

t23_gfacirc2
(TMR4rB4rMyNxjrLizg8Kxph6e8KCHZHNiFW)

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Let $v7_ordinal1 : \iota \Rightarrow o$ 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 $k5_gfacirc2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k25_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_gfacirc2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k6_gfacirc2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k26_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k21_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

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

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((\\ & v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \Rightarrow (\forall X2.((v1_relat_1 \\ & X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 X2))) \Rightarrow ((k5_gfacirc2 (k1_nat_1 \\ & X0 np_1) X1 X2 = k2_circcomb (k5_gfacirc2 X0 X1 X2) (k25_gfacirc1 \\ & (k1_funct_1 X1 (k1_nat_1 X0 np_1)) (k1_funct_1 X2 (k1_nat_1 X0 \\ & np_1)) (k7_gfacirc2 X0 X1 X2))) \wedge ((k6_gfacirc2 (k1_nat_1 X0 np_1) \\ & X1 X2 = k3_circcomb (k5_gfacirc2 X0 X1 X2) (k25_gfacirc1 (k1_funct_1 \\ & X1 (k1_nat_1 X0 np_1)) (k1_funct_1 X2 (k1_nat_1 X0 np_1)) (k7_gfacirc2 \\ & X0 X1 X2)) (k6_gfacirc2 X0 X1 X2) (k26_gfacirc1 (k1_funct_1 X1 (k1_nat_1 \\ & X0 np_1)) (k1_funct_1 X2 (k1_nat_1 X0 np_1)) (k7_gfacirc2 X0 X1 \\ & X2))) \wedge (k7_gfacirc2 (k1_nat_1 X0 np_1) X1 X2 = k21_gfacirc1 (k1_funct_1 \\ & X1 (k1_nat_1 X0 np_1)) (k1_funct_1 X2 (k1_nat_1 X0 np_1)) (k7_gfacirc2 \\ & X0 X1 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v7_ordinal1\ X0) \wedge (((v1_relat_1 \\ & X1) \wedge ((v1_funct_1\ X1) \wedge (v1_finseq_1\ X1))) \wedge ((v1_relat_1\ X2) \wedge \\ & (v1_funct_1\ X2) \wedge (v1_finseq_1\ X2)))) \Rightarrow ((\neg v2_struct_0\ (k5_gfacirc2 \\ & X0\ X1\ X2)) \wedge ((\neg v11_struct_0\ (k5_gfacirc2\ X0\ X1\ X2)) \wedge ((v1_msualg_1 \\ & (k5_gfacirc2\ X0\ X1\ X2)) \wedge ((v1_circcomb\ (k5_gfacirc2\ X0\ X1\ X2)) \wedge \\ & ((v2_circcomb\ (k5_gfacirc2\ X0\ X1\ X2)) \wedge ((v3_circcomb\ (k5_gfacirc2 \\ & X0\ X1\ X2)) \wedge (l1_msualg_1\ (k5_gfacirc2\ X0\ X1\ X2)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (\neg v2_struct_0\ (k25_gfacirc1 \\ & X0\ X1\ X2)) \wedge ((\neg v11_struct_0\ (k25_gfacirc1\ X0\ X1\ X2)) \wedge ((v1_msualg_1 \\ & (k25_gfacirc1\ X0\ X1\ X2)) \wedge ((v1_circcomb\ (k25_gfacirc1\ X0\ X1\ X2)) \wedge \\ & ((v2_circcomb\ (k25_gfacirc1\ X0\ X1\ X2)) \wedge ((v3_circcomb\ (k25_gfacirc1 \\ & X0\ X1\ X2)) \wedge (l1_msualg_1\ (k25_gfacirc1\ X0\ X1\ X2)))))))))) \end{aligned} \quad (4)$$

Theorem 1

$$\begin{aligned} & \forall X0. (v7_ordinal1\ X0) \Rightarrow (\forall X1. ((v1_relat_1\ X1) \wedge ((\\ & v1_funct_1\ X1) \wedge (v1_finseq_1\ X1))) \Rightarrow (\forall X2. ((v1_relat_1 \\ & X2) \wedge ((v1_funct_1\ X2) \wedge (v1_finseq_1\ X2))) \Rightarrow (k3_msafree2\ (k5_gfacirc2 \\ & (k1_nat_1\ X0\ np_1)\ X1\ X2) = k2_xboole_0\ (k3_msafree2\ (k5_gfacirc2 \\ & X0\ X1\ X2))\ (k3_msafree2\ (k25_gfacirc1\ (k1_funct_1\ X1\ (k1_nat_1 \\ & X0\ np_1))\ (k1_funct_1\ X2\ (k1_nat_1\ X0\ np_1))\ (k7_gfacirc2\ X0\ X1 \\ & X2)))))) \end{aligned}$$