

t124_gfacirc1

(TMYth1YkSQsaxW7avxDmKD3FrGsZ8uj3ax)

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Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_twoscomp : \iota$ 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 $k46_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k47_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_margrel1 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_twoscomp : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_circuit2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k48_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 (k4_finseq_2 np_2 \\
 & k6_margrel1) k6_margrel1) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & (k4_finseq_2 np_2 k6_margrel1) k6_margrel1)))) \Rightarrow (\forall X1. \\
 & \quad \forall X2. \forall X3. (X3 \neq k4_tarski (k10_finseq_1 X1 X2) X0) \Rightarrow \\
 & \quad (\forall X4. (m1_subset_1 X4 (k4_card_3 (u3_msualg_1 (k8_facirc_1 \\
 & X1 X2 X3 X0) (k10_facirc_1 X1 X2 X3 X0)))) \Rightarrow ((k1_twoscomp (k8_facirc_1 \\
 & X1 X2 X3 X0) (k10_facirc_1 X1 X2 X3 X0) (k6_circuit2 (k8_facirc_1 \\
 & X1 X2 X3 X0) (k10_facirc_1 X1 X2 X3 X0) X4) (k9_facirc_1 X1 X2 X3 X0) = \\
 & \quad k1_funct_1 X0 (k10_finseq_1 (k1_funct_1 X4 (k4_tarski (k10_finseq_1 \\
 & X1 X2) X0)) (k1_funct_1 X4 X3))) \wedge ((k1_funct_1 (k6_circuit2 (k8_facirc_1 \\
 & X1 X2 X3 X0) (k10_facirc_1 X1 X2 X3 X0) X4) (k4_tarski (k10_finseq_1 \\
 & X1 X2) X0) = k1_funct_1 X0 (k10_finseq_1 (k1_funct_1 X4 X1) (k1_funct_1 \\
 & X4 X2))) \wedge ((k1_funct_1 (k6_circuit2 (k8_facirc_1 X1 X2 X3 X0) (k10_facirc_1 \\
 & X1 X2 X3 X0) X4) X1 = k1_funct_1 X4 X1) \wedge ((k1_funct_1 (k6_circuit2 \\
 & (k8_facirc_1 X1 X2 X3 X0) (k10_facirc_1 X1 X2 X3 X0) X4) X2 = k1_funct_1 \\
 & X4 X2) \wedge (k1_funct_1 (k6_circuit2 (k8_facirc_1 X1 X2 X3 X0) (k10_facirc_1 \\
 & X1 X2 X3 X0) X4) X3 = k1_funct_1 X4 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$(v1_funct_1\ k14_twoscomp) \wedge ((v1_funct_2\ k14_twoscomp\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1) \wedge (m1_subset_1\ k14_twoscomp\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1)))) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k48_gfacirc1\ X0\ X1\ X2 = k9_facirc1\ X0\ X1\ X2\ k14_twoscomp \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k47_gfacirc1\ X0\ X1\ X2 = k10_facirc1\ X0\ X1\ X2\ k14_twoscomp \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k46_gfacirc1\ X0\ X1\ X2 = k8_facirc1\ X0\ X1\ X2\ k14_twoscomp \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1\ X0) \wedge ((v1_funct_2\ X0\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1) \wedge (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ (k4_finseq_2\ np_2\ k6_margrel1)\ k6_margrel1)))))) \Rightarrow ((X0 = k14_twoscomp) \Leftrightarrow \\ & (\forall X1.(m1_subset_1\ X1\ k6_margrel1) \Rightarrow (\forall X2.(m1_subset_1\ X2\ k6_margrel1) \Rightarrow (k1_funct_1\ X0\ (k10_finseq_1\ X1\ X2) = k2_binarith\ X1\ X2)))) \quad (6) \end{aligned}$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(X2 \neq k4_tarski\ (k10_finseq_1\ X0\ X1)\ k14_twoscomp) \Rightarrow (\forall X3.(m1_subset_1\ X3\ (k4_card_3\ (u3_msualg_1\ (k46_gfacirc1\ X0\ X1\ X2)\ (k47_gfacirc1\ X0\ X1\ X2)))) \Rightarrow \\ & (\forall X4.(m1_subset_1\ X4\ k6_margrel1) \Rightarrow (\forall X5.(m1_subset_1\ X5\ k6_margrel1) \Rightarrow (\forall X6.(m1_subset_1\ X6\ k6_margrel1) \Rightarrow (\forall X7. \\ & (m1_subset_1\ X7\ k6_margrel1) \Rightarrow (((X4 = k1_funct_1\ X3\ (k4_tarski\ (k10_finseq_1\ X0\ X1)\ k14_twoscomp)) \wedge ((X5 = k1_funct_1\ X3\ X0) \wedge \\ & (X6 = k1_funct_1\ X3\ X1) \wedge (X7 = k1_funct_1\ X3\ X2)))) \Rightarrow (k1_twoscomp\ (k46_gfacirc1\ X0\ X1\ X2)\ (k47_gfacirc1\ X0\ X1\ X2)\ (k6_circuit2\ (k46_gfacirc1\ X0\ X1\ X2)\ (k47_gfacirc1\ X0\ X1\ X2)\ X3)\ (k48_gfacirc1\ X0\ X1\ X2) = k2_binarith\ X4\ X7)))))) \end{aligned}$$