

t45\_glib\_003  
(TMYjExmZZZvYfnR8skVw15K8YZei3Lxczjg)

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  $v2\_glib\_003 : \iota \Rightarrow o$  be given. Let  $k7\_glib\_000 : \iota \Rightarrow \iota$  be given. Let  $k11\_glib\_003 : \iota \Rightarrow \iota$  be given. Let  $k12\_glib\_003 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k6\_glib\_003 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_4 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k7\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 \\ & X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge (v2\_glib\_003 X0)))))) \Rightarrow \\ & (\forall X1. \forall X2. (X1 \in k7\_glib\_000 X0) \Rightarrow (k6\_glib\_003 (k12\_glib\_003 \\ & X0 X1 X2) = k1\_funct\_4 (k6\_glib\_003 X0) (k16\_funcop\_1 X1 X2))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (k9\_xtuple\_0 (k2\_funcop\_1 X0 X1) = X0) \wedge (r1\_tarski (k10\_xtuple\_0 (k2\_funcop\_1 X0 X1)) (k1\_tarski X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. k7\_funcop\_1 X0 X1 = k2\_funcop\_1 X0 X1 \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. v1\_relat\_1 (k2\_zfmisc\_1 X0 X1) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v1\_funct\_1 (k7\_funcop\_1 X0 X1)) \wedge ((v1\_funct\_2 \\ & (k7\_funcop\_1 X0 X1) X0 (k1\_tarski X1)) \wedge (m1\_subset\_1 (k7\_funcop\_1 \\ & X0 X1) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (k1\_tarski X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge (v2\_glib\_003 X0)))))) \Rightarrow ((v1\_relat\_1 (k6\_glib\_003 X0)) \wedge (v1\_funct\_1 (k6\_glib\_003 X0))) \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. (((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \wedge ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1))) \Rightarrow ((v1\_relat\_1 (k1\_funct\_4 X0 X1)) \wedge (v1\_funct\_1 (k1\_funct\_4 X0 X1))) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge (v2\_glib\_003 X0)))))) \Rightarrow ((v1\_relat\_1 (k12\_glib\_003 X0 X1 X2)) \wedge ((v4\_relat\_1 (k12\_glib\_003 X0 X1 X2) k5\_numbers) \wedge ((v1\_funct\_1 (k12\_glib\_003 X0 X1 X2)) \wedge ((v1\_finset\_1 (k12\_glib\_003 X0 X1 X2)) \wedge ((v1\_glib\_000 (k12\_glib\_003 X0 X1 X2)) \wedge (v2\_glib\_003 (k12\_glib\_003 X0 X1 X2))))))) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. k16\_funcop\_1 X0 X1 = k7\_funcop\_1 (k1\_tarski X0) X1 \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. k2\_funcop\_1 X0 X1 = k2\_zfmisc\_1 X0 (k1\_tarski X1) \quad (10)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge (v2\_glib\_003 X0)))))) \Rightarrow ((k11\_glib\_003 X0 = k9\_xtuple\_0 (k6\_glib\_003 X0)) \quad (11)$$

Assume the following.

$$\forall X0. ((v1\_relat\_1 X0) \wedge (v1\_funct\_1 X0)) \Rightarrow (\forall X1. ((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow (\forall X2. ((v1\_relat\_1 X2) \wedge (v1\_funct\_1 X2)) \Rightarrow ((X2 = k1\_funct\_4 X0 X1) \Leftrightarrow ((k9\_xtuple\_0 X2 = k2\_xboole\_0 (k9\_xtuple\_0 X0) (k9\_xtuple\_0 X1)) \wedge (\forall X3. (X3 \in k2\_xboole\_0 (k9\_xtuple\_0 X0) (k9\_xtuple\_0 X1)) \Rightarrow ((X3 \in k9\_xtuple\_0 X1) \Rightarrow (k1\_funct\_1 X2 X3 = k1\_funct\_1 X1 X3)) \wedge ((\neg X3 \in k9\_xtuple\_0 X1) \Rightarrow (k1\_funct\_1 X2 X3 = k1\_funct\_1 X0 X3))))))) \quad (12)$$

**Theorem 1**

$$\forall X0. ((v1\_relat\_1 X0) \wedge ((v4\_relat\_1 X0 k5\_numbers) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finset\_1 X0) \wedge ((v1\_glib\_000 X0) \wedge (v2\_glib\_003 X0)))))) \Rightarrow (\forall X1. \forall X2. (X1 \in k7\_glib\_000 X0) \Rightarrow (k11\_glib\_003 (k12\_glib\_003 X0 X1 X2) = k2\_xboole\_0 (k11\_glib\_003 X0) (k1\_tarski X1)))$$