

## t1\_glib\_005

(TMbeakweKAFax4s31xuddjSsAGnB9S8w3W9)

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Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v1\_glib\_000 : \iota \Rightarrow o$  be given. Let  $v1\_glib\_003 : \iota \Rightarrow o$  be given. Let  $v7\_glib\_003 : \iota \Rightarrow o$  be given. Let  $k7\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_valued\_0 : \iota \Rightarrow o$  be given. Let  $m3\_glib\_001 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_glib\_001 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r5\_glib\_005 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_abian : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $r2\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k5\_glib\_003 : \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Assume the following.

$$\forall X0.((v7\_ordinal1 X0) \wedge (\neg v1\_abian X0)) \Rightarrow (r1\_xxreal\_0 np\_1 X0) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0))))) \Rightarrow (\forall X1.(m3\_glib\_001 \\ X1 X0) \Rightarrow ((\neg(\neg v3\_glib\_001 X1 X0) \wedge (k3\_finseq\_1 X1 = np\_1)) \wedge (\neg(k3\_finseq\_1 \\ X1 \neq np\_1) \wedge (v3\_glib\_001 X1 X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\
& \quad X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge ((v1\_glib\_003 X0) \wedge \\
& \quad (v7\_glib\_003 X0)))))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 \\
& X1 (k7\_glib\_000 X0)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_partfun1 X1 (k7\_glib\_000 \\
& \quad X0)) \wedge (v4\_valued\_0 X1)))))) \Rightarrow (\forall X2.(m3\_glib\_001 X2 X0) \Rightarrow ( \\
& \quad (r5\_glib\_005 X0 X1 X2) \Leftrightarrow (\forall X3.((v7\_ordinal1 X3) \wedge (\neg v1\_abian \\
& \quad X3)) \Rightarrow ((\neg r1\_xxreal\_0 (k3\_finseq\_1 X2) X3) \Rightarrow ((\neg (r2\_glib\_000 X0 \\
& (k1\_funct\_1 X2 X3) (k1\_funct\_1 X2 (k1\_nat\_1 X3 np\_2)) (k1\_funct\_1 \\
& \quad X2 (k1\_nat\_1 X3 np\_1))) \wedge (r1\_xxreal\_0 (k1\_funct\_1 (k5\_glib\_003 \\
& X0) (k1\_funct\_1 X2 (k1\_nat\_1 X3 np\_1))) (k1\_funct\_1 X1 (k1\_funct\_1 \\
& \quad X2 (k1\_nat\_1 X3 np\_1)))))) \wedge (\neg (\neg r2\_glib\_000 X0 (k1\_funct\_1 X2 X3) \\
& (k1\_funct\_1 X2 (k1\_nat\_1 X3 np\_2)) (k1\_funct\_1 X2 (k1\_nat\_1 X3 \\
& \quad np\_1))) \wedge (r1\_xxreal\_0 (k1\_funct\_1 X1 (k1\_funct\_1 X2 (k1\_nat\_1 \\
& \quad X3 np\_1))) k6\_numbers)))))))))
\end{aligned} \tag{3}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\
& \quad X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge ((v1\_glib\_003 X0) \wedge \\
& \quad (v7\_glib\_003 X0)))))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 \\
& X1 (k7\_glib\_000 X0)) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_partfun1 X1 (k7\_glib\_000 \\
& \quad X0)) \wedge (v4\_valued\_0 X1)))))) \Rightarrow (\forall X2.(m3\_glib\_001 X2 X0) \Rightarrow ( \\
& \quad (v3\_glib\_001 X2 X0) \Rightarrow (r5\_glib\_005 X0 X1 X2)))
\end{aligned}$$