

# t6\_zmodul01 (TM- GYsgn5eqWHHNX9KXMF5Fg9FPkYKh2hTxk)

October 27, 2020

Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. 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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_zmodul01 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k4\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\ & X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l2\_algstr\_0 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow ((k4\_rlvect\_1 X0 (k2\_finseq\_4 (u1\_struct\_0 \\ & X0) X1 (k4\_algstr\_0 X0 X1)) = k4\_struct\_0 X0) \wedge (k4\_rlvect\_1 X0 (k2\_finseq\_4 \\ & (u1\_struct\_0 X0) (k4\_algstr\_0 X0 X1) X1) = k4\_struct\_0 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 \\ & X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l2\_algstr\_0 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow (k4\_rlvect\_1 X0 (k2\_finseq\_4 (u1\_struct\_0 X0) X1 X2) = k1\_algstr\_0 \\ & X0 X1 X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1\_int\_1 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 \\ & X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge \\ & ((v2\_zmodul01 X1) \wedge ((v3\_zmodul01 X1) \wedge ((v4\_zmodul01 X1) \wedge ((v5\_zmodul01 \\ & X1) \wedge (l1\_zmodul01 X1)))))))))) \Rightarrow (\forall X2. (m1\_subset\_1 X2 ( \\ & u1\_struct\_0 X1)) \Rightarrow (((X0 = k6\_numbers) \vee (X2 = k4\_struct\_0 X1)) \Rightarrow ( \\ & k1\_zmodul01 X1 X2 X0 = k4\_struct\_0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l1\_zmodul01 X0) \Rightarrow (l2\_algstr\_0 X0) \quad (5)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (k4\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((l2\_algstr\_0 X0) \wedge (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k4\_algstr\_0 X0 X1) (u1\_struct\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge (l1\_zmodul01 X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (v1\_int\_1 X2))) \Rightarrow (m1\_subset\_1 (k1\_zmodul01 X0 X1 X2) (u1\_struct\_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(((\neg v2\_struct\_0 X0) \wedge (l1\_zmodul01 X0)) \Rightarrow ((v2\_zmodul01 X0) \Leftrightarrow (\forall X1.(v1\_int\_1 X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (k1\_zmodul01 X0 (k1\_algstr\_0 X0 X2 X3) X1 = k1\_algstr\_0 X0 (k1\_zmodul01 X0 X2 X1) (k1\_zmodul01 X0 X3 X1))))))) \quad (9)$$

Assume the following.

$$\forall X0.(((\neg v2\_struct\_0 X0) \wedge (l2\_algstr\_0 X0)) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (v13\_algstr\_0 X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((X2 = k4\_algstr\_0 X0 X1) \Leftrightarrow (k1\_algstr\_0 X0 X1 X2 = k4\_struct\_0 X0)))))) \quad (10)$$

**Theorem 1**

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (\forall X1.(((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge ((v2\_zmodul01 X1) \wedge ((v3\_zmodul01 X1) \wedge ((v4\_zmodul01 X1) \wedge ((v5\_zmodul01 X1) \wedge (l1\_zmodul01 X1)))))))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow (k1\_zmodul01 X1 (k4\_algstr\_0 X1 X2) X0 = k4\_algstr\_0 X1 (k1\_zmodul01 X1 X2 X0))))))$$