

t51_twoscomp

(TMHR5tLjodDign7V9VajooAhkVmfhx3yZNY)

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Let $v1_xtuple_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k40_twoscomp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k41_twoscomp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_circuit2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k36_twoscomp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_twoscomp : \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k39_twoscomp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_twoscomp : \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xtuple_0 X0) \Rightarrow (\forall X1. (\neg v1_xtuple_0 X1) \Rightarrow \\
& (\forall X2. (m1_subset_1 X2 (k4_card_3 (u3_msualg_1 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1)))) \Rightarrow ((k1_funct_1 (k6_circuit2 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1) X2) (k39_twoscomp X0 X1) = k1_funct_1 \\
& k3_twoscomp (k10_finseq_1 (k1_funct_1 X2 X0) (k1_funct_1 X2 X1))) \wedge \\
& ((k1_funct_1 (k6_circuit2 (k40_twoscomp X0 X1) (k41_twoscomp \\
& X0 X1) X2) X0 = k1_funct_1 X2 X0) \wedge (k1_funct_1 (k6_circuit2 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1) X2) X1 = k1_funct_1 X2 X1))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (\neg v1_xtuple_0 X0) \Rightarrow (\forall X1. (\neg v1_xtuple_0 X1) \Rightarrow \\
& (\forall X2. (m1_subset_1 X2 (k4_card_3 (u3_msualg_1 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1)))) \Rightarrow ((k1_funct_1 (k6_circuit2 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1) X2) (k36_twoscomp X0 X1) = k1_funct_1 \\
& k15_twoscomp (k10_finseq_1 (k1_funct_1 X2 X0) (k1_funct_1 X2 X1))) \wedge \\
& ((k1_funct_1 (k6_circuit2 (k40_twoscomp X0 X1) (k41_twoscomp \\
& X0 X1) X2) X0 = k1_funct_1 X2 X0) \wedge (k1_funct_1 (k6_circuit2 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1) X2) X1 = k1_funct_1 X2 X1))))))
\end{aligned} \tag{2}$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xtuple_0 X0) \Rightarrow (\forall X1.(\neg v1_xtuple_0 X1) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (k4_card_3 (u3_msualg_1 (k40_twoscomp \\ & X0 X1) (k41_twoscomp X0 X1)))) \Rightarrow ((k1_funct_1 (k6_circuit2 (k40_twoscomp \\ & X0 X1) (k41_twoscomp X0 X1) X2) (k36_twoscomp X0 X1) = k1_funct_1 \\ & k15_twoscomp (k10_finseq_1 (k1_funct_1 X2 X0) (k1_funct_1 X2 X1))) \wedge \\ & ((k1_funct_1 (k6_circuit2 (k40_twoscomp X0 X1) (k41_twoscomp \\ & X0 X1) X2) (k39_twoscomp X0 X1) = k1_funct_1 k3_twoscomp (k10_finseq_1 \\ & (k1_funct_1 X2 X0) (k1_funct_1 X2 X1))) \wedge ((k1_funct_1 (k6_circuit2 \\ & (k40_twoscomp X0 X1) (k41_twoscomp X0 X1) X2) X0 = k1_funct_1 X2 X0) \wedge \\ & (k1_funct_1 (k6_circuit2 (k40_twoscomp X0 X1) (k41_twoscomp X0 \\ & X1) X2) X1 = k1_funct_1 X2 X1)))))) \end{aligned}$$