

t7\_circcmb2 (TM-  
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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_facirc\_1 : \iota \Rightarrow o$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (r1\_xboole\_0 X0 X1) \Leftrightarrow (k4\_xboole\_0 X0 X1 = X0) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (r1\_xboole\_0 X0 (k4\_xboole\_0 X1 X2)) \Rightarrow (r1\_xboole\_0 X1 (k4\_xboole\_0 X0 X2)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (v1\_relat\_1 X1) \Rightarrow ((v1\_facirc\_1 X0) \vee (r1\_xboole\_0 X0 X1)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. k4\_xboole\_0 (k4\_xboole\_0 X0 X1) X2 = k4\_xboole\_0 X0 (k2\_xboole\_0 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. k2\_xboole\_0 X0 (k4\_xboole\_0 X1 X0) = k2\_xboole\_0 X0 X1 \quad (5)$$

Assume the following.

$$\forall X0. k2\_xboole\_0 X0 k1\_xboole\_0 = X0 \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. (r1\_xboole\_0 X0 X1) \Rightarrow (r1\_xboole\_0 X1 X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.(k4\_xboole\_0 X0 X1 = k1\_xboole\_0) \Leftrightarrow (r1\_tarSKI X0 X1) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0 X0 X1 = k2\_xboole\_0 X1 X0 \quad (9)$$

**Theorem 1**

$$\forall X0.(v1\_relat\_1 X0) \Rightarrow (\forall X1.\forall X2.(r1\_tarSKI X2 X1) \Rightarrow ((v1\_facirc\_1 (k4\_xboole\_0 X1 X2)) \vee (k4\_xboole\_0 X0 X1 = k4\_xboole\_0 X0 X2)))$$