

t39_fsm_3

(TMS74HG5WCZnTFDxLq1BcpexTjNVxTtjyPm)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $l2_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_catalan2 : \iota \Rightarrow \iota$ be given. Let $k9_flang_1 : \iota \Rightarrow \iota$ be given. Let $k4_flang_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_flang_1 : \iota \Rightarrow \iota$ be given. Let $v4_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_afinsq_1 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v3_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\ & (l2_fsm_3 X1 X0 (k4_subset_1 (k3_catalan2 X0) (k9_flang_1 X0) (\\ & k4_flang_1 X0 (k2_flang_1 X0)))))) \Rightarrow (k6_fsm_3 X0 (k4_subset_1 (\\ & k3_catalan2 X0) (k9_flang_1 X0) (k4_flang_1 X0 (k2_flang_1 X0))) \\ & X1 = k6_fsm_3 X0 (k9_flang_1 X0) (k4_fsm_3 X0 (k4_subset_1 (k3_catalan2 \\ & X0) (k9_flang_1 X0) (k4_flang_1 X0 (k2_flang_1 X0))) X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. k3_catalan2 X0 = k8_afinsq_1 X0 \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X0) \wedge ((m1_subset_1 \\ & X1 (k1_zfmisc_1 (k8_afinsq_1 X0))) \wedge ((\neg v2_struct_0 X2) \wedge (l2_fsm_3 \\ & X2 X0 X1)))) \Rightarrow ((\neg v2_struct_0 (k4_fsm_3 X0 X1 X2)) \wedge ((v3_fsm_3 (k4_fsm_3 \\ & X0 X1 X2) X0 (k9_flang_1 X0)) \wedge (v4_fsm_3 (k4_fsm_3 X0 X1 X2) X0 (k9_flang_1 \\ & X0)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. m1_subset_1 (k9_flang_1 X0) (k1_zfmisc_1 (k3_catalan2 X0)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1_subset_1 X1 (k1_zfmisc_1 X0))\wedge(m1_subset_1 X2 (k1_zfmisc_1 X0)))\Rightarrow(m1_subset_1 (k4_subset_1 X0 X1 X2) (k1_zfmisc_1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((m1_subset_1 X1 (k1_zfmisc_1 (k8_afinsq_1 X0)))\wedge((\neg v2_struct_0 X2)\wedge(l2_fsm_3 X2 X0 X1))))\Rightarrow((v3_fsm_3 (k4_fsm_3 X0 X1 X2) X0 (k9_flang_1 X0))\wedge(l2_fsm_3 (k4_fsm_3 X0 X1 X2) X0 (k9_flang_1 X0))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k3_catalan2 X0))\Rightarrow(m1_subset_1 (k4_flang_1 X0 X1) (k1_zfmisc_1 (k3_catalan2 X0))) \quad (7)$$

Assume the following.

$$\forall X0.m1_subset_1 (k2_flang_1 X0) (k3_catalan2 X0) \quad (8)$$

Theorem 1

$$\forall X0.(\neg v1_xboole_0 X0)\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge(l2_fsm_3 X1 X0 (k4_subset_1 (k3_catalan2 X0) (k9_flang_1 X0) (k4_flang_1 X0 (k2_flang_1 X0))))))\Rightarrow(\exists X2.((\neg v2_struct_0 X2)\wedge((v4_fsm_3 X2 X0 (k9_flang_1 X0))\wedge(l2_fsm_3 X2 X0 (k9_flang_1 X0))))\wedge(k6_fsm_3 X0 (k4_subset_1 (k3_catalan2 X0) (k9_flang_1 X0) (k4_flang_1 X0 (k2_flang_1 X0))) X1 = k6_fsm_3 X0 (k9_flang_1 X0) X2)))$$