

t138_finseq_3 (TMUieQCWaPHDotH- hQqUHceku26Uw9HJ7bRE)

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Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k5_funct_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_finseq_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v3_card_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $np_3 : \iota$ be given. Let $np_2 : \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_funct_5 : \iota \Rightarrow \iota$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k2_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5_numbers : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge ((\\ v1_funct_1 X1) \wedge ((v3_card_1 X1 X0) \wedge (v1_finseq_1 X1)))) \Rightarrow (k4_finseq_1 \\ X1 = k2_finseq_1 X0)) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((v1_relat_1 X3) \wedge \\ ((v1_funct_1 X3) \wedge (v1_finseq_1 X3))) \Rightarrow ((X3 = k11_finseq_1 X0 X1 \\ X2) \Leftrightarrow ((k3_finseq_1 X3 = np_3) \wedge ((k1_funct_1 X3 np_1 = X0) \wedge ((k1_funct_1 \\ X3 np_2 = X1) \wedge (k1_funct_1 X3 np_3 = X2)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((v1_relat_1 X2) \wedge ((v1_funct_1 \\ X2) \wedge (v1_finseq_1 X2))) \Rightarrow ((X2 = k10_finseq_1 X0 X1) \Leftrightarrow ((k3_finseq_1 \\ X2 = np_2) \wedge ((k1_funct_1 X2 np_1 = X0) \wedge (k1_funct_1 X2 np_2 = X1)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1_relat_1 X2)\wedge(v1_funct_1 \\ & X2))\Rightarrow(\forall X3.((v1_relat_1 X3)\wedge(v1_funct_1 X3))\Rightarrow(((X0 \in k9_xtuple_0 \\ & X2)\wedge((X3 = k1_funct_1 X2 X0)\wedge(X1 \in k9_xtuple_0 X3)))\Rightarrow((k4_tarski \\ & X0 X1 \in k9_xtuple_0 (k2_funct_5 X2))\wedge((k1_binop_1 (k2_funct_5 \\ & X2) X0 X1 = k1_funct_1 X3 X1)\wedge(k1_funct_1 X3 X1 \in k10_xtuple_0 (k2_funct_5 \\ & X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$(k2_finseq_1 np_1 = k1_tarski np_1)\wedge(k2_finseq_1 np_2 = k2_tarski np_1 np_2) \quad (5)$$

Assume the following.

$$k2_finseq_1 np_3 = k1_enumset1 np_1 np_2 np_3 \quad (6)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_3)\wedge(m2_subset_1 np_3 k1_numbers k5_numbers))\wedge \\ & ((m1_subset_1 np_3 k5_numbers)\wedge(m1_subset_1 np_3 k1_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0 np_2)\wedge(m2_subset_1 np_2 k1_numbers k5_numbers))\wedge \\ & ((m1_subset_1 np_2 k5_numbers)\wedge(m1_subset_1 np_2 k1_numbers)) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.k9_finseq_1 X0 = k5_finseq_1 X0 \quad (9)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (10)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0)))\Rightarrow (k4_finseq_1 X0 = k9_xtuple_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(v1_relat_1 (k11_finseq_1 X0 X1 X2))\wedge(v1_funct_1 (k11_finseq_1 X0 X1 X2)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(v1_relat_1 (k10_finseq_1 X0 X1))\wedge(v1_funct_1 (k10_finseq_1 X0 X1)) \quad (13)$$

Assume the following.

$$\forall X0.(v1_relat_1 (k5_finseq_1 X0)) \wedge (v1_funct_1 (k5_finseq_1 X0)) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.v3_card_1 (k11_finseq_1 X0 X1 X2) \quad np_3 \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.v3_card_1 (k10_finseq_1 X0 X1) \quad np_2 \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.v1_finseq_1 (k11_finseq_1 X0 X1 X2) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.v1_finseq_1 (k10_finseq_1 X0 X1) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow ((X1 = k9_finseq_1 X0) \Leftrightarrow ((k9_xtuple_0 X1 = k2_finseq_1 np_1) \wedge (k1_funct_1 X1 np_1 = X0))) \quad (19)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.\forall X2. k5_funct_6 X0 X1 X2 = k1_binop_1 (k2_funct_5 X0) X1 X2) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(X2 = k2_tarski X0 X1) \Leftrightarrow (\forall X3. (X3 \in X2) \Leftrightarrow ((X3 = X0) \vee (X3 = X1))) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.(X1 = k1_tarski X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (X2 = X0)) \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(X3 = k1_enumset1 X0 X1 X2) \Leftrightarrow (\forall X4.(X4 \in X3) \Leftrightarrow (\neg(X4 \neq X0) \wedge ((X4 \neq X1) \wedge (X4 \neq X2)))) \quad (23)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (24)$$

Theorem 1

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge (v1_funct_1 X1)) \Rightarrow (\forall X2. \\ & ((v1_relat_1 X2) \wedge (v1_funct_1 X2)) \Rightarrow (\forall X3. ((v1_relat_1 \\ & X3) \wedge (v1_funct_1 X3)) \Rightarrow ((X0 \in k9_xtuple_0 X1) \Rightarrow ((k5_funct_6 (k9_finseq_1 \\ & X1) np_1 X0 = k1_funct_1 X1 X0) \wedge ((k5_funct_6 (k10_finseq_1 X1 X2) \\ & np_1 X0 = k1_funct_1 X1 X0) \wedge (k5_funct_6 (k11_finseq_1 X1 X2 X3) \\ & np_1 X0 = k1_funct_1 X1 X0)))))) \end{aligned}$$