

# t32\_group\_1

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_binop\_2 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k2\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $np\_0 : \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $k1\_int\_2 : \iota \Rightarrow \iota$  be given. Let  $k16\_complex1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_group\_1 : \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k5\_group\_1 X0 np\_1 X1 = X1)) \quad (2)$$

Assume the following.

$$((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \quad (3)$$

Assume the following.

$$v1\_xboole\_0 np\_0 \quad (4)$$

Assume the following.

$$k4\_xcmplx\_0 (k4\_xcmplx\_0 np\_1) = np\_1 \quad (5)$$

Assume the following.

$$\neg r1\_xxreal\_0 np\_0 (k4\_xcmplx\_0 np\_1) \quad (6)$$

Assume the following.

$$r1\_xxreal\_0 \text{ } np\_0 \text{ } np\_1 \quad (7)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (8)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (9)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (k1\_int\_2 X0 = k16\_complex1 X0) \quad (10)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (k19\_binop\_2 X0 = k4\_xcmplx\_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow ((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0)) \wedge (v1\_xxreal\_0 (k4\_xcmplx\_0 X0))) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow ((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0)) \wedge (v1\_int\_1 (k4\_xcmplx\_0 X0))) \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(v1\_int\_1 X1) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (((r1\_xxreal\_0 k6\_numbers X1) \Rightarrow (k5\_group\_1 X0 X1 X2 = k2\_binop\_1 (u1\_struct\_0 X0) k5\_numbers \\ & (u1\_struct\_0 X0) (k4\_group\_1 X0) X2 (k1\_int\_2 X1))) \wedge ((\neg r1\_xxreal\_0 k6\_numbers X1) \Rightarrow (k5\_group\_1 X0 X1 X2 = k2\_group\_1 X0 (k2\_binop\_1 \\ & (u1\_struct\_0 X0) k5\_numbers (u1\_struct\_0 X0) (k4\_group\_1 X0) X2 (k1\_int\_2 X1))))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0 X0) \Rightarrow (((r1\_xxreal\_0 k6\_numbers X0) \Rightarrow (k16\_complex1 X0 = X0)) \wedge ((\neg r1\_xxreal\_0 k6\_numbers X0) \Rightarrow (k16\_complex1 X0 = k4\_xcmplx\_0 X0))) \quad (15)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (16)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(v1\_int\_1\ X0) \quad (17)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \quad (18)$$

**Theorem 1**

$$\begin{aligned} &\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_group\_1\ X0)\wedge((v3\_group\_1 \\ &X0)\wedge(l3\_algstr\_0\ X0))))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0 \\ &X0))\Rightarrow(k5\_group\_1\ X0\ (k19\_binop\_2\ np\_1)\ X1 = k2\_group\_1\ X0\ X1)) \end{aligned}$$