X1) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. k3\_xboole\_0 X0 X1 = k3\_xboole\_0 X1 X0 \quad (6)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (v13\_algstr\_0 X0) \wedge (v2\_rlvect\_1 \\ & X0) \wedge (v3\_rlvect\_1 X0) \wedge (v4\_rlvect\_1 X0) \wedge (v2\_zmodul01 X0) \wedge \\ & ((v3\_zmodul01 X0) \wedge (v4\_zmodul01 X0) \wedge (v5\_zmodul01 X0) \wedge (l1\_zmodul01 \\ & X0)))))) \Rightarrow (\forall X1. (m1\_zmodul01 X1 X0) \Rightarrow (\forall X2. (m1\_zmodul01 \\ & X2 X0) \Rightarrow (\forall X3. (m1\_zmodul01 X3 X0) \Rightarrow (k7\_zmodul01 X0 X1 (k7\_zmodul01 \\ & X0 X2 X3) = k7\_zmodul01 X0 (k7\_zmodul01 X0 X1 X2) X3)))) \end{aligned}$$