

t10_circcomb (TMNRb- JJx7VfYE9ymYHXnrdJMo3PXgkmGir5)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v8_struct_0 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $k2_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v1_finset_1 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l5_struct_0 : \iota \Rightarrow o$ be given. Let $v1_msualg_1 : \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $u1_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_msualg_1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v8_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_finset_1 (u1_struct_0 X0)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_finset_1 X0) \wedge (v1_finset_1 X1)) \Rightarrow (v1_finset_1 (k2_xboole_0 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0. ((v8_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (v1_finset_1 (u1_struct_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0. (l5_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (4)$$

Assume the following.

$$\forall X0. (l1_msualg_1 X0) \Rightarrow (l5_struct_0 X0) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \wedge ((\neg v2_struct_0 X1) \wedge (l1_msualg_1 X1))) \Rightarrow ((\neg v2_struct_0 (k2_circcomb X0 X1)) \wedge ((v1_msualg_1 (k2_circcomb X0 X1)) \wedge (l1_msualg_1 (k2_circcomb X0 X1)))) \quad (6)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2_struct_0 X1) \wedge (l1_msualg_1 X1)) \Rightarrow (\forall X2.((\neg v2_struct_0 \\
& X2) \wedge ((v1_msualg_1 X2) \wedge (l1_msualg_1 X2)))) \Rightarrow ((X2 = k2_circcomb \\
& X0 X1) \Leftrightarrow ((u1_struct_0 X2 = k2_xboole_0 (u1_struct_0 X0) (u1_struct_0 \\
& X1)) \wedge ((u4_struct_0 X2 = k2_xboole_0 (u4_struct_0 X0) (u4_struct_0 \\
& X1)) \wedge ((u1_msualg_1 X2 = k1_funct_4 (u1_msualg_1 X0) (u1_msualg_1 \\
& X1)) \wedge (u2_msualg_1 X2 = k1_funct_4 (u2_msualg_1 X0) (u2_msualg_1 \\
& X1)))))))))
\end{aligned} \tag{7}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (v8_struct_0 X0) \wedge (l1_msualg_1 \\
& X0)) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v8_struct_0 X1) \wedge (l1_msualg_1 \\
& X1))) \Rightarrow (v8_struct_0 (k2_circcomb X0 X1)))
\end{aligned}$$