

## t4\_fscirc\_2

(TMWLtHvX22siLSCTSPSFF4seUunKDrhCVai)

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Let  $k4\_tarSKI : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k1\_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_margrel1 : \iota$  be given. Let  $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k8\_margrel1 : \iota$  be given. Let  $k1\_fscirc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_fscirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_fscirc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_circcomb : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_fscirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_fscirc\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_fscirc\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k3\_finseq\_1 X1 = np\_1) \wedge (k1\_funct\_1 \\ & X1 np\_1 = X0))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\
& \quad (\forall X1.((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\
& X1)))) \Rightarrow (\forall X2.(X2 = k4\_tarski k1\_xboole\_0 (k1\_margrel1 k6\_margrel1 \\
& (k4\_finseq\_2 k6\_numbers k6\_margrel1) k8\_margrel1)) \Rightarrow ((k1\_fscirc\_2 \\
& np\_1 X0 X1 = k2\_circcomb (k5\_circcomb (k1\_margrel1 k6\_margrel1 \\
& (k4\_finseq\_2 k6\_numbers k6\_margrel1) k8\_margrel1) k1\_xboole\_0) \\
& (k8\_fscirc\_1 (k1\_funct\_1 X0 np\_1) (k1\_funct\_1 X1 np\_1) X2)) \wedge \\
& ((k2\_fscirc\_2 np\_1 X0 X1 = k3\_circcomb (k5\_circcomb (k1\_margrel1 \\
& k6\_margrel1 (k4\_finseq\_2 k6\_numbers k6\_margrel1) k8\_margrel1) \\
& k1\_xboole\_0) (k8\_fscirc\_1 (k1\_funct\_1 X0 np\_1) (k1\_funct\_1 X1 \\
& np\_1) X2) (k7\_circcomb k1\_xboole\_0 k6\_margrel1 (k1\_margrel1 \\
& k6\_margrel1 (k4\_finseq\_2 k6\_numbers k6\_margrel1) k8\_margrel1) \\
& k1\_xboole\_0) (k9\_fscirc\_1 (k1\_funct\_1 X0 np\_1) (k1\_funct\_1 X1 \\
& np\_1) X2)) \wedge (k3\_fscirc\_2 np\_1 X0 X1 = k6\_fscirc\_1 (k1\_funct\_1 \\
& X0 np\_1) (k1\_funct\_1 X1 np\_1) X2))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.k9\_finseq\_1 X0 = k5\_finseq\_1 X0 \tag{3}$$

Assume the following.

$$\forall X0.v1\_finseq\_1 (k5\_finseq\_1 X0) \tag{4}$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k5\_finseq\_1 X0)) \wedge (v1\_funct\_1 (k5\_finseq\_1 X0)) \tag{5}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.(X2 = k4\_tarski k1\_xboole\_0 ( \\
& k1\_margrel1 k6\_margrel1 (k4\_finseq\_2 k6\_numbers k6\_margrel1) \\
& k8\_margrel1)) \Rightarrow ((k1\_fscirc\_2 np\_1 (k9\_finseq\_1 X0) (k9\_finseq\_1 \\
& X1) = k2\_circcomb (k5\_circcomb (k1\_margrel1 k6\_margrel1 (k4\_finseq\_2 \\
& k6\_numbers k6\_margrel1) k8\_margrel1) k1\_xboole\_0) (k8\_fscirc\_1 \\
& X0 X1 X2)) \wedge ((k2\_fscirc\_2 np\_1 (k9\_finseq\_1 X0) (k9\_finseq\_1 X1) = \\
& k3\_circcomb (k5\_circcomb (k1\_margrel1 k6\_margrel1 (k4\_finseq\_2 \\
& k6\_numbers k6\_margrel1) k8\_margrel1) k1\_xboole\_0) (k8\_fscirc\_1 \\
& X0 X1 X2) (k7\_circcomb k1\_xboole\_0 k6\_margrel1 (k1\_margrel1 k6\_margrel1 \\
& (k4\_finseq\_2 k6\_numbers k6\_margrel1) k8\_margrel1) k1\_xboole\_0) \\
& (k9\_fscirc\_1 X0 X1 X2)) \wedge (k3\_fscirc\_2 np\_1 (k9\_finseq\_1 X0) (k9\_finseq\_1 \\
& X1) = k6\_fscirc\_1 X0 X1 X2)))
\end{aligned}$$