

t17_circuit2

(TMH6hNSvCj2MF77Qb8EuyDX7WjMNV93rH2c)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v8_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v2_msafree2 : \iota \Rightarrow o$ be given. Let $v5_msafree2 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v4_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_msafree2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_msafree2 : \iota \Rightarrow \iota$ be given. Let $k7_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_msafree2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_funct_1 : \iota \Rightarrow o$ be given. Let $k10_funct_6 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k7_circuit1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_circuit2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_circuit2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_circuit1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v8_struct_0 X0) \wedge ((\neg v11_struct_0 \\ & X0) \wedge ((v2_msafree2 X0) \wedge ((v5_msafree2 X0) \wedge (l1_msualg_1 X0)))))) \Rightarrow \\ & (\forall X1. ((v4_msualg_1 X1 X0) \wedge ((v4_msafree2 X1 X0) \wedge (l3_msualg_1 \\ & X1 X0)))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (r1_xxreal_0 \\ & (k6_circuit1 X0 X1 X2) (k7_circuit1 X0 X1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v8_struct_0 X0) \wedge ((\neg v11_struct_0 \\
& X0) \wedge ((v2_msafree2 X0) \wedge ((v5_msafree2 X0) \wedge (l1_msualg_1 X0)))))) \Rightarrow \\
& (\forall X1.((v4_msualg_1 X1 X0) \wedge ((v4_msafree2 X1 X0) \wedge (l3_msualg_1 \\
& X1 X0)))) \Rightarrow (\forall X2.(m2_pboole X2 (k2_msafree2 X0) (k7_funcop_1 \\
& (k2_msafree2 X0) k5_numbers) (k5_relat_1 (u3_msualg_1 X0 X1) (\\
& k2_msafree2 X0))) \Rightarrow ((v3_funct_1 (k10_funct_6 X2)) \Rightarrow ((v1_xboole_0 \\
& (k2_msafree2 X0)) \vee (\forall X3.(m1_subset_1 X3 (k4_card_3 (u3_msualg_1 \\
& X0 X1)))) \Rightarrow (\forall X4.(m1_msafree2 X4 X0 X1)) \Rightarrow ((X4 = k1_funct_1 (\\
& k10_funct_6 X2) k6_numbers) \Rightarrow (\forall X5.(m1_subset_1 X5 k5_numbers) \Rightarrow \\
& (\forall X6.(m1_subset_1 X6 (u1_struct_0 X0)) \Rightarrow ((r1_xxreal_0 \\
& (k6_circuit1 X0 X1 X6) X5) \Rightarrow (k1_funct_1 (k8_nat_1 (k4_card_3 (u3_msualg_1 \\
& X0 X1)) (k9_circuit2 X0 X1 X2 X3) X5) X6 = k5_circuit2 X0 X1 X6 X4))))))))) \\
& \qquad \qquad \qquad (2)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v8_struct_0 X0) \wedge ((\neg v11_struct_0 \\
& X0) \wedge ((v2_msafree2 X0) \wedge ((v5_msafree2 X0) \wedge (l1_msualg_1 X0)))))) \Rightarrow \\
& (\forall X1.((v4_msualg_1 X1 X0) \wedge ((v4_msafree2 X1 X0) \wedge (l3_msualg_1 \\
& X1 X0)))) \Rightarrow (\forall X2.(m2_pboole X2 (k2_msafree2 X0) (k7_funcop_1 \\
& (k2_msafree2 X0) k5_numbers) (k5_relat_1 (u3_msualg_1 X0 X1) (\\
& k2_msafree2 X0))) \Rightarrow (\forall X3.(m1_msafree2 X3 X0 X1) \Rightarrow (((v3_funct_1 \\
& (k10_funct_6 X2)) \wedge (X3 = k1_funct_1 (k10_funct_6 X2) k6_numbers)) \Rightarrow \\
& ((v1_xboole_0 (k2_msafree2 X0)) \vee (\forall X4.(m1_subset_1 X4 \\
& (k4_card_3 (u3_msualg_1 X0 X1)))) \Rightarrow (\forall X5.(m1_subset_1 X5 \\
& (u1_struct_0 X0)) \Rightarrow (\forall X6.(m1_subset_1 X6 k5_numbers) \Rightarrow (\\
& (X6 = k7_circuit1 X0 X1) \Rightarrow (k1_funct_1 (k8_nat_1 (k4_card_3 (u3_msualg_1 \\
& X0 X1)) (k9_circuit2 X0 X1 X2 X4) X6) X5 = k5_circuit2 X0 X1 X5 X3))))))))) \\
& \qquad \qquad \qquad (2)
\end{aligned}$$