

t180\_glib\_001 (TMdM-  
nybv5hrwGiyDF5wzKxwQeyFpMGwBvVE)

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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  $r5\_glib\_000 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_glib\_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r4\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_subset\_1 : \iota \Rightarrow \iota$  be given. Let  $k11\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_glib\_001 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $k12\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $r1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $k11\_glib\_000 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\
& \quad X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.((v1\_relat\_1 \\
& \quad X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 \\
& \quad X1) \wedge (v1\_glib\_000 X1)))))) \Rightarrow (\forall X2. \forall X3. \forall X4. \\
& \quad \forall X5. \forall X6. (r5\_glib\_000 X0 X1) \Rightarrow (((r1\_glib\_000 X0 X3 \\
& \quad X4 X2) \Rightarrow (r1\_glib\_000 X1 X3 X4 X2)) \wedge (((r2\_glib\_000 X0 X3 X4 X2) \Rightarrow (r2\_glib\_000 \\
& \quad X1 X3 X4 X2)) \wedge (((r3\_glib\_000 X0 X5 X6 X2) \Rightarrow (r3\_glib\_000 X1 X5 X6 X2)) \wedge \\
& \quad ((r4\_glib\_000 X0 X5 X6 X2) \Rightarrow (r4\_glib\_000 X1 X5 X6 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge \\
& \quad ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \wedge (( \\
& \quad v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v1\_funct\_1 X1) \wedge \\
& \quad ((v1\_finset\_1 X1) \wedge (v1\_glib\_000 X1)))))) \Rightarrow ((r5\_glib\_000 X0 X1) \Rightarrow \\
& \quad (r5\_glib\_000 X1 X0))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. m1\_subset\_1 (k10\_subset\_1 X0) X0 \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & \quad X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. \forall X2. \\ & \forall X3. ((r1\_glib\_000 X0 X1 X2 X3) \Rightarrow (k2\_glib\_001 X0 X1 X2 X3 = k11\_finseq\_1 \\ & X1 X3 X2)) \wedge ((\neg r1\_glib\_000 X0 X1 X2 X3) \Rightarrow (k2\_glib\_001 X0 X1 X2 X3 = k1\_glib\_001 \\ & \quad X0 (k10\_subset\_1 (k6\_glib\_000 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & \quad X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (k6\_glib\_000 X0) \Rightarrow (k1\_glib\_001 X0 X1 = k12\_finseq\_1 (k6\_glib\_000 \\ & \quad X0) X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & \quad X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. ((v1\_relat\_1 \\ & X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 \\ & \quad X1) \wedge (v1\_glib\_000 X1)))))) \Rightarrow ((r5\_glib\_000 X0 X1) \Leftrightarrow ((k6\_glib\_000 \\ & X0 = k6\_glib\_000 X1) \wedge ((k7\_glib\_000 X0 = k7\_glib\_000 X1) \wedge ((r1\_funct\_2 \\ & \quad (k7\_glib\_000 X0) (k6\_glib\_000 X0) (k7\_glib\_000 X1) (k6\_glib\_000 \\ & \quad X1) (k10\_glib\_000 X0) (k10\_glib\_000 X1)) \wedge (r1\_funct\_2 (k7\_glib\_000 \\ & \quad X0) (k6\_glib\_000 X0) (k7\_glib\_000 X1) (k6\_glib\_000 X1) (k11\_glib\_000 \\ & \quad X0) (k11\_glib\_000 X1)))))) \end{aligned} \quad (6)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & \quad X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. ((v1\_relat\_1 \\ & X1) \wedge ((v4\_relat\_1 X1 k5\_numbers) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_finset\_1 \\ & \quad X1) \wedge (v1\_glib\_000 X1)))))) \Rightarrow (\forall X2. \forall X3. \forall X4. \\ & (r5\_glib\_000 X0 X1) \Rightarrow (k2\_glib\_001 X0 X2 X4 X3 = k2\_glib\_001 X1 X2 X4 \\ & \quad X3)) \end{aligned}$$