

t7_fsm_3 (TMSjQk-
Txm5Td3ZDLLXNKAB1tYZkZkENGURE)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k1_flang_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_flang_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_catalan2 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_ordinal4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k3_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v5_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $v1_card_1 : \iota \Rightarrow o$ be given. Let $v4_funct_1 : \iota \Rightarrow o$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_subset_1 X1 (k3_catalan2 X0)) \Rightarrow (\forall X2. \\ & (v7_ordinal1 X2) \Rightarrow (\neg(k1_afinsq_1 X1 = k2_xcmplx_0 X2 np_1) \wedge (\forall X3. \\ & (m1_subset_1 X3 (k3_catalan2 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 \\ & X0) \Rightarrow (\neg(k1_afinsq_1 X3 = X2) \wedge (X1 = k1_ordinal4 (k5_afinsq_1 X4 \\ & X3))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7_ordinal1 X0) \Rightarrow (\neg(X0 \neq k6_numbers) \wedge (\forall X1. \\ & (v7_ordinal1 X1) \Rightarrow (X0 \neq k1_nat_1 X1 np_1))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \tag{3}$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \tag{4}$$

Assume the following.

$$v1_xboole_0 np_0 \tag{5}$$

Assume the following.

$$r1_xreal_0 \text{ np_0 np_0} \quad (6)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (7)$$

Assume the following.

$$\forall X0. k5_afinsq_1 X0 = k3_afinsq_1 X0 \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow \\ (k3_flang_1 X0 X1 = k3_afinsq_1 X1) \quad (9)$$

Assume the following.

$$\forall X0. k3_catalan2 X0 = k8_afinsq_1 X0 \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. ((v7_ordinal1 X0) \wedge (m1_subset_1 X1 k5_numbers)) \Rightarrow \\ (k1_nat_1 X0 X1 = k2_xcmplx_0 X0 X1) \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1_subset_1 X1 (k3_catalan2 \\ X0)) \wedge (m1_subset_1 X2 (k3_catalan2 X0))) \Rightarrow (k1_flang_1 X0 X1 X2 = \\ k1_ordinal4 X1 X2) \quad (12)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v5_ordinal1 X0) \wedge ((v1_funct_1 \\ X0) \wedge (v1_finset_1 X0)))) \Rightarrow (k1_afinsq_1 X0 = k1_card_1 X0) \quad (13)$$

Assume the following.

$$\forall X0. (v1_finset_1 X0) \Rightarrow ((v1_finset_1 (k1_card_1 X0)) \wedge (\\ v1_card_1 (k1_card_1 X0))) \quad (14)$$

Assume the following.

$$\forall X0. v4_funct_1 (k8_afinsq_1 X0) \quad (15)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow \\ (m1_subset_1 (k3_flang_1 X0 X1) (k3_catalan2 X0)) \quad (16)$$

Assume the following.

$$\forall X0. v1_card_1 (k1_card_1 X0) \quad (17)$$

Assume the following.

$$\forall X0.(v4_funct_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v1_relat_1 X1) \wedge (v1_funct_1 X1)) \quad (18)$$

Assume the following.

$$\forall X0.((v3_ordinal1 X0) \wedge (v1_finset_1 X0)) \Rightarrow (v7_ordinal1 X0) \quad (19)$$

Assume the following.

$$\forall X0.(v1_card_1 X0) \Rightarrow (v3_ordinal1 X0) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k8_afinsq_1 X0)) \Rightarrow ((v5_ordinal1 X1) \wedge (v1_finset_1 X1)) \quad (21)$$

Theorem 1

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k8_afinsq_1 X0)) \Rightarrow (\neg(\neg r1_xxreal_0 (k1_afinsq_1 X1) k6_numbers) \wedge (\forall X2. \\ (m1_subset_1 X2 X0) \Rightarrow (\forall X3.(m1_subset_1 X3 (k8_afinsq_1 X0)) \Rightarrow (X1 \neq k1_flang_1 X0 (k3_flang_1 X0 X2) X3)))))) \end{aligned}$$