

t21_ftacell1 (TMMWJacVrF-
BsY3oihsXrvXf7mQCtJXXfMd3)

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Let $k3_msafree2 : \iota \Rightarrow \iota$ be given. Let $k13_ftacell1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_gfacirc1 : \iota$ be given. Let $k36_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_twoscomp : \iota$ be given. Let $k3_gfacirc1 : \iota$ be given. Let $k4_twoscomp : \iota$ be given. Let $k33_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k24_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_twoscomp : \iota$ be given. Let $k21_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k37_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k1_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k25_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1_circcomb : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_msafree2 : \iota \Rightarrow \iota$ 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. Let $k34_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k31_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_facirc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k22_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_gfacirc1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. k3_msafree2 (k37_gfacirc1 X0 \\ & X1 X2) = k2_xboole_0 (k2_xboole_0 (k2_xboole_0 (k1_tarski (k4_tarski \\ & (k10_finseq_1 X0 X1) k4_gfacirc1)) (k1_tarski (k36_gfacirc1 X0 \\ & X1 X2))) (k1_enumset1 (k4_tarski (k10_finseq_1 X0 X1) k3_twoscomp) \\ & (k4_tarski (k10_finseq_1 X1 X2) k3_gfacirc1) (k4_tarski (k10_finseq_1 \\ & X2 X0) k4_twoscomp))) (k1_tarski (k33_gfacirc1 X0 X1 X2)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. k2_enumset1 X0 X1 \\ & X2 X3 = k2_xboole_0 (k1_enumset1 X0 X1 X2) (k1_tarski X3) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.k3_msafree2 (k25_gfacirc1 X0 \\ & X1 X2) = k2_xboole_0 (k2_xboole_0 (k2_xboole_0 (k1_tarski (k4_tarski \\ & (k10_finseq_1 X0 X1) k4_gfacirc1)) (k1_tarski (k24_gfacirc1 X0 \\ & X1 X2))) (k1_enumset1 (k4_tarski (k10_finseq_1 X0 X1) k3_gfacirc1) \\ & (k4_tarski (k10_finseq_1 X1 X2) k3_twoscomp) (k4_tarski (k10_finseq_1 \\ & X2 X0) k2_twoscomp))) (k1_tarski (k21_gfacirc1 X0 X1 X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.k2_xboole_0 (k2_xboole_0 X0 \\ & X1) X2 = k2_xboole_0 X0 (k2_xboole_0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_circcomb X0) \wedge ((v2_circcomb \\ & X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v1_circcomb \\ & X1) \wedge ((v2_circcomb X1) \wedge (l1_msualg_1 X1)))) \Rightarrow (r1_circcomb X0 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.k2_tarski X0 X1 = k2_xboole_0 (k1_tarski \\ & X0) (k1_tarski X1) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2_struct_0 X1) \wedge (l1_msualg_1 X1)) \Rightarrow ((r1_circcomb X0 X1) \Rightarrow (\\ & (k3_msafree2 (k2_circcomb X0 X1) = k2_xboole_0 (k3_msafree2 X0) \\ & (k3_msafree2 X1)) \wedge (r1_tarski (k2_msafree2 (k2_circcomb X0 X1)) \\ & (k2_xboole_0 (k2_msafree2 X0) (k2_msafree2 X1)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(\neg v2_struct_0 (k37_gfacirc1 \\ & X0 X1 X2)) \wedge ((\neg v11_struct_0 (k37_gfacirc1 X0 X1 X2)) \wedge ((v1_msualg_1 \\ & (k37_gfacirc1 X0 X1 X2)) \wedge ((v1_circcomb (k37_gfacirc1 X0 X1 X2)) \wedge \\ & ((v2_circcomb (k37_gfacirc1 X0 X1 X2)) \wedge ((v3_circcomb (k37_gfacirc1 \\ & X0 X1 X2)) \wedge (l1_msualg_1 (k37_gfacirc1 X0 X1 X2)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(\neg v2_struct_0 (k25_gfacirc1 \\ & X0 X1 X2)) \wedge ((\neg v11_struct_0 (k25_gfacirc1 X0 X1 X2)) \wedge ((v1_msualg_1 \\ & (k25_gfacirc1 X0 X1 X2)) \wedge ((v1_circcomb (k25_gfacirc1 X0 X1 X2)) \wedge \\ & ((v2_circcomb (k25_gfacirc1 X0 X1 X2)) \wedge ((v3_circcomb (k25_gfacirc1 \\ & X0 X1 X2)) \wedge (l1_msualg_1 (k25_gfacirc1 X0 X1 X2)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k37_gfacirc1\ X0\ X1\ X2 = k2_circcomb\ (k34_gfacirc1\ X0\ X1\ X2)\ (k31_gfacirc1\ X0\ X1\ X2) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k36_gfacirc1\ X0\ X1\ X2 = k9_facirc.1\ X0\ X1\ X2\ k4_gfacirc1 \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k25_gfacirc1\ X0\ X1\ X2 = k2_circcomb\ (k22_gfacirc1\ X0\ X1\ X2)\ (k19_gfacirc1\ X0\ X1\ X2) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.k13_ftacell1\ X0\ X1\ X2\ X3\ X4 = k2_circcomb\ (k37_gfacirc1\ X0\ X1\ X2)\ (k25_gfacirc1\ (k36_gfacirc1\ X0\ X1\ X2)\ X4\ X3) \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.k2_xboole.0\ X0\ X1 = k2_xboole.0\ X1\ X0 \quad (14)$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.k3_msafree2\ (k13_ftacell1\ X0\ X1\ X2\ X3\ X4) = k2_xboole.0\ (k2_xboole.0\ (k2_xboole.0\ (k2_tarski\ (k4_tarski\ (k10_finseq.1\ X0\ X1)\ k4_gfacirc1)\ (k36_gfacirc1\ X0\ X1\ X2))\ (k2_enumset1\ (k4_tarski\ (k10_finseq.1\ X0\ X1)\ k3_twoscomp)\ (k4_tarski\ (k10_finseq.1\ X1\ X2)\ k3_gfacirc1)\ (k4_tarski\ (k10_finseq.1\ X2\ X0)\ k4_twoscomp)\ (k33_gfacirc1\ X0\ X1\ X2)))\ (k2_tarski\ (k4_tarski\ (k10_finseq.1\ (k36_gfacirc1\ X0\ X1\ X2)\ X4)\ k4_gfacirc1)\ (k24_gfacirc1\ (k36_gfacirc1\ X0\ X1\ X2)\ X4\ X3)))\ (k2_enumset1\ (k4_tarski\ (k10_finseq.1\ (k36_gfacirc1\ X0\ X1\ X2)\ X4)\ k3_gfacirc1)\ (k4_tarski\ (k10_finseq.1\ X4\ X3)\ k3_twoscomp)\ (k4_tarski\ (k10_finseq.1\ X3\ (k36_gfacirc1\ X0\ X1\ X2))\ k2_twoscomp)\ (k21_gfacirc1\ (k36_gfacirc1\ X0\ X1\ X2)\ X4\ X3))$$