

t14_fsm_3 (TM- NPKjYb12EV26i3pcBqFbtDvKsP69EGwHA)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k8_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g1_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_rewrite3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_rewrite3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_flang_1 : \iota \Rightarrow \iota$ be given. Let $k1_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_flang_1 : \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X1 X0) X1))) \Rightarrow (\forall X3. \forall X4. \\ & \forall X5. (g1_rewrite3 X0 X1 X2 = g1_rewrite3 X3 X4 X5) \Rightarrow ((X0 = X3) \wedge \\ & ((X1 = X4) \wedge (X2 = X5)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((m1_subset_1 \\ & X1 (k1_zfmisc_1 (k8_afinsq_1 X0))) \wedge ((\neg v2_struct_0 X2) \wedge (l1_fsm_3 \\ & X2 X0 X1)))) \Rightarrow ((\neg v2_struct_0 (g1_rewrite3 X1 (u1_struct_0 X2) (\\ & u1_rewrite3 X1 X2))) \wedge (v1_rewrite3 (g1_rewrite3 X1 (u1_struct_0 \\ & X2) (u1_rewrite3 X1 X2)) X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (l1_rewrite3 X1 X0) \Rightarrow (m1_subset_1 (u1_rewrite3 \\ & X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X1) \\ & X0) (u1_struct_0 X1)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k8_afinsq_1 X0)))) \Rightarrow (\forall X2. (l1_fsm_3 X2 X0 X1) \Rightarrow (l1_rewrite3 \\ & X2 X1)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((m1_subset_1 \\ & X1 (k1_zfmisc_1 (k8_afinsq_1 X0)))\wedge((\neg v2_struct_0 X2)\wedge(l1_fsm_3 \\ & X2 X0 X1))))\Rightarrow((v1_fsm_3 (k2_fsm_3 X0 X1 X2) X0 (k9_flang_1 X0))\wedge \\ & (l1_fsm_3 (k2_fsm_3 X0 X1 X2) X0 (k9_flang_1 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((m1_subset_1 \\ & X1 (k1_zfmisc_1 (k8_afinsq_1 X0)))\wedge((\neg v2_struct_0 X2)\wedge(l1_rewrite3 \\ & X2 X1))))\Rightarrow((v1_rewrite3 (k1_fsm_3 X0 X1 X2) (k9_flang_1 X0))\wedge(\\ & l1_rewrite3 (k1_fsm_3 X0 X1 X2) (k9_flang_1 X0))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X1 X0) X1)))\Rightarrow((v1_rewrite3 (g1_rewrite3 \\ & X0 X1 X2) X0)\wedge(l1_rewrite3 (g1_rewrite3 X0 X1 X2) X0)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k8_afinsq_1 X0)))\Rightarrow(\forall X2.((\neg v2_struct_0 X2)\wedge(l1_fsm_3 \\ & X2 X0 X1))\Rightarrow(\forall X3.((v1_fsm_3 X3 X0 (k9_flang_1 X0))\wedge(l1_fsm_3 \\ & X3 X0 (k9_flang_1 X0)))\Rightarrow((X3 = k2_fsm_3 X0 X1 X2)\Leftrightarrow((g1_rewrite3 \\ & (k9_flang_1 X0) (u1_struct_0 X3) (u1_rewrite3 (k9_flang_1 X0) \\ & X3) = k1_fsm_3 X0 X1 (g1_rewrite3 X1 (u1_struct_0 X2) (u1_rewrite3 \\ & X1 X2)))\wedge(u1_fsm_3 X0 (k9_flang_1 X0) X3 = k6_domain_1 (k1_zfmisc_1 \\ & (u1_struct_0 X2)) (k3_rewrite3 X0 X1 X2 (k2_flang_1 X0) (u1_fsm_3 \\ & X0 X1 X2)))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & (k8_afinsq_1 X0)))\Rightarrow(\forall X2.((\neg v2_struct_0 X2)\wedge(l1_rewrite3 \\ & X2 X1))\Rightarrow(\forall X3.((v1_rewrite3 X3 (k9_flang_1 X0))\wedge(l1_rewrite3 \\ & X3 (k9_flang_1 X0)))\Rightarrow((X3 = k1_fsm_3 X0 X1 X2)\Leftrightarrow((u1_struct_0 X3 = \\ & k1_zfmisc_1 (u1_struct_0 X2))\wedge(\forall X4.(m1_subset_1 X4 (k1_zfmisc_1 \\ & (u1_struct_0 X2)))\Rightarrow(\forall X5.(m1_subset_1 X5 (k8_afinsq_1 \\ & X0))\Rightarrow(\forall X6.(m1_subset_1 X6 (k1_zfmisc_1 (u1_struct_0 X2)))\Rightarrow \\ & ((k1_domain_1 (k2_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X2)) (k8_afinsq_1 \\ & X0)) (k1_zfmisc_1 (u1_struct_0 X2)) (k1_domain_1 (k1_zfmisc_1 \\ & (u1_struct_0 X2)) (k8_afinsq_1 X0) X4 X5) X6 \in u1_rewrite3 (k9_flang_1 \\ & X0) X3)\Leftrightarrow((k1_afinsq_1 X5 = np_1)\wedge(X6 = k3_rewrite3 X0 X1 X2 X5 X4)))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(l1_rewrite3\ X1\ X0)\Rightarrow((v1_rewrite3\ X1\ X0)\Rightarrow (X1 = g1_rewrite3\ X0\ (u1_struct_0\ X1)\ (u1_rewrite3\ X0\ X1))) \quad (10)$$

Theorem 1

$$\forall X0.(\neg v1_xboole_0\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ (k8_afinsq_1\ X0)))\Rightarrow(\forall X2.((\neg v2_struct_0\ X2)\wedge(l1_fsm_3\ X2\ X0\ X1))\Rightarrow(u1_struct_0\ (k2_fsm_3\ X0\ X1\ X2) = k1_zfmisc_1\ (u1_struct_0\ X2))))$$