

t3_fsm_1
(TMJYiJK2bJcVodvnkJaEJvnErZr6gVaPKc9)

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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 $r2_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k12_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ 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 $np_1 : \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ 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.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\ & (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow \\ & (k2_fsm_1 X0 X1 X2 (k6_finseq_1 X0) = k12_finseq_1 (u1_struct_0 \\ & X1) X2))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(l1_fsm_1 X1 X0) \Rightarrow (l1_struct_0 X1) \quad (3)$$

Assume the following.

$$\forall X0.m2_finseq_1 (k6_finseq_1 X0) X0 \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 X0)) \Rightarrow (m2_finseq_1 (k12_finseq_1 X0 X1) X0) \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2.(m2_finseq_1 X2 X0) \Rightarrow (\forall X3. \\
& (m2_finseq_1 X3 (u1_struct_0 X1)) \Rightarrow ((r2_fsm_1 X0 X1 X2 X3) \Leftrightarrow (\exists X4. \\
& (m1_subset_1 X4 (u1_struct_0 X1)) \wedge ((X4 = k1_funct_1 X3 np_1) \wedge \\
& (k2_fsm_1 X0 X1 X4 X2 = X3))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow \\
& (\forall X3.(m2_finseq_1 X3 X0) \Rightarrow (\forall X4.(m2_finseq_1 X4 (\\
& u1_struct_0 X1)) \Rightarrow ((X4 = k2_fsm_1 X0 X1 X2 X3) \Leftrightarrow ((k1_funct_1 X4 np_1 = \\
& X2) \wedge ((k3_finseq_1 X4 = k2_nat_1 (k3_finseq_1 X3) np_1) \wedge (\forall X5. \\
& (v7_ordinal1 X5) \Rightarrow (\neg(r1_xreal_0 np_1 X5) \wedge (r1_xreal_0 X5 (\\
& k3_finseq_1 X3)) \wedge (\forall X6.(m1_subset_1 X6 X0) \Rightarrow (\forall X7. \\
& (m1_subset_1 X7 (u1_struct_0 X1)) \Rightarrow (\forall X8.(m1_subset_1 X8 \\
& (u1_struct_0 X1)) \Rightarrow (\neg(X6 = k1_funct_1 X3 X5) \wedge ((X7 = k1_funct_1 X4 \\
& X5) \wedge ((X8 = k1_funct_1 X4 (k1_nat_1 X5 np_1)) \wedge (k1_fsm_1 X0 X1 X6 \\
& X7 = X8))))))))))
\end{aligned} \tag{7}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge \\
& (l1_fsm_1 X1 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow \\
& (r2_fsm_1 X0 X1 (k6_finseq_1 X0) (k12_finseq_1 (u1_struct_0 X1) \\
& X2)))
\end{aligned}$$