

t69_finseq_4
(TMQcfF8W16pVKQF8o7jYAitDazktj3Wr3L7)

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Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k7_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_1 : \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k7_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v5_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 \\ & X1))) \Rightarrow (\forall X2. ((v1_relat_1 X2) \wedge ((v1_funct_1 X2) \wedge (v1_finseq_1 \\ & X2))) \Rightarrow (\neg (X0 \in k4_finseq_1 X1) \wedge (\forall X3. (v7_ordinal1 X3) \Rightarrow (\\ & \neg (X3 = X0) \wedge (k2_nat_1 (k3_finseq_1 X2) X3 \in k4_finseq_1 (k7_finseq_1 \\ & X2 X1)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \tag{2}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1_finseq_1 X1 X0) \wedge (m1_finseq_1 X2 X0)) \Rightarrow (k8_finseq_1 X0 X1 X2 = k7_finseq_1 X1 X2) \tag{3}$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (k4_finseq_1 X0 = k9_xtuple_0 X0) \tag{4}$$

Assume the following.

$$\forall X0. \forall X1. (m1_finseq_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge ((v1_funct_1 X1) \wedge (v1_finseq_1 X1))) \tag{5}$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((m1_finseq_1 X1 X0) \wedge (m1_finseq_1 X2 X0)) \Rightarrow (m2_finseq_1 (k8_finseq_1 X0 X1 X2) X0) \tag{6}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 \\ X0)))\wedge((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 X1))))\Rightarrow \\ ((v1_relat_1 (k7_finseq_1 X0 X1))\wedge((v1_funct_1 (k7_finseq_1 \\ X0 X1))\wedge(v1_finseq_1 (k7_finseq_1 X0 X1)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0)))\Rightarrow \\ (\forall X1.((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 \\ X1))))\Rightarrow(\forall X2.((v1_relat_1 X2)\wedge((v1_funct_1 X2)\wedge(v1_finseq_1 \\ X2))))\Rightarrow((X2 = k7_finseq_1 X0 X1)\Leftrightarrow((k4_finseq_1 X2 = k2_finseq_1 \\ (k2_nat_1 (k3_finseq_1 X0) (k3_finseq_1 X1))))\wedge((\forall X3.(\\ v7_ordinal1 X3)\Rightarrow((X3 \in k4_finseq_1 X0)\Rightarrow(k1_funct_1 X2 X3 = k1_funct_1 \\ X0 X3))))\wedge(\forall X3.(v7_ordinal1 X3)\Rightarrow((X3 \in k4_finseq_1 X1)\Rightarrow \\ (k1_funct_1 X2 (k2_nat_1 (k3_finseq_1 X0) X3) = k1_funct_1 X1 X3)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1_relat_1 X1)\wedge((v5_relat_1 X1 X0)\wedge(\\ v1_funct_1 X1)))\Rightarrow(\forall X2.(X2 \in k9_xtuple_0 X1)\Rightarrow(k7_partfun1 \\ X0 X1 X2 = k1_funct_1 X1 X2)) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0)\Rightarrow(v5_relat_1 X1 X0) \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0.(v7_ordinal1 X0)\Rightarrow(\forall X1.(\neg v1_xboole_0 X1)\Rightarrow(\\ \forall X2.(m2_finseq_1 X2 X1)\Rightarrow(\forall X3.(m2_finseq_1 X3 X1)\Rightarrow \\ ((X0 \in k4_finseq_1 X3)\Rightarrow(k7_partfun1 X1 (k8_finseq_1 X1 X2 X3) (k2_nat_1 \\ (k3_finseq_1 X2) X0) = k7_partfun1 X1 X3 X0)))))) \end{aligned}$$