

t15_fscirc_1 (TM-
MUY54YmeZENoNjDKHNJnfGd3euHn7hVDD)

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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 $k4_fscirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_fscirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_margrel1 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_twoscomp : \iota$ be given. Let $k10_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v1_circcomb : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v4_msafree2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v6_circcomb : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_fscirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_margrel1 : \iota \Rightarrow \iota$ be given. Let $k3_twoscomp : \iota$ be given. Let $v3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_circcomb : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_msualg_1 : \iota \Rightarrow o$ be given. Let $v2_circcomb : \iota \Rightarrow o$ be given. Let $v3_circcomb : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (X0 \in u1_struct_0 (k4_fscirc_1 X0 X1 X2)) \wedge ((X1 \in u1_struct_0 (k4_fscirc_1 X0 X1 X2)) \wedge (X2 \in u1_struct_0 (k4_fscirc_1 X0 X1 X2))) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \forall X3. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v1_circcomb X0) \wedge (l1_msualg_1 X0)))) \wedge (((v4_msafree2 X1 X0) \wedge ((v6_circcomb X1 X0) \wedge (l3_msualg_1 X1 X0))) \wedge ((m1_subset_1 X2 (k4_card_3 (u3_msualg_1 X0 X1))) \wedge (m1_subset_1 X3 (u1_struct_0 X0)))))) \Rightarrow (k11_facirc_1 X0 X1 X2 X3 = k1_funct_1 X2 X3) \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1_xtuple_0 X0) \Rightarrow (\forall X1.(\neg v1_xtuple_0 X1) \Rightarrow \\
& (\forall X2.(\neg v1_xtuple_0 X2) \Rightarrow (\forall X3.(m1_subset_1 X3 (k4_card_3 \\
& (u3_msualg_1 (k4_fscirc_1 X0 X1 X2) (k7_fscirc_1 X0 X1 X2)))) \Rightarrow (\\
& \forall X4.(m1_subset_1 X4 k6_margrel1) \Rightarrow (\forall X5.(m1_subset_1 \\
& X5 k6_margrel1) \Rightarrow (\forall X6.(m1_subset_1 X6 k6_margrel1) \Rightarrow ((\\
& (X4 = k1_funct_1 X3 X0) \wedge ((X5 = k1_funct_1 X3 X1) \wedge (X6 = k1_funct_1 \\
& X3 X2))) \Rightarrow ((k11_facirc_1 (k4_fscirc_1 X0 X1 X2) (k7_fscirc_1 X0 \\
& X1 X2) (k5_facirc_1 (k4_fscirc_1 X0 X1 X2) (k7_fscirc_1 X0 X1 X2) \\
& X3 np_2) (k6_fscirc_1 X0 X1 X2) = k1_binarith (k1_binarith (k10_margrel1 \\
& (k9_margrel1 X4) X5) (k10_margrel1 X5 X6)) (k10_margrel1 (k9_margrel1 \\
& X4) X6)) \wedge ((k1_funct_1 (k5_facirc_1 (k4_fscirc_1 X0 X1 X2) (k7_fscirc_1 \\
& X0 X1 X2) X3 np_2) (k4_tarSKI (k10_finseq_1 X0 X1) k3_twoscomp) = \\
& k10_margrel1 (k9_margrel1 X4) X5) \wedge ((k1_funct_1 (k5_facirc_1 \\
& (k4_fscirc_1 X0 X1 X2) (k7_fscirc_1 X0 X1 X2) X3 np_2) (k4_tarSKI \\
& (k10_finseq_1 X1 X2) k2_twoscomp) = k10_margrel1 X5 X6) \wedge (k1_funct_1 \\
& (k5_facirc_1 (k4_fscirc_1 X0 X1 X2) (k7_fscirc_1 X0 X1 X2) X3 np_2) \\
& (k4_tarSKI (k10_finseq_1 X0 X2) k3_twoscomp) = k10_margrel1 (k9_margrel1 \\
& X4) X6))))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(v3_msualg_1 (k7_fscirc_1 X0 \\
& X1 X2) (k4_fscirc_1 X0 X1 X2)) \wedge ((v4_msafree2 (k7_fscirc_1 X0 X1 \\
& X2) (k4_fscirc_1 X0 X1 X2)) \wedge ((v4_circcomb (k7_fscirc_1 X0 X1 X2) \\
& (k4_fscirc_1 X0 X1 X2)) \wedge ((v6_circcomb (k7_fscirc_1 X0 X1 X2) (k4_fscirc_1 \\
& X0 X1 X2)) \wedge (l3_msualg_1 (k7_fscirc_1 X0 X1 X2) (k4_fscirc_1 X0 X1 \\
& X2))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(\neg v2_struct_0 (k4_fscirc_1 \\
& X0 X1 X2)) \wedge ((\neg v11_struct_0 (k4_fscirc_1 X0 X1 X2)) \wedge ((v1_msualg_1 \\
& (k4_fscirc_1 X0 X1 X2)) \wedge ((v1_circcomb (k4_fscirc_1 X0 X1 X2)) \wedge \\
& ((v2_circcomb (k4_fscirc_1 X0 X1 X2)) \wedge ((v3_circcomb (k4_fscirc_1 \\
& X0 X1 X2)) \wedge (l1_msualg_1 (k4_fscirc_1 X0 X1 X2))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\
& X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v1_circcomb X0) \wedge (l1_msualg_1 X0)))) \wedge \\
& (((v4_msafree2 X1 X0) \wedge ((v6_circcomb X1 X0) \wedge (l3_msualg_1 X1 X0))) \wedge \\
& ((m1_subset_1 X2 (k4_card_3 (u3_msualg_1 X0 X1))) \wedge (m1_subset_1 \\
& X3 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 (k11_facirc_1 X0 X1 X2 X3) \\
& k6_margrel1)
\end{aligned} \tag{7}$$

Theorem 1

$$\begin{aligned} & \forall X0.(\neg v1_xtuple_0 X0) \Rightarrow (\forall X1.(\neg v1_xtuple_0 X1) \Rightarrow \\ & (\forall X2.(\neg v1_xtuple_0 X2) \Rightarrow (\forall X3.(m1_subset_1 X3 (k4_card_3 \\ & (u3_msualg_1 (k4_fscirc_1 X0 X1 X2) (k7_fscirc_1 X0 X1 X2)))))) \Rightarrow (\\ & \quad \forall X4.(m1_subset_1 X4 k6_margrel1) \Rightarrow (\forall X5.(m1_subset_1 \\ & X5 k6_margrel1) \Rightarrow (((X4 = k1_funct_1 X3 X1) \wedge (X5 = k1_funct_1 X3 X2)) \Rightarrow \\ & \quad (k1_funct_1 (k5_facirc_1 (k4_fscirc_1 X0 X1 X2) (k7_fscirc_1 X0 \\ & X1 X2) X3 np_2) (k4_tarski (k10_finseq_1 X1 X2) k2_twoscomp) = k10_margrel1 \\ & \quad X4 X5)))))) \end{aligned}$$