

188\_glib\_001 (TMaVd-  
VSm7CGRwQnsM52d6Rj9VMgeoH6smgH)

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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  $m3\_glib\_001 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_glib\_001 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_abian : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  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  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $r1\_glib\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $k7\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $k10\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $k11\_glib\_000 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. \forall X2. \\ \forall X3. (r1\_glib\_000 X0 X2 X3 X1) \Leftrightarrow ((r2\_glib\_000 X0 X2 X3 X1) \vee \\ (r2\_glib\_000 X0 X3 X2 X1))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. (m3\_glib\_001 \\ X1 X0) \Rightarrow (m2\_finseq\_1 X1 (k2\_xboole\_0 (k6\_glib\_000 X0) (k7\_glib\_000 \\ X0)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. (m2\_finseq\_1 \\ X1 (k2\_xboole\_0 (k6\_glib\_000 X0) (k7\_glib\_000 X0))) \Rightarrow ((m3\_glib\_001 \\ X1 X0) \Leftrightarrow ((\neg v1\_abian (k3\_finseq\_1 X1)) \wedge ((k1\_funct\_1 X1 np\_1 \in k6\_glib\_000 \\ X0) \wedge (\forall X2. ((\neg v1\_abian X2) \wedge (m1\_subset\_1 X2 k5\_numbers)) \Rightarrow \\ ((\neg r1\_xxreal\_0 (k3\_finseq\_1 X1) X2) \Rightarrow (r1\_glib\_000 X0 (k1\_funct\_1 \\ X1 X2) (k1\_funct\_1 X1 (k2\_nat\_1 X2 np\_2)) (k1\_funct\_1 X1 (k2\_nat\_1 \\ X2 np\_1)))))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.(m3\_glib\_001 \\ & X1 X0) \Rightarrow ((v2\_glib\_001 X1 X0) \Leftrightarrow (\forall X2.((\neg v1\_abian X2) \wedge (m1\_subset\_1 \\ & X2 k5\_numbers)) \Rightarrow ((\neg r1\_xxreal\_0 (k3\_finseq\_1 X1) X2) \Rightarrow (k1\_funct\_1 \\ & (k10\_glib\_000 X0) (k1\_funct\_1 X1 (k2\_nat\_1 X2 np\_1)) = k1\_funct\_1 \\ & X1 X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1. \forall X2. \\ & \forall X3.(r2\_glib\_000 X0 X1 X2 X3) \Leftrightarrow ((X3 \in k7\_glib\_000 X0) \wedge ((k1\_funct\_1 \\ & (k10\_glib\_000 X0) X3 = X1) \wedge (k1\_funct\_1 (k11\_glib\_000 X0) X3 = X2)))) \end{aligned} \quad (5)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0)))))) \Rightarrow (\forall X1.(m3\_glib\_001 \\ & X1 X0) \Rightarrow ((v2\_glib\_001 X1 X0) \Leftrightarrow (\forall X2.((\neg v1\_abian X2) \wedge (m1\_subset\_1 \\ & X2 k5\_numbers)) \Rightarrow ((\neg r1\_xxreal\_0 (k3\_finseq\_1 X1) X2) \Rightarrow (r2\_glib\_000 \\ & X0 (k1\_funct\_1 X1 X2) (k1\_funct\_1 X1 (k2\_nat\_1 X2 np\_2)) (k1\_funct\_1 \\ & X1 (k2\_nat\_1 X2 np\_1)))))) \end{aligned}$$