

## t9\_group\_8

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  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  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $k5\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_group\_1 : \iota \Rightarrow \iota$  be given. Let  $k22\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v4\_group\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_int\_1 X0) \Rightarrow (\forall X1.(v1\_int\_1 X1) \Rightarrow (\forall X2. \\ & ((\neg v2\_struct\_0 X2) \wedge ((v2\_group\_1 X2) \wedge ((v3\_group\_1 X2) \wedge (l3\_algstr\_0 \\ & X2)))) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X2)) \Rightarrow (k5\_group\_1 \\ & X2 (k22\_binop\_2 X0 X1) X3 = k5\_group\_1 X2 X1 (k5\_group\_1 X2 X0 X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_int\_1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\ & X1) \wedge ((v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1)))) \Rightarrow (k5\_group\_1 X1 X0 ( \\ & k1\_group\_1 X1) = k1\_group\_1 X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k3\_xcmplx\_0 X0 k6\_numbers = k6\_numbers) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ & X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 \\ & X0)) \Rightarrow (k5\_group\_1 X0 k6\_numbers X1 = k1\_group\_1 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))))\Rightarrow(\forall X2.(m2\_subset\_1 X2 X0 X1)\Leftrightarrow(m1\_subset\_1 X2 X1)) \quad (5)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_int\_1 X0)\wedge(v1\_int\_1 X1))\Rightarrow(k22\_binop\_2 X0 X1 = k3\_xcmplx\_0 X0 X1) \quad (7)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow(m2\_subset\_1 (k6\_group\_1 X0 X1) k1\_numbers k5\_numbers) \quad (9)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v2\_group\_1 X0)\wedge((v3\_group\_1 X0)\wedge(l3\_algstr\_0 X0))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m2\_subset\_1 X2 k1\_numbers k5\_numbers)\Rightarrow(((v4\_group\_1 X1 X0)\Rightarrow((X2 = k6\_group\_1 X0 X1)\Leftrightarrow(X2 = k6\_numbers))))\wedge((\neg v4\_group\_1 X1 X0)\Rightarrow((X2 = k6\_group\_1 X0 X1)\Leftrightarrow((k5\_group\_1 X0 X2 X1 = k1\_group\_1 X0)\wedge((X2\neq k6\_numbers)\wedge(\forall X3.(v7\_ordinal1 X3)\Rightarrow((k5\_group\_1 X0 X3 X1 = k1\_group\_1 X0)\Rightarrow((X3 = k6\_numbers)\vee(r1\_xreal\_0 X2 X3)))))))))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_int\_1 X0)\wedge(v1\_int\_1 X1))\Rightarrow(k22\_binop\_2 X0 X1 = k22\_binop\_2 X1 X0) \quad (12)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (13)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xcmplx\_0 X0) \quad (14)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (v1\_xreal\_0 X0) \quad (15)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_int\_1 X0) \quad (16)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \quad (17)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v15\_algstr\_0 X0) \wedge ((v2\_group\_1 \\ & X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(v1\_int\_1 X2) \Rightarrow (k5\_group\_1 X0 \\ & (k3\_xcmplx\_0 X2 (k6\_group\_1 X0 X1)) X1 = k1\_group\_1 X0))) \end{aligned}$$