

t28_fsm_2

(TMR7M9BRw5EqV4voytWtoFMUprsX28gJCQP)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_fsm_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $v5_fsm_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2_fsm_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_ordinal1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_fsm_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u4_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_partfun1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_fsm_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_square_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_fsm_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $l1_fsm_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $l1_fsm_2 : \iota \Rightarrow \iota \Rightarrow o$

be given. Let $l3_fsm_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge (l2_fsm_2 X0 (k2_zfmisc_1 k1_numbers \\
& k1_numbers) (k1_ordinal1 k1_numbers))) \Rightarrow (((v1_fsm_2 X0 (k2_zfmisc_1 \\
& k1_numbers k1_numbers)) \wedge ((u1_struct_0 X0 = k1_ordinal1 k1_numbers) \wedge \\
& ((u1_fsm_2 (k2_zfmisc_1 k1_numbers k1_numbers) X0 = k1_numbers) \wedge \\
& ((u2_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) X0 = k1_numbers) \wedge \\
& ((u4_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) (k1_ordinal1 \\
& k1_numbers) X0 = k6_partfun1 (u1_struct_0 X0)) \wedge (\forall X1. (\\
& m1_subset_1 X1 k1_numbers) \Rightarrow (\forall X2. (m1_subset_1 X2 k1_numbers) \Rightarrow \\
& ((r1_xreal_0 X2 X1) \Rightarrow (k3_funct_2 (k2_zfmisc_1 (u1_struct_0 X0) \\
& (k2_zfmisc_1 k1_numbers k1_numbers)) (u1_struct_0 X0) (u1_fsm_1 \\
& (k2_zfmisc_1 k1_numbers k1_numbers) X0) (k1_domain_1 (u1_struct_0 \\
& X0) (k2_zfmisc_1 k1_numbers k1_numbers) (u2_fsm_1 (k2_zfmisc_1 \\
& k1_numbers k1_numbers) X0) (k1_domain_1 k1_numbers k1_numbers \\
& X1 X2)) = X1)))))) \wedge (\forall X1. (m1_subset_1 X1 k1_numbers) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 k1_numbers) \Rightarrow ((\neg r1_xreal_0 X2 X1) \Rightarrow (k3_funct_2 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (k2_zfmisc_1 k1_numbers k1_numbers)) \\
& (u1_struct_0 X0) (u1_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) \\
& X0) (k1_domain_1 (u1_struct_0 X0) (k2_zfmisc_1 k1_numbers k1_numbers) \\
& (u2_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) X0) (k1_domain_1 \\
& k1_numbers k1_numbers X1 X2)) = X2)))))) \Rightarrow (\forall X1. (m1_subset_1 \\
& X1 k1_numbers) \Rightarrow (\forall X2. (m1_subset_1 X2 k1_numbers) \Rightarrow (r3_fsm_2 \\
& (k2_zfmisc_1 k1_numbers k1_numbers) (k1_ordinal1 k1_numbers) \\
& X0 (k1_domain_1 k1_numbers k1_numbers X1 X2) (k2_square_1 X1 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \neg v1_xboole_0 (k1_ordinal1 X0) \tag{2}$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (\neg v1_xboole_0 X1)) \Rightarrow \\
& (\neg v1_xboole_0 (k2_zfmisc_1 X0 X1))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (l1_fsm_1 X1 X0) \Rightarrow (m1_subset_1 (u2_fsm_1 \\
& X0 X1) (u1_struct_0 X1))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (l1_fsm_1 X1 X0) \Rightarrow ((v1_funct_1 (u1_fsm_1 \\
