

# t22\_facirc\_2 (TM- FKRy6cYMkgZkUoQAXAbruzTAbWge9NSE1)

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Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_facirc\_1 : \iota$  be given. Let  $k1\_facirc\_1 : \iota$  be given. Let  $k2\_msafree2 : \iota \Rightarrow \iota$  be given. Let  $k19\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. 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  $k8\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. 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  $r1\_circcomb : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k15\_facirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v11\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_msualg\_1 : \iota \Rightarrow o$  be given. Let  $v3\_circcomb : \iota \Rightarrow o$  be given. Let  $k2\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1\_funct\_1 X3) \wedge \\ & ((v1\_funct\_2 X3 (k4\_finseq\_2 np\_2 k6\_margrel1) k6\_margrel1) \wedge \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k4\_finseq\_2 np\_2 \\ & k6\_margrel1) k6\_margrel1)))))) \Rightarrow ((X0 \neq k4\_tarski (k10\_finseq\_1 \\ & X1 X2) X3) \Rightarrow (k2\_msafree2 (k8\_facirc\_1 X1 X2 X0 X3) = k1\_enumset1 X1 \\ & X2 X0)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v1\_circcomb X0) \wedge ((v2\_circcomb \\ & X0) \wedge (l1\_msualg\_1 X0)))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v1\_circcomb \\ & X1) \wedge ((v2\_circcomb X1) \wedge (l1\_msualg\_1 X1)))) \Rightarrow (r1\_circcomb X0 X1)) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (l1\_msualg\_1 X0)) \Rightarrow (\forall X1. \\ & ((\neg v2\_struct\_0 X1) \wedge (l1\_msualg\_1 X1)) \Rightarrow (((r1\_circcomb X0 X1) \wedge \\ & (k2\_msafree2 X0 = k2\_msafree2 X1)) \Rightarrow (k2\_msafree2 (k2\_circcomb \\ & X0 X1) = k2\_msafree2 X0))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\neg(X0\neq k4\_tarski (k10\_finseq\_1 \\ & X1 X2) k3\_facirc.1)\wedge((X1\neq k4\_tarski (k10\_finseq\_1 X2 X0) k3\_facirc.1)\wedge \\ & ((X2\neq k4\_tarski (k10\_finseq\_1 X0 X1) k3\_facirc.1)\wedge(k2\_msafree2 \\ & (k15\_facirc.1 X0 X1 X2)\neq k1\_enumset1 X0 X1 X2))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v1\_funct.1 X3)\wedge \\ & ((v1\_funct.2 X3 (k4\_finseq.2 np\_2 k6\_margrel1) k6\_margrel1)\wedge \\ & (m1\_subset.1 X3 (k1\_zfmisc.1 (k2\_zfmisc.1 (k4\_finseq.2 np\_2 \\ & k6\_margrel1) k6\_margrel1))))))\Rightarrow((\neg v2\_struct.0 (k8\_facirc.1 \\ & X0 X1 X2 X3))\wedge((\neg v11\_struct.0 (k8\_facirc.1 X0 X1 X2 X3))\wedge((v1\_msualg.1 \\ & (k8\_facirc.1 X0 X1 X2 X3))\wedge((v1\_circcomb (k8\_facirc.1 X0 X1 X2 X3))\wedge \\ & ((v2\_circcomb (k8\_facirc.1 X0 X1 X2 X3))\wedge((v3\_circcomb (k8\_facirc.1 \\ & X0 X1 X2 X3))\wedge(l1\_msualg.1 (k8\_facirc.1 X0 X1 X2 X3))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & (v1\_funct.1 k1\_facirc.1)\wedge((v1\_funct.2 k1\_facirc.1 (k4\_finseq.2 \\ & np\_2 k6\_margrel1) k6\_margrel1)\wedge(m1\_subset.1 k1\_facirc.1 (k1\_zfmisc.1 \\ & (k2\_zfmisc.1 (k4\_finseq.2 np\_2 k6\_margrel1) k6\_margrel1)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(\neg v2\_struct.0 (k15\_facirc.1 \\ & X0 X1 X2))\wedge((\neg v11\_struct.0 (k15\_facirc.1 X0 X1 X2))\wedge((v1\_msualg.1 \\ & (k15\_facirc.1 X0 X1 X2))\wedge((v1\_circcomb (k15\_facirc.1 X0 X1 X2))\wedge \\ & ((v2\_circcomb (k15\_facirc.1 X0 X1 X2))\wedge((v3\_circcomb (k15\_facirc.1 \\ & X0 X1 X2))\wedge(l1\_msualg.1 (k15\_facirc.1 X0 X1 X2)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.k4\_tarski X0 X1 = k2\_tarski (k2\_tarski X0 X1) (k1\_tarski X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k19\_facirc.1 X0 X1 X2 = k2\_circcomb (k8\_facirc.1 X0 X1 X2 k1\_facirc.1) (k15\_facirc.1 X0 X1 X2) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.k2\_tarski X0 X1 = k2\_tarski X1 X0 \quad (10)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\neg(X0\neq k4\_tarski (k10\_finseq\_1 \\ & X1 X2) k3\_facirc.1)\wedge((X1\neq k4\_tarski (k10\_finseq\_1 X2 X0) k3\_facirc.1)\wedge \\ & ((X2\neq k4\_tarski (k10\_finseq\_1 X0 X1) k3\_facirc.1)\wedge((X2\neq k4\_tarski \\ & (k10\_finseq\_1 X0 X1) k1\_facirc.1)\wedge(k2\_msafree2 (k19\_facirc.1 \\ & X0 X1 X2)\neq k1\_enumset1 X0 X1 X2)))) \end{aligned}$$