

t30_fsm_2 (TM- RmN5V3NfX7eE24BPBtYdRUwmfxnU9L8ze)

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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 $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_fsm_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge (l2_fsm_2 X0 (k2_zfmisc_1 k1_numbers \\
 & k1_numbers) (k1_ordinal1 k1_numbers))) \Rightarrow (((v1_fsm_2 X0 (k2_zfmisc_1 \\
 & k1_numbers k1_numbers)) \wedge ((u1_struct_0 X0 = k1_ordinal1 k1_numbers) \wedge \\
 & ((u1_fsm_2 (k2_zfmisc_1 k1_numbers k1_numbers) X0 = k1_numbers) \wedge \\
 & ((u2_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) X0 = k1_numbers) \wedge \\
 & ((u4_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) (k1_ordinal1 \\
 & k1_numbers) X0 = k6_partfun1 (u1_struct_0 X0)) \wedge (\forall X1. (m1_subset_1 \\
 & X1 k1_numbers) \Rightarrow (\forall X2. (m1_subset_1 X2 k1_numbers) \Rightarrow (k3_funct_2 \\
 & (k2_zfmisc_1 (u1_struct_0 X0) (k2_zfmisc_1 k1_numbers k1_numbers)) \\
 & (u1_struct_0 X0) (u1_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) \\
 & X0) (k1_domain_1 (u1_struct_0 X0) (k2_zfmisc_1 k1_numbers k1_numbers) \\
 & (u2_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) X0) (k1_domain_1 \\
 & k1_numbers k1_numbers X1 X2)) = k7_real_1 X1 X2)))))) \Rightarrow (\forall X1. \\
 & (m1_subset_1 X1 k1_numbers) \Rightarrow (\forall X2. (m1_subset_1 X2 k1_numbers) \Rightarrow \\
 & (r3_fsm_2 (k2_zfmisc_1 k1_numbers k1_numbers) (k1_ordinal1 k1_numbers) \\
 & X0 (k1_domain_1 k1_numbers k1_numbers X1 X2) (k7_real_1 X1 X2)))))) \\
 & \tag{1}
 \end{aligned}$$

Assume the following.

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

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 \ X0)\wedge(\neg v1_xboole_0 \ X1))\Rightarrow (\neg v1_xboole_0 \ (k2_zfmisc_1 \ X0 \ X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(l1_fsm_1 \ X1 \ X0)\Rightarrow(m1_subset_1 \ (u2_fsm_1 \ X0 \ X1) \ (u1_struct_0 \ X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(l1_fsm_1 \ X1 \ X0)\Rightarrow(((v1_funct_1 \ (u1_fsm_1 \ X0 \ X1))\wedge((v1_funct_2 \ (u1_fsm_1 \ X0 \ X1) \ (k2_zfmisc_1 \ (u1_struct_0 \ X1) \ X1) \ X0) \ (u1_struct_0 \ X1))\wedge(m1_subset_1 \ (u1_fsm_1 \ X0 \ X1) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k2_zfmisc_1 \ (u1_struct_0 \ X1) \ X0) \ (u1_struct_0 \ X1)))))) \quad (6)$$

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.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 \ X0)\wedge((\neg v1_xboole_0 \ X1)\wedge((m1_subset_1 \ X2 \ X0)\wedge(m1_subset_1 \ X3 \ X1))))\Rightarrow(m1_subset_1 \ (k1_domain_1 \ X0 \ X1 \ X2 \ X3) \ (k2_zfmisc_1 \ X0 \ X1)) \quad (10)$$

Assume the following.

$$\forall X0.(\neg v1_xboole_0 \ X0)\Rightarrow(\forall X1.(\neg v1_xboole_0 \ X1)\Rightarrow(\forall X2.((\neg v2_struct_0 \ X2)\wedge((v1_fsm_2 \ X2 \ X0)\wedge((v5_fsm_2 \ X2 \ X0)\wedge(l2_fsm_2 \ X2 \ X0 \ X1))))\Rightarrow(\forall X3.(m1_subset_1 \ X3 \ X0)\Rightarrow(\forall X4.(m1_subset_1 \ X4 \ X1)\Rightarrow((X4 = k2_fsm_2 \ X0 \ X1 \ X2 \ X3)\Leftrightarrow(r3_fsm_2 \ X0 \ X1 \ X2 \ X3 \ X4)))))) \quad (11)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_fsm_2 X0 (k2_zfmisc_1 k1_numbers \\ & k1_numbers)) \wedge (v5_fsm_2 X0 (k2_zfmisc_1 k1_numbers k1_numbers)) \wedge \\ & (l2_fsm_2 X0 (k2_zfmisc_1 k1_numbers k1_numbers) (k1_ordinal1 \\ & k1_numbers)))))) \Rightarrow (((u1_struct_0 X0 = k1_ordinal1 k1_numbers) \wedge \\ & ((u1_fsm_2 (k2_zfmisc_1 k1_numbers k1_numbers) X0 = k1_numbers) \wedge \\ & ((u2_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) X0 = k1_numbers) \wedge \\ & ((u4_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) (k1_ordinal1 \\ & k1_numbers) X0 = k6_partfun1 (u1_struct_0 X0)) \wedge (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow (k3_funct_2 \\ & (k2_zfmisc_1 (u1_struct_0 X0) (k2_zfmisc_1 k1_numbers k1_numbers)) \\ & (u1_struct_0 X0) (u1_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) \\ & X0) (k1_domain_1 (u1_struct_0 X0) (k2_zfmisc_1 k1_numbers k1_numbers) \\ & (u2_fsm_1 (k2_zfmisc_1 k1_numbers k1_numbers) X0) (k1_domain_1 \\ & k1_numbers k1_numbers X1 X2)) = k7_real_1 X1 X2)))))) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 k1_numbers) \Rightarrow (\forall X2.(m1_subset_1 X2 k1_numbers) \Rightarrow \\ & (k2_fsm_2 (k2_zfmisc_1 k1_numbers k1_numbers) (k1_ordinal1 k1_numbers) \\ & X0 (k1_domain_1 k1_numbers k1_numbers X1 X2) = k7_real_1 X1 X2)))) \end{aligned}$$