

# t6\_gfacirc1

(TMFwzWVhnV7vZSLsVBstEysna9xgbCX3dFr)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_margrel1 : \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_gfacirc1 : \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k14\_twoscomp : \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_gfacirc1 : \iota$  be given. Let  $k15\_twoscomp : \iota$  be given. Let  $k10\_binarith : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_binarith : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_margrel1 : \iota \Rightarrow \iota$  be given. Let  $k8\_twoscomp : \iota$  be given. Let  $k4\_twoscomp : \iota$  be given. Let  $k2\_twoscomp : \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $np\_1 : \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k6\_margrel1) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 k6\_margrel1) \Rightarrow ((k1\_funct\_1 k1\_gfacirc1 (k9\_finseq\_1 (k1\_funct\_1 \\
& k14\_twoscomp (k10\_finseq\_1 X0 X1))) = k1\_funct\_1 k15\_twoscomp \\
& (k10\_finseq\_1 X0 X1)) \wedge ((k1\_funct\_1 k1\_gfacirc1 (k9\_finseq\_1 \\
& (k1\_funct\_1 k14\_twoscomp (k10\_finseq\_1 X0 X1))) = k1\_funct\_1 k4\_gfacirc1 \\
& (k10\_finseq\_1 X0 X1)) \wedge (k1\_funct\_1 k14\_twoscomp (k10\_finseq\_1 \\
& (k1\_funct\_1 k1\_gfacirc1 (k10\_binarith k6\_margrel1 X0)) (k1\_funct\_1 \\
& k1\_gfacirc1 (k10\_binarith k6\_margrel1 X1))) = k1\_funct\_1 k14\_twoscomp \\
& (k10\_finseq\_1 X0 X1))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k6\_margrel1) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 k6\_margrel1) \Rightarrow ((k1\_funct\_1 k4\_gfacirc1 (k10\_finseq\_1 X0 X1) = \\
& k2\_binarith X0 (k9\_margrel1 X1)) \wedge ((k1\_funct\_1 k4\_gfacirc1 (k10\_finseq\_1 \\
& X0 X1) = k1\_funct\_1 k15\_twoscomp (k10\_finseq\_1 X0 X1)) \wedge ((k1\_funct\_1 \\
& k4\_gfacirc1 (k10\_finseq\_1 X0 X1) = k1\_funct\_1 k8\_twoscomp (k10\_finseq\_1 \\
& (k1\_funct\_1 k4\_twoscomp (k10\_finseq\_1 X0 X1)) (k1\_funct\_1 k2\_twoscomp \\
& (k10\_finseq\_1 X0 X1)))) \wedge ((k1\_funct\_1 k4\_gfacirc1 (k10\_finseq\_1 \\
& k6\_numbers k6\_numbers) = np\_1) \wedge ((k1\_funct\_1 k4\_gfacirc1 (k10\_finseq\_1 \\
& k6\_numbers np\_1) = k6\_numbers) \wedge ((k1\_funct\_1 k4\_gfacirc1 (k10\_finseq\_1 \\
& np\_1 k6\_numbers) = k6\_numbers) \wedge (k1\_funct\_1 k4\_gfacirc1 (k10\_finseq\_1 \\
& np\_1 np\_1) = np\_1))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k6\_margrel1) \Rightarrow (m1\_subset\_1 (k9\_margrel1 X0) k6\_margrel1) \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 k6\_margrel1) \wedge (m1\_subset\_1 X1 k6\_margrel1)) \Rightarrow (m1\_subset\_1 (k2\_binarith X0 X1) k6\_margrel1) \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k6\_margrel1) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k6\_margrel1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k6\_margrel1) \Rightarrow (k1\_funct\_1 \\ & k1\_gfacirc1 (k9\_finseq\_1 (k1\_funct\_1 k14\_twoscomp (k10\_finseq\_1 \\ & (k1\_funct\_1 k4\_gfacirc1 (k10\_finseq\_1 X0 X1)) X2))) = k1\_funct\_1 \\ & k4\_gfacirc1 (k10\_finseq\_1 (k1\_funct\_1 k4\_gfacirc1 (k10\_finseq\_1 \\ & X0 X1)) X2)))) \end{aligned}$$