

t2_fsm_1
(TMW9QYLFAoM5DArmU6cogf6wgq4RSDXBgBd)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k2_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $np_1 : \iota$ 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 $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_card_1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $v6_membered : \iota \Rightarrow o$ be given. Let $v1_card_1 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

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.

$$\begin{aligned} ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} (m2_subset_1 np_0 k1_numbers k5_numbers) \wedge ((m1_subset_1 np_0 \\ k5_numbers) \wedge (m1_subset_1 np_0 k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$v1_xboole_0 \text{ } np_0 \quad (5)$$

Assume the following.

$$k2_xcmplx_0 \text{ } np_0 \text{ } np_1 = np_1 \quad (6)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

$$\forall X0.((v1_relat_1 \text{ } X0) \wedge ((v1_funct_1 \text{ } X0) \wedge (v1_finseq_1 \text{ } X0))) \Rightarrow (k3_finseq_1 \text{ } X0 = k1_card_1 \text{ } X0) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 \text{ } X0 \text{ } k5_numbers) \wedge (v7_ordinal1 \text{ } X1)) \Rightarrow (k2_nat_1 \text{ } X0 \text{ } X1 = k2_xcmplx_0 \text{ } X0 \text{ } X1) \quad (9)$$

Assume the following.

$$\forall X0. \exists X1. (m1_finseq_1 \text{ } X1 \text{ } X0) \wedge ((v1_relat_1 \text{ } X1) \wedge ((v4_relat_1 \text{ } X1 \text{ } k5_numbers) \wedge ((v5_relat_1 \text{ } X1 \text{ } X0) \wedge ((v1_funct_1 \text{ } X1) \wedge ((v1_xboole_0 \text{ } X1) \wedge ((v1_finset_1 \text{ } X1) \wedge (v1_finseq_1 \text{ } X1)))))))) \quad (10)$$

Assume the following.

$$v6_membered \text{ } k4_ordinal1 \quad (11)$$

Assume the following.

$$\forall X0. (v1_xboole_0 \text{ } X0) \Rightarrow ((v1_xboole_0 \text{ } (k1_card_1 \text{ } X0)) \wedge (v1_card_1 \text{ } (k1_card_1 \text{ } X0))) \quad (12)$$

Assume the following.

$$\forall X0. m2_finseq_1 \text{ } (k6_finseq_1 \text{ } X0) \text{ } X0 \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 \text{ } X0) \wedge (((\neg v2_struct_0 \text{ } X1) \wedge (l1_fsm_1 \text{ } X1 \text{ } X0)) \wedge ((m1_subset_1 \text{ } X2 \text{ } (u1_struct_0 \text{ } X1)) \wedge (m1_finseq_1 \text{ } X3 \text{ } X0)))) \Rightarrow (m2_finseq_1 \text{ } (k2_fsm_1 \text{ } X0 \text{ } X1 \text{ } X2 \text{ } X3) \text{ } (u1_struct_0 \text{ } X1)) \quad (14)$$

Assume the following.

$$\forall X0. k6_finseq_1 \text{ } X0 = k1_xboole_0 \quad (15)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2.(m2_finseq_1 X2 X0) \Rightarrow (\forall X3. \\
& (m1_subset_1 X3 (u1_struct_0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 \\
& (u1_struct_0 X1)) \Rightarrow ((r1_fsm_1 X0 X1 X2 X3 X4) \Leftrightarrow (k1_funct_1 (k2_fsm_1 \\
& X0 X1 X3 X2) (k2_nat_1 (k3_finseq_1 X2) np_1) = X4))))))
\end{aligned} \tag{16}$$

Assume the following.

$$k1_xboole_0 = the (\lambda X0 : \iota.v1_xboole_0 X0) \tag{17}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow \\
& (\forall X3.(m2_finseq_1 X3 X0) \Rightarrow (\forall X4.(m2_finseq_1 X4 (\\
& u1_struct_0 X1)) \Rightarrow ((X4 = k2_fsm_1 X0 X1 X2 X3) \Leftrightarrow ((k1_funct_1 X4 np_1 = \\
& X2) \wedge ((k3_finseq_1 X4 = k2_nat_1 (k3_finseq_1 X3) np_1) \wedge (\forall X5. \\
& (v7_ordinal1 X5) \Rightarrow (\neg(r1_xxreal_0 np_1 X5) \wedge (r1_xxreal_0 X5 (\\
& k3_finseq_1 X3)) \wedge (\forall X6.(m1_subset_1 X6 X0) \Rightarrow (\forall X7. \\
& (m1_subset_1 X7 (u1_struct_0 X1)) \Rightarrow (\forall X8.(m1_subset_1 X8 \\
& (u1_struct_0 X1)) \Rightarrow (\neg(X6 = k1_funct_1 X3 X5) \wedge ((X7 = k1_funct_1 X4 \\
& X5) \wedge ((X8 = k1_funct_1 X4 (k1_nat_1 X5 np_1)) \wedge (k1_fsm_1 X0 X1 X6 \\
& X7 = X8))))))))))))))
\end{aligned} \tag{18}$$

Assume the following.

$$\forall X0.(v6_membered X0) \Rightarrow (\forall X1.(m1_subset_1 X1 X0) \Rightarrow (v7_ordinal1 X1)) \tag{19}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow \\
& (r1_fsm_1 X0 X1 (k6_finseq_1 X0) X2 X2)))
\end{aligned}$$