

## t29\_glib\_003

(TMP5tRZE4XuiTS6sHUmVW5i9iAz5eTx1uVe)

October 27, 2020

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  $v8\_glib\_003 : \iota \Rightarrow o$  be given. Let  $m3\_glib\_001 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k10\_glib\_003 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_rvsum\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k9\_glib\_003 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k18\_rvsum\_1 : \iota \Rightarrow \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v7\_glib\_003 : \iota \Rightarrow o$  be given. Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v3\_valued\_0 \\ X0) \wedge (v1\_finseq\_1 X0)))) \Rightarrow ((\forall X1.(v7\_ordinal1 X1) \Rightarrow ((X1 \in \\ k4\_finseq\_1 X0) \Rightarrow (r1\_xxreal\_0 k6\_numbers (k1\_seq\_1 X0 X1)))) \Rightarrow \\ (r1\_xxreal\_0 k6\_numbers (k16\_rvsum\_1 X0))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge ((v1\_glib\_003 X0) \wedge \\ (v8\_glib\_003 X0))))))) \Rightarrow (\forall X1.(m3\_glib\_001 X1 X0) \Rightarrow (\forall X2. \\ (m2\_subset\_1 X2 k1\_numbers k5\_numbers) \Rightarrow ((X2 \in k4\_finseq\_1 (k9\_glib\_003 \\ X0 X1)) \Rightarrow (r1\_xxreal\_0 k6\_numbers (k1\_seq\_1 (k9\_glib\_003 X0 X1) \\ X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))))\Rightarrow(\forall X2.(m2\_subset\_1 X2 X0 X1)\Leftrightarrow(m1\_subset\_1 X2 X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Leftrightarrow(m1\_finseq\_1 X1 X0) \quad (5)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (6)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (7)$$

Assume the following.

$$\forall X0.(m1\_finseq\_1 X0 k1\_numbers)\Rightarrow(k18\_rvsum\_1 X0 = k16\_rvsum\_1 X0) \quad (8)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 k5\_numbers)\wedge((v1\_funct\_1 X0)\wedge((v1\_finset\_1 X0)\wedge((v1\_glib\_000 X0)\wedge((v1\_glib\_003 X0)\wedge(v7\_glib\_003 X0))))))\wedge(m3\_glib\_001 X1 X0))\Rightarrow(m2\_finseq\_1 (k9\_glib\_003 X0 X1) k1\_numbers) \quad (11)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (12)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v1\_finseq\_1 X0)))\Rightarrow(m1\_subset\_1 (k4\_finseq\_1 X0) (k1\_zfmisc\_1 k5\_numbers)) \quad (13)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 k5\_numbers)\wedge((v1\_funct\_1 X0)\wedge((v1\_finset\_1 X0)\wedge((v1\_glib\_000 X0)\wedge((v1\_glib\_003 X0)\wedge(v7\_glib\_003 X0))))))\Rightarrow(\forall X1.(m3\_glib\_001 X1 X0)\Rightarrow(k10\_glib\_003 X0 X1 = k18\_rvsum\_1 (k9\_glib\_003 X0 X1))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow(v5\_relat\_1 X1 X0) \quad (15)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0)\wedge(v5\_relat\_1 X0 k1\_numbers))\Rightarrow((v1\_relat\_1 X0)\wedge(v3\_valued\_0 X0)) \quad (16)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(v1\_xboole\_0 X1)) \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 k5\_numbers)\wedge((v1\_funct\_1 \\ X0)\wedge((v1\_finset\_1 X0)\wedge((v1\_glib\_000 X0)\wedge((v1\_glib\_003 X0)\wedge \\ (v8\_glib\_003 X0))))))\Rightarrow((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 k5\_numbers)\wedge \\ ((v1\_funct\_1 X0)\wedge((v1\_finset\_1 X0)\wedge((v1\_glib\_000 X0)\wedge((v1\_glib\_003 \\ X0)\wedge(v7\_glib\_003 X0)))))) \end{aligned} \quad (18)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((v1\_relat\_1 X0)\wedge((v4\_relat\_1 X0 k5\_numbers)\wedge((v1\_funct\_1 \\ X0)\wedge((v1\_finset\_1 X0)\wedge((v1\_glib\_000 X0)\wedge((v1\_glib\_003 X0)\wedge \\ (v8\_glib\_003 X0))))))\Rightarrow(\forall X1.(m3\_glib\_001 X1 X0)\Rightarrow(r1\_xxreal\_0 \\ k6\_numbers (k10\_glib\_003 X0 X1))) \end{aligned}$$