

l8_fsm_2

(TMbcHnFVPoyS8Sp1PeombNSJsoNnBeyWupf)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_fsm_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r3_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_finseq_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (r1_tarski (k1_tarski X0) X1) \Leftrightarrow (X0 \in X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\ & (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow \\ & (k2_fsm_1 X0 X1 X2 (k6_finseq_1 X0) = k12_finseq_1 (u1_struct_0 \\ & X1) X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7_ordinal1 X0) \Rightarrow (\forall X1. (v7_ordinal1 X1) \Rightarrow ((\\ & X0 \in k2_finseq_1 X1) \Leftrightarrow ((r1_xxreal_0 np_1 X0) \wedge (r1_xxreal_0 X0 X1)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7_ordinal1 X0) \Rightarrow (\forall X1. (v7_ordinal1 X1) \Rightarrow (r1_xxreal_0 \\ & X0 (k2_xcmplx_0 X0 X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2_xreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$r1_xreal_0 \ np_1 \ np_1 \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 \ X0) \wedge ((\neg v1_xboole_0 \ X1) \wedge \\ & (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ & \ X2 \ X0 \ X1) \Leftrightarrow (m1_subset_1 \ X2 \ X1)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 \ X1 \ X0) \Leftrightarrow (m1_finseq_1 \ X1 \ X0) \quad (8)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1_subset_1 \ X0 \ k5_numbers) \wedge (v7_ordinal1 \\ & \ X1)) \Rightarrow (k2_nat_1 \ X0 \ X1 = k2_xcmplx_0 \ X0 \ X1) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 \ X0) \wedge (m1_subset_1 \ X1 \ X0)) \Rightarrow \\ & (k12_finseq_1 \ X0 \ X1 = k5_finseq_1 \ X1) \end{aligned} \quad (11)$$

Assume the following.

$$(\neg v1_xboole_0 \ k4_ordinal1) \wedge (v3_ordinal1 \ k4_ordinal1) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 \ X0) \wedge \\ & (((\neg v2_struct_0 \ X1) \wedge (l1_fsm_1 \ X1 \ X0)) \wedge ((m1_subset_1 \ X2 \ (u1_struct_0 \\ & \ X1)) \wedge (m1_finseq_1 \ X3 \ X0)))) \Rightarrow (\neg v1_xboole_0 \ (k2_fsm_1 \ X0 \ X1 \ X2 \ X3)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m2_finseq_1 \ X1 \ X0) \Rightarrow ((v1_funct_1 \ X1) \wedge (\\ & (v1_finseq_1 \ X1) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \\ & \ X0)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_finseq_1 \ X1 \ X0) \Rightarrow ((v1_relat_1 \ X1) \wedge (\\ & (v1_funct_1 \ X1) \wedge (v1_finseq_1 \ X1))) \end{aligned} \quad (15)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (16)$$

Assume the following.

$$\forall X0.((v1_relat_1 \ X0) \wedge ((v1_funct_1 \ X0) \wedge (v1_finseq_1 \ X0))) \Rightarrow \\ (m2_subset_1 \ (k3_finseq_1 \ X0) \ k1_numbers \ k5_numbers) \quad (17)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 \ X0) \wedge \\ (((\neg v2_struct_0 \ X1) \wedge (l1_fsm_1 \ X1 \ X0)) \wedge ((m1_subset_1 \ X2 \ (u1_struct_0 \\ X1)) \wedge (m1_finseq_1 \ X3 \ X0)))) \Rightarrow (m2_finseq_1 \ (k2_fsm_1 \ X0 \ X1 \ X2 \ X3) \\ (u1_struct_0 \ X1)) \quad (18)$$

Assume the following.

$$\forall X0. \forall X1. (r3_xboole_0 \ X0 \ X1) \Leftrightarrow ((r1_tarski \ X0 \ X1) \vee \\ (r1_tarski \ X1 \ X0)) \quad (19)$$

