

## t50\_facirc\_1

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Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k6\_margrel1 : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $u3\_msualg\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_circuit2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $k7\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. ((\neg v1\_xboole\_0 X2) \wedge (v1\_finset\_1 \\
 & X2)) \Rightarrow (\forall X3. ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (k4\_finseq\_2 \\
 & np\_2 X2) X2) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k4\_finseq\_2 \\
 & np\_2 X2) X2)))))) \Rightarrow (\forall X4. (m1\_subset\_1 X4 (k4\_card\_3 (u3\_msualg\_1 \\
 & (k5\_circcomb X3 (k10\_finseq\_1 X0 X1)) (k7\_circcomb np\_2 X2 X3 ( \\
 & k10\_finseq\_1 X0 X1)))))) \Rightarrow ((k1\_funct\_1 (k6\_circuit2 (k5\_circcomb \\
 & X3 (k10\_finseq\_1 X0 X1)) (k7\_circcomb np\_2 X2 X3 (k10\_finseq\_1 \\
 & X0 X1)) X4) (k4\_tarski (k10\_finseq\_1 X0 X1) X3) = k1\_funct\_1 X3 (k10\_finseq\_1 \\
 & (k1\_funct\_1 X4 X0) (k1\_funct\_1 X4 X1))) \wedge ((k1\_funct\_1 (k6\_circuit2 \\
 & (k5\_circcomb X3 (k10\_finseq\_1 X0 X1)) (k7\_circcomb np\_2 X2 X3 ( \\
 & k10\_finseq\_1 X0 X1)) X4) X0 = k1\_funct\_1 X4 X0) \wedge (k1\_funct\_1 (k6\_circuit2 \\
 & (k5\_circcomb X3 (k10\_finseq\_1 X0 X1)) (k7\_circcomb np\_2 X2 X3 ( \\
 & k10\_finseq\_1 X0 X1)) X4) X1 = k1\_funct\_1 X4 X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\neg v1\_xboole\_0 k6\_margrel1 \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. v1\_finset\_1 (k2\_tarski X0 X1) \tag{3}$$

Assume the following.

$$k6\_margrel1 = k2\_tarski\ k6\_numbers\ np\_1 \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2 \\ & X2\ (k4\_finseq\_2\ np\_2\ k6\_margrel1)\ k6\_margrel1)\wedge(m1\_subset\_1 \\ & X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k4\_finseq\_2\ np\_2\ k6\_margrel1) \\ & k6\_margrel1))))\Rightarrow(k6\_facirc\_1\ X0\ X1\ X2 = k7\_circcomb\ np\_2\ k6\_margrel1 \\ & X2\ (k10\_finseq\_1\ X0\ X1)) \end{aligned} \quad (5)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2 \\ & X2\ (k4\_finseq\_2\ np\_2\ k6\_margrel1)\ k6\_margrel1)\wedge(m1\_subset\_1 \\ & X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k4\_finseq\_2\ np\_2\ k6\_margrel1) \\ & k6\_margrel1))))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (k4\_card\_3\ (u3\_msualg\_1 \\ & (k5\_circcomb\ X2\ (k10\_finseq\_1\ X0\ X1))\ (k6\_facirc\_1\ X0\ X1\ X2))))\Rightarrow \\ & ((k1\_funct\_1\ (k6\_circuit2\ (k5\_circcomb\ X2\ (k10\_finseq\_1\ X0\ X1)) \\ & (k6\_facirc\_1\ X0\ X1\ X2)\ X3)\ (k4\_tarski\ (k10\_finseq\_1\ X0\ X1)\ X2) = k1\_funct\_1 \\ & X2\ (k10\_finseq\_1\ (k1\_funct\_1\ X3\ X0)\ (k1\_funct\_1\ X3\ X1)))\wedge((k1\_funct\_1 \\ & (k6\_circuit2\ (k5\_circcomb\ X2\ (k10\_finseq\_1\ X0\ X1))\ (k6\_facirc\_1 \\ & X0\ X1\ X2)\ X3)\ X0 = k1\_funct\_1\ X3\ X0)\wedge(k1\_funct\_1\ (k6\_circuit2\ (k5\_circcomb \\ & X2\ (k10\_finseq\_1\ X0\ X1))\ (k6\_facirc\_1\ X0\ X1\ X2)\ X3)\ X1 = k1\_funct\_1 \\ & X3\ X1)))) \end{aligned}$$