

## t13\_group\_8

(TMWxLtALE7HYo6VptL42FXR31iynybPo6cf)

October 27, 2020

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  $v4\_group\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $k5\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_group\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  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  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_0 : \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k1\_int\_2 : \iota \Rightarrow \iota$  be given. Let  $k16\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k19\_binop\_2 : \iota \Rightarrow \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v3\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (k2\_group\_1 X0 (k1\_group\_1 X0) = k1\_group\_1 X0) \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{2}$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow ((r1\_xxreal\_0 k6\_numbers X0) \Rightarrow (X0 \in k5\_numbers)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \tag{4}$$

Assume the following.

$$(m2\_subset\_1 np\_0 k1\_numbers k5\_numbers) \wedge ((m1\_subset\_1 np\_0 k5\_numbers) \wedge (m1\_subset\_1 np\_0 k1\_numbers)) \tag{5}$$

Assume the following.

$$v1\_xboole\_0 \text{ np\_}0 \quad (6)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (7)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (8)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (k1\_int\_2 X0 = k16\_complex1 X0) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (k19\_binop\_2 X0 = k4\_xcmplx\_0 X0) \quad (10)$$

Assume the following.

$$\exists X0.(v1\_xboole\_0 X0) \wedge ((v1\_xcmplx\_0 X0) \wedge ((v1\_xxreal\_0 X0) \wedge (v1\_xreal\_0 X0))) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_int\_1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\ X1) \wedge ((v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1)))) \Rightarrow (\forall X2.(m1\_subset\_1 \\ X2 (u1\_struct\_0 X1)) \Rightarrow (k5\_group\_1 X1 (k19\_binop\_2 X0) X2 = k2\_group\_1 \\ X1 (k5\_group\_1 X1 X0 X2)))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k4\_xcmplx\_0 (k4\_xcmplx\_0 X0) = X0) \quad (13)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow ((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0)) \wedge (v1\_xreal\_0 (k4\_xcmplx\_0 X0))) \quad (14)$$

Assume the following.

$$\forall X0.((\neg v3\_xxreal\_0 X0) \wedge (v1\_xreal\_0 X0)) \Rightarrow ((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0)) \wedge (\neg v2\_xxreal\_0 (k4\_xcmplx\_0 X0))) \quad (15)$$

Assume the following.

$$\forall X0.((\neg v2\_xxreal\_0 X0) \wedge (v1\_xreal\_0 X0)) \Rightarrow ((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0)) \wedge (\neg v3\_xxreal\_0 (k4\_xcmplx\_0 X0))) \quad (16)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (m1\_subset\_1 (k1\_int\_2 X0) k5\_numbers) \quad (17)$$

Assume the following.

$$k1\_xboole\_0 = the (\lambda X0 : \iota.v1\_xboole\_0 X0) \quad (18)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (((r1\_xxreal\_0 k6\_numbers X0) \Rightarrow (k16\_complex1 X0 = X0)) \wedge ((\neg r1\_xxreal\_0 k6\_numbers X0) \Rightarrow (k16\_complex1 X0 = k4\_xcmplx\_0 X0))) \quad (19)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((v4\_group\_1 X1 X0) \Leftrightarrow (\forall X2.(v7\_ordinal1 X2) \Rightarrow ((k5\_group\_1 X0 X2 X1 = k1\_group\_1 X0) \Rightarrow (X2 = k6\_numbers)))))) \quad (20)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0) \wedge ((\neg v2\_xxreal\_0 X0) \wedge (\neg v3\_xxreal\_0 X0))) \Rightarrow ((v1\_xboole\_0 X0) \wedge (v1\_xxreal\_0 X0)) \quad (21)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (22)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v7\_ordinal1 X0) \quad (23)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (24)$$

Assume the following.

$$\forall X0.((v1\_xxreal\_0 X0) \wedge (v2\_xxreal\_0 X0)) \Rightarrow ((\neg v1\_xboole\_0 X0) \wedge ((v1\_xxreal\_0 X0) \wedge (\neg v3\_xxreal\_0 X0))) \quad (25)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xcmplx\_0 X0) \quad (26)$$

Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow (v1\_xreal\_0 X0) \quad (27)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\neg v3\_xreal\_0 X0) \quad (28)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_int\_1 X0) \quad (29)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v15\_algstr\_0 X0) \wedge ((v2\_group\_1 \\ & X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow ((v4\_group\_1 X1 X0) \Leftrightarrow (\forall X2.(v1\_int\_1 \\ & X2) \Rightarrow ((k5\_group\_1 X0 X2 X1 = k1\_group\_1 X0) \Rightarrow (X2 = k6\_numbers)))))) \end{aligned}$$