

t5_circcmb3

(TMc3CLEUj6QRXN1tiCVvFFiwaT5hEyxMeGG)

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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 $v4_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_msafree2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_card_3 : \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v1_circcmb3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_circcmb3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r8_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_circcmb3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_circuit2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_msafree2 \\ &X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1. ((v4_msualg_1 X1 X0) \wedge ((\\ &v4_msafree2 X1 X0) \wedge (l3_msualg_1 X1 X0))) \Rightarrow (\forall X2. (m1_subset_1 \\ &X2 (k4_card_3 (u3_msualg_1 X0 X1))) \Rightarrow (\forall X3. (m1_subset_1 \\ &X3 k5_numbers) \Rightarrow ((v1_circuit2 (k5_facirc_1 X0 X1 X2 X3) X0 X1) \Rightarrow (\\ &r8_pboole (u1_struct_0 X0) (k1_circcmb3 X0 X1 X2) (k5_facirc_1 \\ &X0 X1 X2 X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v2_msafree2 \\ &X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1. ((v4_msualg_1 X1 X0) \wedge ((\\ &v4_msafree2 X1 X0) \wedge (l3_msualg_1 X1 X0))) \Rightarrow (\forall X2. (m1_subset_1 \\ &X2 (k4_card_3 (u3_msualg_1 X0 X1))) \Rightarrow (\forall X3. (v7_ordinal1 \\ &X3) \Rightarrow (\forall X4. (v7_ordinal1 X4) \Rightarrow (((v1_circuit2 (k5_facirc_1 \\ &X0 X1 X2 X3) X0 X1) \wedge (r1_xxreal_0 X3 X4)) \Rightarrow (k5_facirc_1 X0 X1 X2 X4 = \\ &k5_facirc_1 X0 X1 X2 X3)))))) \end{aligned} \tag{2}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(\neg v11_struct_0 \\ & X0)\wedge((v2_msafree2 X0)\wedge(l1_msualg_1 X0))))\wedge(((v4_msualg_1 X1 \\ & X0)\wedge((v4_msafree2 X1 X0)\wedge(l3_msualg_1 X1 X0)))\wedge(m1_subset_1 \\ & X2 (k4_card_3 (u3_msualg_1 X0 X1))))\Rightarrow(m1_subset_1 (k2_circcmb3 \\ & X0 X1 X2) k5_numbers) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge(\neg v11_struct_0 X0)\wedge((v2_msafree2 \\ & X0)\wedge(l1_msualg_1 X0)))\Rightarrow(\forall X1.((v4_msualg_1 X1 X0)\wedge((\\ & v4_msafree2 X1 X0)\wedge(l3_msualg_1 X1 X0)))\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (k4_card_3 (u3_msualg_1 X0 X1)))\Rightarrow((v1_circcmb3 X2 X0 X1)\Rightarrow(\forall X3. \\ & (m1_subset_1 X3 k5_numbers)\Rightarrow((X3 = k2_circcmb3 X0 X1 X2)\Leftrightarrow((v1_circuit2 \\ & (k5_facirc_1 X0 X1 X2 X3) X0 X1)\wedge(\forall X4.(m1_subset_1 X4 k5_numbers)\Rightarrow \\ & (\neg(r1_xxreal_0 X3 X4)\wedge(v1_circuit2 (k5_facirc_1 X0 X1 X2 X4) X0 \\ & X1)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge(\neg v11_struct_0 X0)\wedge((v2_msafree2 \\ & X0)\wedge(l1_msualg_1 X0)))\Rightarrow(\forall X1.((v4_msualg_1 X1 X0)\wedge((\\ & v4_msafree2 X1 X0)\wedge(l3_msualg_1 X1 X0)))\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (k4_card_3 (u3_msualg_1 X0 X1)))\Rightarrow(\forall X3.(m1_subset_1 \\ & X3 k5_numbers)\Rightarrow(((v1_circcmb3 X2 X0 X1)\wedge(r1_xxreal_0 (k2_circcmb3 \\ & X0 X1 X2) X3)\Rightarrow(r8_pboole (u1_struct_0 X0) (k1_circcmb3 X0 X1 X2) \\ & (k5_facirc_1 X0 X1 X2 X3)))))) \end{aligned}$$