

t34_circcomb
(TMGZYPCZ3tpPNBFpgMh1wcKsbRMm1DZUjEE)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v2_msafree2 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_msafree2 : \iota \Rightarrow \iota$ be given. Let $k2_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r2_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k11_card_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_circuit2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_msafree2 : \iota \Rightarrow \iota$ be given. Let $k6_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_msualg_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. r1_xboole_0 (k4_xboole_0 X0 X1) X1 \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1_tarski X0 X1) \wedge (r1_xboole_0 X1 X2)) \Rightarrow (r1_xboole_0 X0 X2) \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_msafree2 \\
& \quad X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((\neg \\
& \quad v11_struct_0 X1) \wedge ((v2_msafree2 X1) \wedge (l1_msualg_1 X1)))) \Rightarrow (\forall X2. \\
& \quad ((\neg v2_struct_0 X2) \wedge ((\neg v11_struct_0 X2) \wedge ((v2_msafree2 X2) \wedge (\\
& \quad l1_msualg_1 X2)))) \Rightarrow (((r1_xboole_0 (k3_msafree2 X1) (k2_msafree2 \\
& \quad X0)) \wedge (X2 = k2_circcomb X0 X1)) \Rightarrow (\forall X3.((v4_msualg_1 X3 X0) \wedge \\
& \quad ((v4_msafree2 X3 X0) \wedge (l3_msualg_1 X3 X0))) \Rightarrow (\forall X4.((v4_msualg_1 \\
& \quad X4 X1) \wedge ((v4_msafree2 X4 X1) \wedge (l3_msualg_1 X4 X1))) \Rightarrow (\forall X5. \\
& \quad ((v4_msualg_1 X5 X2) \wedge ((v4_msafree2 X5 X2) \wedge (l3_msualg_1 X5 X2))) \Rightarrow \\
& \quad (((r2_circcomb X0 X1 X3 X4) \wedge (X5 = k3_circcomb X0 X1 X3 X4)) \Rightarrow (\forall X6. \\
& \quad (m1_subset_1 X6 (k4_card_3 (u3_msualg_1 X2 X5))) \Rightarrow (\forall X7. \\
& \quad (m1_subset_1 X7 (k4_card_3 (u3_msualg_1 X0 X3))) \Rightarrow (\forall X8. \\
& \quad (m1_subset_1 X8 (k4_card_3 (u3_msualg_1 X1 X4))) \Rightarrow (((X7 = k11_card_3 \\
& \quad (u3_msualg_1 X2 X5) X6 (u1_struct_0 X0)) \wedge (X8 = k11_card_3 (u3_msualg_1 \\
& \quad X2 X5) X6 (u1_struct_0 X1))) \Rightarrow (k6_circuit2 X2 X5 X6 = k1_funct_4 (\\
& \quad k6_circuit2 X1 X4 X8) (k6_circuit2 X0 X3 X7)))))))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. (r1_xboole_0 X0 X1) \Rightarrow (r1_xboole_0 X1 X0) \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. k6_subset_1 X0 X1 = k4_xboole_0 X0 X1 \tag{5}$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (k3_msafree2 \\
X0 = k2_reset_1 (u1_struct_0 X0) (u2_msualg_1 X0)) \tag{6}$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (k2_msafree2 \\
X0 = k6_subset_1 (u1_struct_0 X0) (k2_reset_1 (u1_struct_0 X0) \\
(u2_msualg_1 X0))) \tag{7}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (\neg v11_struct_0 X0) \wedge ((v2_msafree2 \\
& \quad X0) \wedge (l1_msualg_1 X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge (\neg \\
& \quad v11_struct_0 X1) \wedge ((v2_msafree2 X1) \wedge (l1_msualg_1 X1)))) \Rightarrow (\forall X2. \\
& \quad ((\neg v2_struct_0 X2) \wedge (\neg v11_struct_0 X2) \wedge ((v2_msafree2 X2) \wedge \\
& \quad l1_msualg_1 X2))) \Rightarrow (((r1_tarski (k2_msafree2 X0) (k2_msafree2 \\
& \quad X1)) \wedge (X2 = k2_circcomb X0 X1)) \Rightarrow (\forall X3.((v4_msualg_1 X3 X0) \wedge \\
& \quad ((v4_msafree2 X3 X0) \wedge (l3_msualg_1 X3 X0)))) \Rightarrow (\forall X4.((v4_msualg_1 \\
& \quad X4 X1) \wedge ((v4_msafree2 X4 X1) \wedge (l3_msualg_1 X4 X1)))) \Rightarrow (\forall X5. \\
& \quad ((v4_msualg_1 X5 X2) \wedge ((v4_msafree2 X5 X2) \wedge (l3_msualg_1 X5 X2)))) \Rightarrow \\
& \quad (((r2_circcomb X0 X1 X3 X4) \wedge (X5 = k3_circcomb X0 X1 X3 X4)) \Rightarrow (\forall X6. \\
& \quad (m1_subset_1 X6 (k4_card_3 (u3_msualg_1 X2 X5)))) \Rightarrow (\forall X7. \\
& \quad (m1_subset_1 X7 (k4_card_3 (u3_msualg_1 X0 X3)))) \Rightarrow (\forall X8. \\
& \quad (m1_subset_1 X8 (k4_card_3 (u3_msualg_1 X1 X4)))) \Rightarrow (((X7 = k11_card_3 \\
& \quad (u3_msualg_1 X2 X5) X6 (u1_struct_0 X0)) \wedge (X8 = k11_card_3 (u3_msualg_1 \\
& \quad X2 X5) X6 (u1_struct_0 X1))) \Rightarrow (k6_circuit2 X2 X5 X6 = k1_funct_4 (\\
& \quad k6_circuit2 X1 X4 X8) (k6_circuit2 X0 X3 X7)))))))))
\end{aligned}$$