Assume the following.

$$\forall X0. k5_finseq_1 \ X0 = k1_tarski \ (k4_tarski \ np_1 \ X0) \quad (20)$$

Assume the following.

$$\forall X0. ((v1_relat_1 \ X0) \wedge ((v1_funct_1 \ X0) \wedge (v1_finseq_1 \ X0))) \Rightarrow \\ (\forall X1. (m2_subset_1 \ X1 \ k1_numbers \ k5_numbers) \Rightarrow ((X1 = k3_finseq_1 \\ X0) \Leftrightarrow (k2_finseq_1 \ X1 = k9_xtuple_0 \ X0))) \quad (21)$$

Assume the following.

$$\forall X0. ((v1_relat_1 \ X0) \wedge (v1_funct_1 \ X0)) \Rightarrow (\forall X1. \forall X2. \\ ((X1 \in k9_xtuple_0 \ X0) \Rightarrow ((X2 = k1_funct_1 \ X0 \ X1) \Leftrightarrow (k4_tarski \ X1 \ X2 \in \\ X0))) \wedge ((\neg X1 \in k9_xtuple_0 \ X0) \Rightarrow ((X2 = k1_funct_1 \ X0 \ X1) \Leftrightarrow (X2 = k1_xboole_0)))) \quad (22)$$

Assume the following.

$$\forall X0. (\neg v1_xboole_0 \ X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 \ X1) \wedge \\ (l1_fsm_1 \ X1 \ X0)) \Rightarrow (\forall X2. (m1_subset_1 \ X2 \ (u1_struct_0 \ X1)) \Rightarrow \\ (\forall X3. (m2_finseq_1 \ X3 \ X0) \Rightarrow (\forall X4. (m2_finseq_1 \ X4 \ (\\ u1_struct_0 \ X1)) \Rightarrow ((X4 = k2_fsm_1 \ X0 \ X1 \ X2 \ X3) \Leftrightarrow ((k1_funct_1 \ X4 \ np_1 = \\ X2) \wedge ((k3_finseq_1 \ X4 = k2_nat_1 \ (k3_finseq_1 \ X3) \ np_1) \wedge (\forall X5. \\ (v7_ordinal1 \ X5) \Rightarrow (\neg (r1_xxreal_0 \ np_1 \ X5) \wedge ((r1_xxreal_0 \ X5 \ (\\ k3_finseq_1 \ X3)) \wedge (\forall X6. (m1_subset_1 \ X6 \ X0) \Rightarrow (\forall X7. \\ (m1_subset_1 \ X7 \ (u1_struct_0 \ X1)) \Rightarrow (\forall X8. (m1_subset_1 \ X8 \\ (u1_struct_0 \ X1)) \Rightarrow (\neg (X6 = k1_funct_1 \ X3 \ X5) \wedge ((X7 = k1_funct_1 \ X4 \\ X5) \wedge ((X8 = k1_funct_1 \ X4 \ (k1_nat_1 \ X5 \ np_1)) \wedge (k1_fsm_1 \ X0 \ X1 \ X6 \\ X7 = X8)))))))))))))) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_numbers)\wedge(v7_ordinal1 X1))\Rightarrow(k2_nat_1 X0 X1 = k2_nat_1 X1 X0) \quad (24)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.(v1_xboole_0 X0)\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))\Rightarrow(v1_xboole_0 X2)) \quad (26)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0))\Rightarrow(v1_xboole_0 X1)) \quad (27)$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge \\ & (l1_fsm_1 X1 X0))\Rightarrow(\forall X2.(m2_finseq_1 X2 X0)\Rightarrow(\forall X3. \\ & (m1_subset_1 X3 (u1_struct_0 X1))\Rightarrow(r3_xboole_0 (k2_fsm_1 X0 X1 \\ & X3 (k6_finseq_1 X0)) (k2_fsm_1 X0 X1 X3 X2)))) \end{aligned}$$