

# l40\_glib\_001

(TMMHDPC7qA7HG2RUW6DKRuN7WhTmdDVTuDn)

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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  $v1\_abian : \iota \Rightarrow o$  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  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k1\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_card\_1 : \iota \Rightarrow o$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  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  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & (\forall X1.(v7\_ordinal1 X1) \Rightarrow ((X1 \in k1\_relset\_1 k5\_numbers X0) \Leftrightarrow \\ & ((r1\_xxreal\_0 np\_1 X1) \wedge (r1\_xxreal\_0 X1 (k3\_finseq\_1 X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_abian X0) \wedge (m1\_subset\_1 X0 k5\_numbers)) \Rightarrow (\forall X1. \\ & ((\neg v1\_abian X1) \wedge (m1\_subset\_1 X1 k5\_numbers)) \Rightarrow ((\neg r1\_xxreal\_0 \\ & X1 X0) \Leftrightarrow (r1\_xxreal\_0 (k2\_nat\_1 X0 np\_2) X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow (\forall X1.(v7\_ordinal1 X1) \Rightarrow (( \\ & \neg r1\_xxreal\_0 (k1\_nat\_1 X1 np\_1) X0) \Leftrightarrow (r1\_xxreal\_0 X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.((v7\_ordinal1 X0) \wedge (\neg v1\_abian X0)) \Rightarrow (r1\_xxreal\_0 np\_1 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_2) \wedge (m2\_subset\_1 \ np\_2 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_2 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_2 \ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 \ X0) \wedge ((\neg v1\_xboole\_0 \ X1) \wedge \\ & (m1\_subset\_1 \ X1 \ (k1\_zfmisc\_1 \ X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & \quad X2 \ X0 \ X1) \Leftrightarrow (m1\_subset\_1 \ X2 \ X1)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 \ X1 \ X0) \Leftrightarrow (m1\_finseq\_1 \ X1 \ X0) \quad (8)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (9)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 \ X0) \wedge ((v1\_funct\_1 \ X0) \wedge (v1\_finseq\_1 \ X0))) \Rightarrow (k3\_finseq\_1 \ X0 = k1\_card\_1 \ X0) \quad (10)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 \ X0 \ k5\_numbers) \wedge (v7\_ordinal1 \ X1)) \Rightarrow (k2\_nat\_1 \ X0 \ X1 = k2\_xcmplx\_0 \ X0 \ X1) \quad (11)$$

Assume the following.

$$\forall X0. \forall X1. ((v7\_ordinal1 \ X0) \wedge (m1\_subset\_1 \ X1 \ k5\_numbers)) \Rightarrow (k1\_nat\_1 \ X0 \ X1 = k2\_xcmplx\_0 \ X0 \ X1) \quad (12)$$

Assume the following.

$$(\neg v1\_xboole\_0 \ k4\_ordinal1) \wedge (v3\_ordinal1 \ k4\_ordinal1) \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. ((v7\_ordinal1 \ X0) \wedge (v7\_ordinal1 \ X1)) \Rightarrow (v7\_ordinal1 \ (k2\_xcmplx\_0 \ X0 \ X1)) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1\_relat\_1 \ X0) \wedge ((v4\_relat\_1 \ X0 \ k5\_numbers) \wedge \\ & ((v1\_funct\_1 \ X0) \wedge ((v1\_finset\_1 \ X0) \wedge (v1\_glib\_000 \ X0)))))) \wedge (m3\_glib\_001 \\ & \quad X1 \ X0)) \Rightarrow ((\neg v1\_xboole\_0 \ (k1\_card\_1 \ X1)) \wedge ((v1\_card\_1 \ (k1\_card\_1 \\ & \quad X1)) \wedge (\neg v1\_abian \ (k1\_card\_1 \ X1)))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.((v1\_int\_1 X0) \wedge (\neg v1\_abian X0)) \Rightarrow (\neg v1\_abian (k2\_xcmplx\_0 X0 \ np\_2)) \quad (16)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 \ k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge (v1\_glib\_000 X0))))) \Rightarrow (\forall X1.(m3\_glib\_001 X1 X0) \Rightarrow (m2\_finseq\_1 X1 (k2\_xboole\_0 (k6\_glib\_000 X0) (k7\_glib\_000 X0)))) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0) \Rightarrow ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 X1))) \quad (18)$$

Assume the following.

$$m1\_subset\_1 \ k5\_numbers \ (k1\_zfmisc\_1 \ k1\_numbers) \quad (19)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow (m2\_subset\_1 (k3\_finseq\_1 X0) \ k1\_numbers \ k5\_numbers) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow ((r1\_xxreal\_0 X0 \ X1) \vee (r1\_xxreal\_0 X1 \ X0)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 X0 \ k5\_numbers) \wedge (v7\_ordinal1 X1)) \Rightarrow (k2\_nat\_1 X0 \ X1 = k2\_nat\_1 X1 \ X0) \quad (22)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 \ k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (23)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_xxreal\_0 X0) \quad (24)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0) \Rightarrow (v1\_int\_1 X0) \quad (25)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \quad (26)$$

**Theorem 1**

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