

t52_twoscomp

(TMRBbV5ihcV5X2kjEtiXuNuovn86WZZJy3u)

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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 $k6_margrel1 : \iota$ 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 $k2_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_margrel1 : \iota \Rightarrow \iota$ be given. Let $k39_twoscomp : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xtuple_0 X0) \Rightarrow (\forall X1.(\neg v1_xtuple_0 X1) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 (k4_card_3 (u3_msualg_1 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1)))) \Rightarrow (\forall X3.(m1_subset_1 X3 k6_margrel1) \Rightarrow \\
& (\forall X4.(m1_subset_1 X4 k6_margrel1) \Rightarrow (((X3 = k1_funct_1 X2 \\
& X0) \wedge (X4 = k1_funct_1 X2 X1)) \Rightarrow ((k1_funct_1 (k6_circuit2 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1) X2) (k39_twoscomp X0 X1) = k10_margrel1 \\
& (k9_margrel1 X3) X4) \wedge ((k1_funct_1 (k6_circuit2 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1) X2) X0 = X3) \wedge (k1_funct_1 (k6_circuit2 \\
& (k40_twoscomp X0 X1) (k41_twoscomp X0 X1) X2) X1 = X4))))))))) \\
& \tag{1}
\end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xtuple_0 X0) \Rightarrow (\forall X1.(\neg v1_xtuple_0 X1) \Rightarrow \\
& (\forall X2.(m1_subset_1 X2 (k4_card_3 (u3_msualg_1 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1)))) \Rightarrow (\forall X3.(m1_subset_1 X3 k6_margrel1) \Rightarrow \\
& (\forall X4.(m1_subset_1 X4 k6_margrel1) \Rightarrow (((X3 = k1_funct_1 X2 \\
& X0) \wedge (X4 = k1_funct_1 X2 X1)) \Rightarrow ((k1_funct_1 (k6_circuit2 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1) X2) (k36_twoscomp X0 X1) = k2_binarith \\
& (k9_margrel1 X3) X4) \wedge ((k1_funct_1 (k6_circuit2 (k40_twoscomp \\
& X0 X1) (k41_twoscomp X0 X1) X2) X0 = X3) \wedge (k1_funct_1 (k6_circuit2 \\
& (k40_twoscomp X0 X1) (k41_twoscomp X0 X1) X2) X1 = X4))))))))) \\
& \tag{2}
\end{aligned}$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xtuple_0 X0) \Rightarrow (\forall X1.(\neg v1_xtuple_0 X1) \Rightarrow \\ & (\forall X2.(m1_subset_1 X2 (k4_card_3 (u3_msualg_1 (k40_twoscomp \\ & X0 X1) (k41_twoscomp X0 X1)))) \Rightarrow (\forall X3.(m1_subset_1 X3 k6_margrel1) \Rightarrow \\ & (\forall X4.(m1_subset_1 X4 k6_margrel1) \Rightarrow (((X3 = k1_funct_1 X2 \\ & X0) \wedge (X4 = k1_funct_1 X2 X1) \Rightarrow ((k1_funct_1 (k6_circuit2 (k40_twoscomp \\ & X0 X1) (k41_twoscomp X0 X1) X2) (k36_twoscomp X0 X1) = k2_binarith \\ & (k9_margrel1 X3) X4) \wedge ((k1_funct_1 (k6_circuit2 (k40_twoscomp \\ & X0 X1) (k41_twoscomp X0 X1) X2) (k39_twoscomp X0 X1) = k10_margrel1 \\ & (k9_margrel1 X3) X4) \wedge ((k1_funct_1 (k6_circuit2 (k40_twoscomp \\ & X0 X1) (k41_twoscomp X0 X1) X2) X0 = X3) \wedge (k1_funct_1 (k6_circuit2 \\ & (k40_twoscomp X0 X1) (k41_twoscomp X0 X1) X2) X1 = X4)))))))))) \end{aligned}$$