

# t37\_circcmb3 (TMHpPkLd- kMYKQTRKt9HTGYi1JkP1cJSYS9G)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  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  $np\_1 : \iota$  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  $m1\_circcmb3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_circcmb3 : \iota \Rightarrow \iota$  be given. Let  $k4\_circcmb3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_msafree2 : \iota \Rightarrow \iota$  be given. Let  $k6\_circcmb3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k4\_finseq\_1 X1 = k2\_finseq\_1 np\_1) \wedge \\ & (k10\_xtuple\_0 X1 = k1\_tarski X0))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1. ((\neg v1\_xboole\_0 \\ & X1) \wedge (v1\_finset\_1 X1)) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\ & X2 (k4\_finseq\_2 X0 X1) X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k4\_finseq\_2 X0 X1) X1)))))) \Rightarrow (\forall X3. ((v1\_relat\_1 X3) \wedge ((v1\_funct\_1 \\ & X3) \wedge ((v3\_card\_1 X3 X0) \wedge (v1\_finseq\_1 X3)))))) \Rightarrow (\forall X4. (m1\_circcmb3 \\ & X4 X1) \Rightarrow ((r1\_tarski (k10\_xtuple\_0 X3) (u1\_struct\_0 X4)) \Rightarrow ((k3\_circcmb3 \\ & (k4\_circcmb3 X0 X1 X2 X3) \in k2\_msafree2 X4) \vee (k2\_msafree2 (k6\_circcmb3 \\ & X1 X4 (k4\_circcmb3 X0 X1 X2 X3)) = k2\_msafree2 X4)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski (k1\_tarski X0) X1) \Leftrightarrow (X0 \in X1) \tag{3}$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0. k9\_finseq\_1 \ X0 = k5\_finseq\_1 \ X0 \quad (5)$$

Assume the following.

$$\forall X0. v1\_finseq\_1 \ (k5\_finseq\_1 \ X0) \quad (6)$$

Assume the following.

$$\forall X0. (v1\_relat\_1 \ (k5\_finseq\_1 \ X0)) \wedge (v1\_funct\_1 \ (k5\_finseq\_1 \ X0)) \quad (7)$$

Assume the following.

$$\forall X0. v3\_card\_1 \ (k5\_finseq\_1 \ X0) \ np\_1 \quad (8)$$

**Theorem 1**

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 \ X1) \wedge (v1\_finset\_1 \ X1)) \Rightarrow \\ & (\forall X2. ((v1\_funct\_1 \ X2) \wedge ((v1\_funct\_2 \ X2 \ (k4\_finseq\_2 \ np\_1 \\ & X1) \ X1) \wedge (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k4\_finseq\_2 \\ & np\_1 \ X1) \ X1)))))) \Rightarrow (\forall X3. (m1\_circcmb3 \ X3 \ X1) \Rightarrow ((X0 \in u1\_struct\_0 \\ & X3) \Rightarrow ((k3\_circcmb3 \ (k4\_circcmb3 \ np\_1 \ X1 \ X2 \ (k9\_finseq\_1 \ X0)) \in \\ & k2\_msafree2 \ X3) \vee (k2\_msafree2 \ (k6\_circcmb3 \ X1 \ X3 \ (k4\_circcmb3 \\ & np\_1 \ X1 \ X2 \ (k9\_finseq\_1 \ X0))) = k2\_msafree2 \ X3)))))) \end{aligned}$$