

t74\_facirc\_1  
(TMJNctnK3ErYEQXV62sAZugnXPM35BPCvX5)

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Let  $v1\_xtuple\_0 : \iota \Rightarrow o$  be given. Let  $k2\_msafree2 : \iota \Rightarrow \iota$  be given. Let  $k15\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $k3\_msafree2 : \iota \Rightarrow \iota$  be given. Let  $k6\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v1\_circcomb : \iota \Rightarrow o$  be given. Let  $v2\_circcomb : \iota \Rightarrow o$  be given. Let  $v3\_circcomb : \iota \Rightarrow o$  be given. Let  $l1\_msualg\_1 : \iota \Rightarrow o$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k2\_reset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_msualg\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (X0 \in u1\_struct\_0 (k15\_facirc\_1 X0 X1 X2)) \wedge ((X1 \in u1\_struct\_0 (k15\_facirc\_1 X0 X1 X2)) \wedge (X2 \in u1\_struct\_0 (k15\_facirc\_1 X0 X1 X2))) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. v1\_relat\_1 (k3\_msafree2 (k15\_facirc\_1 X0 X1 X2)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. k6\_subset\_1 X0 X1 = k4\_xboole\_0 X0 X1 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. v1\_xtuple\_0 (k4\_tarski X0 X1) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (\neg v2\_struct\_0 (k15\_facirc\_1 X0 X1 X2)) \wedge ((\neg v11\_struct\_0 (k15\_facirc\_1 X0 X1 X2)) \wedge ((v1\_msualg\_1 (k15\_facirc\_1 X0 X1 X2)) \wedge ((v1\_circcomb (k15\_facirc\_1 X0 X1 X2)) \wedge ((v2\_circcomb (k15\_facirc\_1 X0 X1 X2)) \wedge ((v3\_circcomb (k15\_facirc\_1 X0 X1 X2)) \wedge (l1\_msualg\_1 (k15\_facirc\_1 X0 X1 X2)))))))) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(X2 = k4\_xboole\_0 X0 X1) \Leftrightarrow (\forall X3. \\ (X3 \in X2) \Leftrightarrow ((X3 \in X0) \wedge (\neg X3 \in X1))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.k4\_tarski X0 X1 = k2\_tarski (k2\_tarski X0 \\ X1) (k1\_tarski X0) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_msualg\_1 X0)) \Rightarrow (k3\_msafree2 \\ X0 = k2\_relset\_1 (u1\_struct\_0 X0) (u2\_msualg\_1 X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_msualg\_1 X0)) \Rightarrow (k2\_msafree2 \\ X0 = k6\_subset\_1 (u1\_struct\_0 X0) (k2\_relset\_1 (u1\_struct\_0 X0) \\ (u2\_msualg\_1 X0))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1\_relat\_1 X0) \Leftrightarrow (\forall X1.\neg(X1 \in X0) \wedge (\forall X2. \\ \forall X3.X1 \neq k4\_tarski X2 X3)) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarski X0 X1 = k2\_tarski X1 X0 \quad (11)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(\neg v1\_xtuple\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xtuple\_0 X1) \Rightarrow \\ (\forall X2.(\neg v1\_xtuple\_0 X2) \Rightarrow ((X0 \in k2\_msafree2 (k15\_facirc\_1 \\ X0 X1 X2)) \wedge ((X1 \in k2\_msafree2 (k15\_facirc\_1 X0 X1 X2)) \wedge (X2 \in k2\_msafree2 \\ (k15\_facirc\_1 X0 X1 X2)))))) \end{aligned}$$