

t9_midsp_3
(TMKY7bzYnRSY3T96sYYKdEubUvFgTdy3B3Z)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_midsp_1 : \iota \Rightarrow o$ be given. Let $l1_midsp_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $m1_midsp_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v3_card_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1_xboole_0 X0) \wedge ((X0 \neq X1) \wedge (v1_xboole_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1. (m1_subset_1 X1 k5_numbers) \Rightarrow ((m1_midsp_3 X0 X1) \Leftrightarrow (X0 \in k2_finseq_1 (k2_nat_1 X1 np_1)))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. \neg(X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(\neg v1_xboole_0\ X1) \Rightarrow (\\ & \quad \forall X2.((v3_card_1\ X2\ X0) \wedge (m2_finseq_1\ X2\ X1)) \Rightarrow (\forall X3. \\ & \quad ((v3_card_1\ X3\ X0) \wedge (m2_finseq_1\ X3\ X1)) \Rightarrow ((\forall X4.(v7_ordinal1 \\ & \quad X4) \Rightarrow ((X4 \in k2_finseq_1\ X0) \Rightarrow (k1_funct_1\ X2\ X4 = k1_funct_1\ X3\ X4)) \Rightarrow \\ & \quad (X2 = X3)))))) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0\ np_1) \wedge (m2_subset_1\ np_1\ k1_numbers\ k5_numbers)) \wedge \\ & ((m1_subset_1\ np_1\ k5_numbers) \wedge (m1_subset_1\ np_1\ k1_numbers)) \end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0\ X0) \wedge ((\neg v1_xboole_0\ X1) \wedge \\ & (m1_subset_1\ X1\ (k1_zfmisc_1\ X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ & \quad X2\ X0\ X1) \Leftrightarrow (m1_subset_1\ X2\ X1)) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_finseq_2\ X1\ X0) \Rightarrow (\forall X2.(m2_finseq_2 \\ & \quad X2\ X0\ X1) \Leftrightarrow (m1_subset_1\ X2\ X1)) \end{aligned} \tag{9}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{10}$$

Assume the following.

$$(\neg v1_xboole_0\ k4_ordinal1) \wedge (v3_ordinal1\ k4_ordinal1) \tag{11}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_finseq_2\ X1\ X0) \Rightarrow (\forall X2.(m2_finseq_2 \\ & \quad X2\ X0\ X1) \Rightarrow (m2_finseq_1\ X2\ X0)) \end{aligned} \tag{12}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m2_finseq_1\ X1\ X0) \Rightarrow ((v1_funct_1\ X1) \wedge (\\ & (v1_finseq_1\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers \\ & \quad X0)))))) \end{aligned} \tag{13}$$

Assume the following.

$$m1_subset_1\ k5_numbers\ (k1_zfmisc_1\ k1_numbers) \tag{14}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v7_ordinal1\ X0) \Rightarrow (m1_finseq_2\ (k4_finseq_2 \\ & \quad X0\ X1)\ X1) \end{aligned} \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1 X0 k5_numbers)\wedge(v7_ordinal1 X1))\Rightarrow(m2_subset_1 (k2_nat_1 X0 X1) k1_numbers k5_numbers) \quad (16)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0)\Rightarrow(m1_subset_1 (k2_finseq_1 X0) (k1_zfmisc_1 k5_numbers)) \quad (17)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1)\Rightarrow(v7_ordinal1 X0) \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.(v1_xboole_0 X0)\Rightarrow(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X1 X0)))\Rightarrow(v1_xboole_0 X2)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(v7_ordinal1 X1))\Rightarrow(\forall X2.(m1_subset_1 X2 (k4_finseq_2 X1 X0))\Rightarrow(v3_card_1 X2 X1)) \quad (20)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers)\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge((v2_midsp_1 X1)\wedge(l1_midsp_3 X1 (k2_nat_1 X0 np_2))))\Rightarrow(\\ & \quad \forall X2.(m2_finseq_2 X2 (u1_struct_0 X1) (k4_finseq_2 (k2_nat_1 X0 np_1) (u1_struct_0 X1)))\Rightarrow(\forall X3.(m2_finseq_2 X3 (u1_struct_0 X1) (k4_finseq_2 (k2_nat_1 X0 np_1) (u1_struct_0 X1)))\Rightarrow((\forall X4. \\ & \quad (m1_midsp_3 X4 X0)\Rightarrow(k1_funct_1 X2 X4 = k1_funct_1 X3 X4))\Rightarrow(X2 = X3)))))) \end{aligned}$$