

t14_midsp_3 (TMKvsVN- tJY4G3H2CFTe1Eu1p37Gh2t9LxD)

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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 $v4_midsp_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_midsp_2 : \iota \Rightarrow \iota \Rightarrow o$ 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 $u1_midsp_2 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5_midsp_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $m1_finseq_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l1_midsp_1 : \iota \Rightarrow o$ be given. Let $l2_algstr_0 : \iota \Rightarrow o$ be given. Let $l2_struct_0 : \iota \Rightarrow o$ be given. Let $l1_algstr_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k5_numbers) \Rightarrow ((m1_midsp_3 X0 X1) \Leftrightarrow (X0 \in k2_finseq_1 (k2_nat_1 \\ X1 np_1)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1\ X0) \Rightarrow (\forall X1.(\neg v1_xboole_0\ X1) \Rightarrow (\\ & \quad \forall X2.((v3_card_1\ X2\ X0) \wedge (m2_finseq_1\ X2\ X1)) \Rightarrow (\forall X3. \\ & \quad ((v3_card_1\ X3\ X0) \wedge (m2_finseq_1\ X3\ X1)) \Rightarrow ((\forall X4.(v7_ordinal1 \\ & \quad X4) \Rightarrow ((X4 \in k2_finseq_1\ X0) \Rightarrow (k1_funct_1\ X2\ X4 = k1_funct_1\ X3\ X4))) \Rightarrow \\ & \quad (X2 = X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0\ np_2) \wedge (m2_subset_1\ np_2\ k1_numbers\ k5_numbers)) \wedge \\ & ((m1_subset_1\ np_2\ k5_numbers) \wedge (m1_subset_1\ np_2\ k1_numbers)) \end{aligned} \quad (6)$$

Assume the following.

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

Assume the following.

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

Assume the following.

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

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1\ X0 \\ & \quad k5_numbers) \wedge ((\neg v1_xboole_0\ X1) \wedge ((m1_subset_1\ X2\ (k4_finseq_2 \\ & \quad (k2_nat_1\ X0\ np_1)\ X1)) \wedge (m1_midsp_3\ X3\ X0)))) \Rightarrow (k5_midsp_3\ X0 \\ & \quad X1\ X2\ X3 = k1_funct_1\ X2\ X3) \end{aligned} \quad (11)$$

Assume the following.

$$(\neg v1_xboole_0\ k4_ordinal1) \wedge (v3_ordinal1\ k4_ordinal1) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0) \wedge (l1_struct_0\ X0)) \Rightarrow (\neg v1_xboole_0 \\ & \quad (u1_struct_0\ X0)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l1_midsp_1 X0)) \wedge \\ & (l1_midsp_2 X1 X0)) \Rightarrow ((\neg v2_struct_0 (u1_midsp_2 X0 X1)) \wedge (l2_algstr_0 \\ & (u1_midsp_2 X0 X1))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1_finseq_2 X1 X0) \Rightarrow (\forall X2. (m2_finseq_2 \\ & X2 X0 X1) \Rightarrow (m2_finseq_1 X2 X0)) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0. (l2_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (16)$$

Assume the following.

$$\forall X0. (l2_algstr_0 X0) \Rightarrow ((l2_struct_0 X0) \wedge (l1_algstr_0 X0)) \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1. (l1_midsp_3 \\ & X1 X0) \Rightarrow (l1_midsp_1 X1)) \end{aligned} \quad (18)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v7_ordinal1 X0) \Rightarrow (m1_finseq_2 (k4_finseq_2 \\ & X0 X1) X1) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 \\ & X1)) \Rightarrow (m2_subset_1 (k2_nat_1 X0 X1) k1_numbers k5_numbers) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7_ordinal1 X0) \Rightarrow (m1_subset_1 (k2_finseq_1 X0) (k1_zfmisc_1 \\ & k5_numbers)) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 \\ & X1)) \Rightarrow (k2_nat_1 X0 X1 = k2_nat_1 X1 X0) \end{aligned} \quad (23)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (v7_ordinal1 X1)) \Rightarrow \\ & (\forall X2. (m1_subset_1 X2 (k4_finseq_2 X1 X0)) \Rightarrow (v3_card_1 X2 \\ & X1)) \end{aligned} \quad (25)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.((\neg v2_struct_0 \\ & X1) \wedge ((v2_midsp_1 X1) \wedge (l1_midsp_3 X1 (k2_nat_1 X0 np_2)))) \Rightarrow (\\ & \quad \forall X2.((v4_midsp_2 X2 X1) \wedge (l1_midsp_2 X2 X1)) \Rightarrow (\forall X3. \\ & \quad (m2_finseq_2 X3 (u1_struct_0 (u1_midsp_2 X1 X2)) (k4_finseq_2 \\ & \quad (k2_nat_1 X0 np_1) (u1_struct_0 (u1_midsp_2 X1 X2)))) \Rightarrow (\forall X4. \\ & \quad (m2_finseq_2 X4 (u1_struct_0 (u1_midsp_2 X1 X2)) (k4_finseq_2 \\ & \quad (k2_nat_1 X0 np_1) (u1_struct_0 (u1_midsp_2 X1 X2)))) \Rightarrow ((\forall X5. \\ & \quad (m1_midsp_3 X5 X0) \Rightarrow (k5_midsp_3 X0 (u1_struct_0 (u1_midsp_2 X1 \\ & X2)) X3 X5 = k5_midsp_3 X0 (u1_struct_0 (u1_midsp_2 X1 X2)) X4 X5)) \Rightarrow \\ & \quad (X3 = X4)))))) \end{aligned}$$