

t21_facirc_1
(TMaf6QicJ4aaMr3gac3qqRUfNMEeJJZWZuP)

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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 $k3_msafree2 : \iota \Rightarrow \iota$ be given. Let $k2_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_circcomb : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_msafree2 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_circcomb X0) \wedge ((v2_circcomb \\ X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v1_circcomb \\ X1) \wedge ((v2_circcomb X1) \wedge (l1_msualg_1 X1)))) \Rightarrow (r1_circcomb X0 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. \\ ((\neg v2_struct_0 X1) \wedge (l1_msualg_1 X1)) \Rightarrow ((r1_circcomb X0 X1) \Rightarrow (\\ (k3_msafree2 (k2_circcomb X0 X1) = k2_xboole_0 (k3_msafree2 X0) \\ (k3_msafree2 X1)) \wedge (r1_tarski (k2_msafree2 (k2_circcomb X0 X1)) \\ (k2_xboole_0 (k2_msafree2 X0) (k2_msafree2 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (X2 = k2_xboole_0 X0 X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \vee (X3 \in X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \quad (4)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v1_circcomb X0) \wedge ((v2_circcomb \\ X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v1_circcomb \\ X1) \wedge ((v2_circcomb X1) \wedge (l1_msualg_1 X1)))) \Rightarrow (\forall X2. (X2 \in \\ k3_msafree2 X0) \Rightarrow ((X2 \in k3_msafree2 (k2_circcomb X0 X1)) \wedge (X2 \in k3_msafree2 \\ (k2_circcomb X1 X0)))))) \end{aligned}$$