

l43_glib_001 (TMdvq-
tUXXpGkv56XVYBzqHTfwFhCxMvvgMSU)

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 $r1_glib_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k11_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $np_2 : \iota$ be given. Let $m3_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_subset_1 : \iota \Rightarrow \iota$ be given. Let $k6_glib_000 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1_relat_1 X3) \wedge \\ & ((v1_funct_1 X3) \wedge (v1_finseq_1 X3))) \Rightarrow ((X3 = k11_finseq_1 X0 X1 \\ & X2) \Leftrightarrow ((k3_finseq_1 X3 = np_3) \wedge ((k1_funct_1 X3 np_1 = X0) \wedge ((k1_funct_1 \\ & X3 np_2 = X1) \wedge (k1_funct_1 X3 np_3 = X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (v1_relat_1 (k11_finseq_1 X0 X1 X2)) \wedge (v1_funct_1 (k11_finseq_1 X0 X1 X2)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. v1_finseq_1 (k11_finseq_1 X0 X1 X2) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1_relat_1 X0) \wedge \\ & ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 \\ & X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (m3_glib_001 (k2_glib_001 X0 X1 X2 X3) \\ & X0) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\ X1 X0) \Rightarrow (k4_glib_001 X0 X1 = k1_funct_1 X1 (k3_finseq_1 X1))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 \\ X1 X0) \Rightarrow (k3_glib_001 X0 X1 = k1_funct_1 X1 np_1)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.\forall X2. \\ \forall X3.((r1_glib_000 X0 X1 X2 X3) \Rightarrow (k2_glib_001 X0 X1 X2 X3 = k11_finseq_1 \\ X1 X3 X2)) \wedge ((\neg r1_glib_000 X0 X1 X2 X3) \Rightarrow (k2_glib_001 X0 X1 X2 X3 = k1_glib_001 \\ X0 (k10_subset_1 (k6_glib_000 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.\forall X2. \\ \forall X3.(m3_glib_001 X3 X0) \Rightarrow ((r1_glib_001 X0 X1 X2 X3) \Leftrightarrow ((k3_glib_001 \\ X0 X3 = X1) \wedge (k4_glib_001 X0 X3 = X2)))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 \\ X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.\forall X2. \\ \forall X3.(r1_glib_000 X0 X1 X3 X2) \Rightarrow ((k3_glib_001 X0 (k2_glib_001 \\ X0 X1 X3 X2) = X1) \wedge ((k4_glib_001 X0 (k2_glib_001 X0 X1 X3 X2) = X3) \wedge \\ (r1_glib_001 X0 X1 X3 (k2_glib_001 X0 X1 X3 X2)))))) \end{aligned}$$