

l109_glib_001 (TM-
RHX977tqTKzEKWPx9RPvcrUKavtbbAmpg)

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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 $m4_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k15_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k14_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_glib_001 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_glib_000 : \iota \Rightarrow \iota$ be given. Let $k12_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k3_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $r1_glib_001 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m2_finseq_1 X1 X0) \Rightarrow (\forall X2. (m2_finseq_1 \\ & X2 X0) \Rightarrow (\forall X3. (m2_finseq_1 X3 X0) \Rightarrow (\forall X4. (m1_subset_1 \\ & X4 (k1_zfmisc_1 X1)) \Rightarrow (\forall X5. (m1_subset_1 X5 (k1_zfmisc_1 \\ & X1)) \Rightarrow (\forall X6. (m1_subset_1 X6 (k1_zfmisc_1 X2)) \Rightarrow (((k15_finseq_1 \\ & X4 = X2) \wedge ((k15_finseq_1 X6 = X3) \wedge (X5 = k5_relat_1 X4 (k10_xtuple_0 \\ & (k2_partfun1 k5_numbers k5_numbers (k14_finseq_1 (k1_relset_1 \\ & k5_numbers X4)) (k1_relset_1 k5_numbers X6)))))) \Rightarrow (k15_finseq_1 \\ & X5 = X3)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m2_finseq_1 X2 X0) \Rightarrow (\forall X3. \\ & (m1_subset_1 X3 (k1_zfmisc_1 X2)) \Rightarrow (m1_subset_1 (k5_relat_1 X3 \\ & X1) (k1_zfmisc_1 X2))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge \\ & ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \wedge (m3_glib_001 \\ & X1 X0) \Rightarrow (\forall X2. (m4_glib_001 X2 X0 X1) \Rightarrow (m3_glib_001 X2 X0)) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m2_glib_001 X1 X0) \Rightarrow (m2_finseq_1 X1 (k7_glib_000 X0))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \wedge (m3_glib_001 X1 X0) \Rightarrow (m2_glib_001 (k12_glib_001 X0 X1) X0) \quad (5)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 X1 X0) \Rightarrow (k4_glib_001 X0 X1 = k1_funct_1 X1 (k3_finseq_1 X1))) \quad (6)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 X1 X0) \Rightarrow (k3_glib_001 X0 X1 = k1_funct_1 X1 np_1)) \quad (7)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 X1 X0) \Rightarrow (\forall X2.(m3_glib_001 X2 X0) \Rightarrow ((m4_glib_001 X2 X0 X1) \Leftrightarrow ((r1_glib_001 X0 (k3_glib_001 X0 X1) (k4_glib_001 X0 X1) X2) \wedge (\exists X3.(m1_subset_1 X3 (k1_zfmisc_1 (k12_glib_001 X0 X1))) \wedge (k12_glib_001 X0 X2 = k15_finseq_1 X3)))))) \quad (8)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1. \forall X2. \forall X3.(m3_glib_001 X3 X0) \Rightarrow ((r1_glib_001 X0 X1 X2 X3) \Leftrightarrow ((k3_glib_001 X0 X3 = X1) \wedge (k4_glib_001 X0 X3 = X2)))) \quad (9)$$

Theorem 1

$$\forall X0.((v1_relat_1 X0) \wedge ((v4_relat_1 X0 k5_numbers) \wedge ((v1_funct_1 X0) \wedge ((v1_finset_1 X0) \wedge (v1_glib_000 X0)))))) \Rightarrow (\forall X1.(m3_glib_001 X1 X0) \Rightarrow (\forall X2.(m4_glib_001 X2 X0 X1) \Rightarrow (\forall X3.(m4_glib_001 X3 X0 X2) \Rightarrow (m4_glib_001 X3 X0 X1))))$$