& X0 X1)) \wedge ((v1_funct_2 (u1_fsm_1 X0 X1) (k2_zfmisc_1 (u1_struct_0 \\
& X1) X0) (u1_struct_0 X1)) \wedge (m1_subset_1 (u1_fsm_1 X0 X1) (k1_zfmisc_1 \\
& (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) X0) (u1_struct_0 X1))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.(\neg v1_xboole_0 X1)\Rightarrow(\forall X2.(l2_fsm_2 X2 X0 X1)\Rightarrow((l1_fsm_2 X2 X0)\wedge(l3_fsm_1 X2 X0 X1))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(l1_fsm_2 X1 X0)\Rightarrow(l1_fsm_1 X1 X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge(((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0))\Rightarrow(m1_subset_1 (k3_funct_2 X0 X1 X2 X3) X1) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k1_numbers)\wedge(m1_subset_1 X1 k1_numbers))\Rightarrow(m1_subset_1 (k2_square_1 X0 X1) k1_numbers) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge((m1_subset_1 X2 X0)\wedge(m1_subset_1 X3 X1))))\Rightarrow(m1_subset_1 (k1_domain_1 X0 X1 X2 X3) (k2_zfmisc_1 X0 X1)) \quad (11)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(\neg v1_xboole_0 X1)\Rightarrow(\forall X2.((\neg v2_struct_0 X2)\wedge((v1_fsm_2 X2 X0)\wedge((v5_fsm_2 X2 X0)\wedge(l2_fsm_2 X2 X0 X1))))\Rightarrow(\forall X3.(m1_subset_1 X3 X0)\Rightarrow(\forall X4.(m1_subset_1 X4 X1)\Rightarrow((X4 = k2_fsm_2 X0 X1 X2 X3)\Leftrightarrow(r3_fsm_2 X0 X1 X2 X3 X4)))))) \quad (12)$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_fsm_2 X0 (k2_zfmisc_1 k1_numbers \\
& k1_numbers)) \wedge ((v5_fsm_2 X0 (k2_zfmisc_1 k1_numbers k1_numbers)) \wedge \\
& (l2_fsm_2 X0 (k2_zfmisc_1 k1_numbers k1_numbers) (k1_ordinal1 \\
& k1_numbers)))))) \Rightarrow (((u1_struct_0 X0 = k1_ordinal1 k1_numbers) \wedge \\
& ((u1_fsm_2 (k2_zfmisc_1 k1_numbers k1_numbers) X0 = k1_numbers) \wedge \\
& ((u2_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) X0 = k1_numbers) \wedge \\
& ((u4_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) (k1_ordinal1 \\
& k1_numbers) X0 = k6_partfun1 (u1_struct_0 X0)) \wedge ((\forall X1.(\\
& m1_subset_1 X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow \\
& ((r1_xxreal_0 X2 X1) \Rightarrow (k3_funct_2 (k2_zfmisc_1 (u1_struct_0 X0) \\
& (k2_zfmisc_1 k1_numbers k1_numbers)) (u1_struct_0 X0) (u1_fsm_1 \\
& (k2_zfmisc_1 k1_numbers k1_numbers) X0) (k1_domain_1 (u1_struct_0 \\
& X0) (k2_zfmisc_1 k1_numbers k1_numbers) (u2_fsm_1 (k2_zfmisc_1 \\
& k1_numbers k1_numbers) X0) (k1_domain_1 k1_numbers k1_numbers \\
& X1 X2)) = X1)))))) \wedge (\forall X1.(m1_subset_1 X1 k1_numbers) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 k1_numbers) \Rightarrow ((\neg r1_xxreal_0 X2 X1) \Rightarrow (k3_funct_2 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (k2_zfmisc_1 k1_numbers k1_numbers)) \\
& (u1_struct_0 X0) (u1_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) \\
& X0) (k1_domain_1 (u1_struct_0 X0) (k2_zfmisc_1 k1_numbers k1_numbers) \\
& (u2_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) X0) (k1_domain_1 \\
& k1_numbers k1_numbers X1 X2)) = X2)))))) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (k2_fsm_2 \\
& (k2_zfmisc_1 k1_numbers k1_numbers) (k1_ordinal1 k1_numbers) \\
& X0 (k1_domain_1 k1_numbers k1_numbers X1 X2) = k2_square_1 X1 X2))))))
\end{aligned}$$