

t72_seq_4 (TMUSjcYH-
mDTB46H4oB3xiE1ANGPdRfP3hze)

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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 $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_numbers : \iota$ be given. Let $k14_seq_4 : \iota \Rightarrow \iota$ be given. Let $k18_seq_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_seq_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15_seq_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k45_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k30_valued_1 : \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & (m2_finseq_2 X1 k2_numbers (k14_seq_4 X0)) \Rightarrow (\forall X2.(m2_finseq_2 \\ & X2 k2_numbers (k14_seq_4 X0)) \Rightarrow (k18_seq_4 X0 (k19_seq_4 X0 X1 X2) = \\ & k19_seq_4 X0 X2 X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & (m2_finseq_2 X1 k2_numbers (k14_seq_4 X0)) \Rightarrow (\forall X2.(m2_finseq_2 \\ & X2 k2_numbers (k14_seq_4 X0)) \Rightarrow (k19_seq_4 X0 X1 (k18_seq_4 X0 X2) = \\ & k15_seq_4 X0 X1 X2))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_finseq_2 X1 X0) \Rightarrow (\forall X2.(m2_finseq_2 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \tag{4}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1_subset_1 X0 k5_numbers)\wedge \\ & ((m1_subset_1 X1 (k14_seq_4 X0))\wedge(m1_subset_1 X2 (k14_seq_4 X0))))\Rightarrow \\ & (k19_seq_4 X0 X1 X2 = k45_valued_1 X1 X2) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1_subset_1 X0 k5_numbers)\wedge(m1_subset_1 \\ & X1 (k14_seq_4 X0)))\Rightarrow(k18_seq_4 X0 X1 = k30_valued_1 X1) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1_subset_1 X0 k5_numbers)\wedge(m1_subset_1 \\ & X1 (k14_seq_4 X0)))\Rightarrow(k18_seq_4 X0 (k18_seq_4 X0 X1) = X1) \end{aligned} \quad (8)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (9)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1_subset_1 X0 k5_numbers)\wedge(m1_subset_1 \\ & X1 (k14_seq_4 X0)))\Rightarrow(m2_finseq_2 (k18_seq_4 X0 X1) k2_numbers \\ & (k14_seq_4 X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers)\Rightarrow(m1_finseq_2 (k14_seq_4 \\ & X0) k2_numbers) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((m1_subset_1 X0 k5_numbers)\wedge \\ & ((m1_subset_1 X1 (k14_seq_4 X0))\wedge(m1_subset_1 X2 (k14_seq_4 X0))))\Rightarrow \\ & (k15_seq_4 X0 X1 X2 = k15_seq_4 X0 X2 X1) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xboole_0 X0)\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ & X0))\Rightarrow(v1_xboole_0 X1)) \end{aligned} \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers)\Rightarrow(\forall X1. \\ & (m2_finseq_2 X1 k2_numbers (k14_seq_4 X0))\Rightarrow(\forall X2.(m2_finseq_2 \\ & X2 k2_numbers (k14_seq_4 X0))\Rightarrow(k18_seq_4 X0 (k19_seq_4 X0 X1 X2) = \\ & k15_seq_4 X0 (k18_seq_4 X0 X1) X2))) \end{aligned}$$