

t37_circcomb

(TMTLCC6tgRbgPTGtRk91JBUjKjRyVtTeFgr)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v1_msualg_1 : \iota \Rightarrow o$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $u2_msualg_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1_xboole_0 X0) \wedge \\ & (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\ & X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1_relat_1 X1) \wedge ((v1_funct_1 \\ & X1) \wedge (v1_finseq_1 X1))) \Rightarrow ((\neg v2_struct_0 (k4_circcomb X0 X1 X2)) \wedge \\ & ((\neg v11_struct_0 (k4_circcomb X0 X1 X2)) \wedge (v1_msualg_1 (k4_circcomb \\ & X0 X1 X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \neg v1_xboole_0 (k1_tarski X0) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_msualg_1 X0) \Rightarrow & ((v1_funct_1 (u2_msualg_1 X0)) \wedge \\ & ((v1_funct_2 (u2_msualg_1 X0) (u4_struct_0 X0) (u1_struct_0 X0)) \wedge \\ & (m1_subset_1 (u2_msualg_1 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u4_struct_0 \\ & X0) (u1_struct_0 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_msualg_1 X0) \Rightarrow & ((v1_funct_1 (u1_msualg_1 X0)) \wedge \\ & ((v1_funct_2 (u1_msualg_1 X0) (u4_struct_0 X0) (k3_finseq_2 (\\ & u1_struct_0 X0))) \wedge (m1_subset_1 (u1_msualg_1 X0) (k1_zfmisc_1 \\ & (k2_zfmisc_1 (u4_struct_0 X0) (k3_finseq_2 (u1_struct_0 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1_relat_1 X1) \wedge & ((v1_funct_1 \\ X1) \wedge (v1_finseq_1 X1))) \Rightarrow & ((\neg v11_struct_0 (k4_circcomb X0 X1 X2)) \wedge \\ & ((v1_msualg_1 (k4_circcomb X0 X1 X2)) \wedge (l1_msualg_1 (k4_circcomb \\ & X0 X1 X2)))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.k4_tarski X0 X1 = k2_tarski (k2_tarski X0 X1) (k1_tarski X0) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1_relat_1 X1) \wedge & ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ X1))) \Rightarrow & (\forall X2.\forall X3.((\neg v11_struct_0 X3) \wedge ((v1_msualg_1 \\ X3) \wedge (l1_msualg_1 X3))) \Rightarrow & ((X3 = k4_circcomb X0 X1 X2) \Leftrightarrow ((u1_struct_0 \\ X3 = k2_xboole_0 (k10_xtuple_0 X1) (k1_tarski X2)) \wedge ((u4_struct_0 \\ X3 = k1_tarski (k4_tarski X1 X0)) \wedge ((k1_funct_1 (u1_msualg_1 X3) \\ (k4_tarski X1 X0) = X1) \wedge (k1_funct_1 (u2_msualg_1 X3) (k4_tarski \\ X1 X0) = X2)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge & ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ X0))) \Rightarrow & (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (k2_msualg_1 \\ X0 X1 = k3_funct_2 (u4_struct_0 X0) (u1_struct_0 X0) (u2_msualg_1 \\ X0) X1)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1_tarski X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (k1_msualg_1 \\ X0 X1 = k3_funct_2 (u4_struct_0 X0) (k3_finseq_2 (u1_struct_0 X0)) \\ (u1_msualg_1 X0) X1)) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.k2_tarski X0 X1 = k2_tarski X1 X0 \quad (13)$$

Theorem 1

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1_relat_1 X2) \wedge ((v1_funct_1 \\ X2) \wedge (v1_finseq_1 X2))) \Rightarrow (\forall X3.(m1_subset_1 X3 (u4_struct_0 \\ (k4_circcomb X0 X2 X1))) \Rightarrow ((X3 = k4_tarski X2 X0) \wedge ((k1_msualg_1 \\ (k4_circcomb X0 X2 X1) X3 = X2) \wedge (k2_msualg_1 (k4_circcomb X0 X2 X1) \\ X3 = X1)))) \end{aligned}$$