

t37_fsm_3

(TMFa99mHhEDwsZGxV2D2oFwZrpLHawYGFes)

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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 $k8_afinsq_1 : \iota \Rightarrow \iota$ 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 $k3_rewrite3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_fsm_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (\neg v1_xboole_0 X1) \Rightarrow (\forall X2. (m1_subset_1 \\
& \quad X2 (k8_afinsq_1 X1)) \Rightarrow (\forall X3. ((\neg v2_struct_0 X3) \wedge (l2_fsm_3 \\
& \quad X3 X1 (k4_subset_1 (k3_catalan2 X1) (k9_flang_1 X1) (k4_flang_1 \\
& \quad X1 (k2_flang_1 X1)))) \Rightarrow (k3_rewrite3 X1 (k9_flang_1 X1) (k4_fsm_3 \\
& \quad X1 (k4_subset_1 (k3_catalan2 X1) (k9_flang_1 X1) (k4_flang_1 X1 \\
& \quad (k2_flang_1 X1))) X3) X2 (k6_domain_1 (k1_zfmisc_1 (u1_struct_0 \\
& \quad X3)) (k3_rewrite3 X1 (k4_subset_1 (k3_catalan2 X1) (k9_flang_1 \\
& \quad X1) (k4_flang_1 X1 (k2_flang_1 X1))) X3 (k2_flang_1 X1) X0)) = k6_domain_1 \\
& \quad (k1_zfmisc_1 (u1_struct_0 X3)) (k3_rewrite3 X1 (k4_subset_1 (\\
& \quad k3_catalan2 X1) (k9_flang_1 X1) (k4_flang_1 X1 (k2_flang_1 X1))) \\
& \quad X3 X2 X0))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge \\
& \quad (l2_fsm_3 X1 X0 (k4_subset_1 (k3_catalan2 X0) (k9_flang_1 X0) (\\
& \quad k4_flang_1 X0 (k2_flang_1 X0)))) \Rightarrow (u1_fsm_3 X0 (k9_flang_1 X0) \\
& \quad (k4_fsm_3 X0 (k4_subset_1 (k3_catalan2 X0) (k9_flang_1 X0) (k4_flang_1 \\
& \quad X0 (k2_flang_1 X0))) X1) = k6_domain_1 (k1_zfmisc_1 (u1_struct_0 \\
& \quad X1)) (k3_rewrite3 X0 (k4_subset_1 (k3_catalan2 X0) (k9_flang_1 \\
& \quad X0) (k4_flang_1 X0 (k2_flang_1 X0))) X1 (k2_flang_1 X0) (u1_fsm_3 \\
& \quad X0 (k4_subset_1 (k3_catalan2 X0) (k9_flang_1 X0) (k4_flang_1 X0 \\
& \quad (k2_flang_1 X0))) X1))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k8_afinsq_1 \\ & X0)) \Rightarrow (\forall X2.((\neg v2_struct_0 X2) \wedge (l2_fsm_3 X2 X0 (k4_subset_1 \\ & (k3_catalan2 X0) (k9_flang_1 X0) (k4_flang_1 X0 (k2_flang_1 X0)))))) \Rightarrow \\ & (k3_rewrite3 X0 (k9_flang_1 X0) (k4_fsm_3 X0 (k4_subset_1 (k3_catalan2 \\ & X0) (k9_flang_1 X0) (k4_flang_1 X0 (k2_flang_1 X0))) X2) X1 (u1_fsm_3 \\ & X0 (k9_flang_1 X0) (k4_fsm_3 X0 (k4_subset_1 (k3_catalan2 X0) (\\ & k9_flang_1 X0) (k4_flang_1 X0 (k2_flang_1 X0))) X2)) = k6_domain_1 \\ & (k1_zfmisc_1 (u1_struct_0 X2)) (k3_rewrite3 X0 (k4_subset_1 (\\ & k3_catalan2 X0) (k9_flang_1 X0) (k4_flang_1 X0 (k2_flang_1 X0))) \\ & X2 X1 (u1_fsm_3 X0 (k4_subset_1 (k3_catalan2 X0) (k9_flang_1 X0) \\ & (k4_flang_1 X0 (k2_flang_1 X0))) X2)))))) \end{aligned}$$