

t14_facirc_2
(TMLHTEKz6jMGvwBJZunk9ggnXfyyZJtn1ah)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k3_msafree2 : \iota \Rightarrow \iota$ be given. Let $k3_facirc_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_facirc_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_circcomb : \iota \Rightarrow o$ be given. Let $v2_circcomb : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $k2_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_facirc_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v1_msualg_1 : \iota \Rightarrow o$ be given. Let $v3_circcomb : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v1_circcomb X0) \wedge ((v2_circcomb \\ & X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1. ((\neg v2_struct_0 X1) \wedge ((v1_circcomb \\ & X1) \wedge ((v2_circcomb X1) \wedge (l1_msualg_1 X1)))) \Rightarrow (k3_msafree2 (k2_circcomb \\ & X0 X1) = k2_xboole_0 (k3_msafree2 X0) (k3_msafree2 X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.((v1_relat_1 \\
& X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow (\forall X2.((v1_relat_1 \\
& X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 X2))) \Rightarrow ((k3_facirc_2 (k2_nat_1 \\
& X0 np_1) X1 X2 = k2_circcomb (k3_facirc_2 X0 X1 X2) (k19_facirc_1 \\
& (k1_funct_1 X1 (k2_nat_1 X0 np_1)) (k1_funct_1 X2 (k2_nat_1 X0 \\
& np_1)) (k5_facirc_2 X0 X1 X2))) \wedge ((k4_facirc_2 (k2_nat_1 X0 np_1) \\
& X1 X2 = k3_circcomb (k3_facirc_2 X0 X1 X2) (k19_facirc_1 (k1_funct_1 \\
& X1 (k2_nat_1 X0 np_1)) (k1_funct_1 X2 (k2_nat_1 X0 np_1)) (k5_facirc_2 \\
& X0 X1 X2)) (k4_facirc_2 X0 X1 X2) (k20_facirc_1 (k1_funct_1 X1 (k2_nat_1 \\
& X0 np_1)) (k1_funct_1 X2 (k2_nat_1 X0 np_1)) (k5_facirc_2 X0 X1 \\
& X2))) \wedge (k5_facirc_2 (k2_nat_1 X0 np_1) X1 X2 = k17_facirc_1 (k1_funct_1 \\
& X1 (k2_nat_1 X0 np_1)) (k1_funct_1 X2 (k2_nat_1 X0 np_1)) (k5_facirc_2 \\
& X0 X1 X2))))))
\end{aligned} \tag{2}$$

Assume the following.

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

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((v7_ordinal1 X0) \wedge (((v1_relat_1 \\
& X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \wedge ((v1_relat_1 X2) \wedge (\\
& (v1_funct_1 X2) \wedge (v1_finseq_1 X2)))))) \Rightarrow ((\neg v2_struct_0 (k3_facirc_2 \\
& X0 X1 X2)) \wedge ((\neg v11_struct_0 (k3_facirc_2 X0 X1 X2)) \wedge ((v1_msualg_1 \\
& (k3_facirc_2 X0 X1 X2)) \wedge ((v1_circcomb (k3_facirc_2 X0 X1 X2)) \wedge \\
& ((v2_circcomb (k3_facirc_2 X0 X1 X2)) \wedge ((v3_circcomb (k3_facirc_2 \\
& X0 X1 X2)) \wedge (l1_msualg_1 (k3_facirc_2 X0 X1 X2)))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(\neg v2_struct_0 (k19_facirc_1 \\
& X0 X1 X2)) \wedge ((\neg v11_struct_0 (k19_facirc_1 X0 X1 X2)) \wedge ((v1_msualg_1 \\
& (k19_facirc_1 X0 X1 X2)) \wedge ((v1_circcomb (k19_facirc_1 X0 X1 X2)) \wedge \\
& ((v2_circcomb (k19_facirc_1 X0 X1 X2)) \wedge ((v3_circcomb (k19_facirc_1 \\
& X0 X1 X2)) \wedge (l1_msualg_1 (k19_facirc_1 X0 X1 X2)))))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \tag{6}$$

Theorem 1

$$\begin{aligned}
& \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.((v1_relat_1 \\
& X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow (\forall X2.((v1_relat_1 \\
& X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 X2))) \Rightarrow (k3_msafree2 (k3_facirc_2 \\
& (k2_nat_1 X0 np_1) X1 X2) = k2_xboole_0 (k3_msafree2 (k3_facirc_2 \\
& X0 X1 X2)) (k3_msafree2 (k19_facirc_1 (k1_funct_1 X1 (k2_nat_1 \\
& X0 np_1)) (k1_funct_1 X2 (k2_nat_1 X0 np_1)) (k5_facirc_2 X0 X1 \\
& X2))))))
\end{aligned}$$