

t18_midsp_3

(TMHyob65DWJFNQn1zhJT5P2pAKKqP4eiXrP)

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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 $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ 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 $u1_midsp_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_midsp_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_midsp_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_midsp_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_midsp_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_midsp_1 : \iota \Rightarrow o$ be given. Let $k1_algstr_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_midsp_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1_xboole_0 : \iota \Rightarrow o$ 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 $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_midsp_1 X0) \wedge (l1_midsp_1 \\ & X0))) \Rightarrow (\forall X1. ((v4_midsp_2 X1 X0) \wedge (l1_midsp_2 X1 X0)) \Rightarrow ((\\ & \forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 \\ & X3 (u1_struct_0 (u1_midsp_2 X0 X1))) \Rightarrow (\exists X4. (m1_subset_1 \\ & X4 (u1_struct_0 X0)) \wedge (k9_midsp_2 X0 X1 X2 X4 = X3)))) \wedge ((\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\ & ((k9_midsp_2 X0 X1 X2 X3 = k9_midsp_2 X0 X1 X2 X4) \Rightarrow (X3 = X4)))))) \wedge (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\ & (k1_algstr_0 (u1_midsp_2 X0 X1) (k9_midsp_2 X0 X1 X2 X3) (k9_midsp_2 \\ & X0 X1 X3 X4) = k9_midsp_2 X0 X1 X2 X4)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.((\neg v2_struct_0 \\ & X1) \wedge ((v2_midsp_1 X1) \wedge (l1_midsp_3 X1 (k2_nat_1 X0 np_2)))) \Rightarrow (\\ & \forall X2.(m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow (\forall X3.(m2_finseq_2 \\ & X3 (u1_struct_0 X1) (k4_finseq_2 (k2_nat_1 X0 np_1) (u1_struct_0 \\ & X1))) \Rightarrow (\forall X4.((v4_midsp_2 X4 X1) \wedge (l1_midsp_2 X4 X1)) \Rightarrow (k7_midsp_3 \\ & X0 X1 X4 X2 (k8_midsp_3 X0 X1 X4 X2 X3) = X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & ((v2_xreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & ((v2_xreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ & ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_finseq_2 X1 X0) \Rightarrow (\forall X2.(m2_finseq_2 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (6)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (7)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k5_numbers) \Rightarrow (\forall X1.(l1_midsp_3 \\ & X1 X0) \Rightarrow (l1_midsp_1 X1)) \end{aligned} \quad (9)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((m1_subset_1 X0 \\ & k5_numbers) \wedge (((\neg v2_struct_0 X1) \wedge ((v2_midsp_1 X1) \wedge (l1_midsp_3 \\ & X1 (k2_nat_1 X0 np_2)))) \wedge ((m1_subset_1 X2 (u1_struct_0 X1) \wedge \\ & (m1_subset_1 X3 (k4_finseq_2 (k2_nat_1 X0 np_1) (u1_struct_0 \\ & X1)))))) \Rightarrow (m1_subset_1 (k4_midsp_3 X0 X1 X2 X3) (u1_struct_0 X1)) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(v7_ordinal1\ X0)\Rightarrow(m1_finseq_2\ (k4_finseq_2\ X0\ X1)\ X1) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((m1_subset_1\ X0\ k5_numbers)\wedge(v7_ordinal1\ X1))\Rightarrow(m2_subset_1\ (k2_nat_1\ X0\ X1)\ k1_numbers\ k5_numbers) \quad (13)$$

Assume the following.

$$\begin{aligned} &\forall X0.(m1_subset_1\ X0\ k5_numbers)\Rightarrow(\forall X1.((\neg v2_struct_0\ X1)\wedge((v2_midsp_1\ X1)\wedge(l1_midsp_3\ X1\ (k2_nat_1\ X0\ np_2))))\Rightarrow(\\ &\quad \forall X2.((v4_midsp_2\ X2\ X1)\wedge(l1_midsp_2\ X2\ X1))\Rightarrow(\forall X3. \\ &\quad (m1_subset_1\ X3\ (u1_struct_0\ X1))\Rightarrow(\forall X4.(m2_finseq_2\ X4\ (u1_struct_0\ (u1_midsp_2\ X1\ X2))\ (k4_finseq_2\ (k2_nat_1\ X0\ np_1)\ (u1_struct_0\ (u1_midsp_2\ X1\ X2))))\Rightarrow(k9_midsp_3\ X0\ X1\ X2\ X3\ X4 = k9_midsp_2\ X1\ X2\ X3\ (k4_midsp_3\ X0\ X1\ X3\ (k7_midsp_3\ X0\ X1\ X2\ X3\ X4)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k4_ordinal1)\Rightarrow(v7_ordinal1\ X0) \quad (15)$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0)\Rightarrow(\forall X1.(m1_subset_1\ X1\ (k1_zfmisc_1\ X0))\Rightarrow(v1_xboole_0\ X1)) \quad (16)$$

Theorem 1

$$\begin{aligned} &\forall X0.(m1_subset_1\ X0\ k5_numbers)\Rightarrow(\forall X1.((\neg v2_struct_0\ X1)\wedge((v2_midsp_1\ X1)\wedge(l1_midsp_3\ X1\ (k2_nat_1\ X0\ np_2))))\Rightarrow(\\ &\quad \forall X2.(m1_subset_1\ X2\ (u1_struct_0\ X1))\Rightarrow(\forall X3.(m1_subset_1\ X3\ (u1_struct_0\ X1))\Rightarrow(\forall X4.(m2_finseq_2\ X4\ (u1_struct_0\ X1)\ (k4_finseq_2\ (k2_nat_1\ X0\ np_1)\ (u1_struct_0\ X1)))\Rightarrow(\forall X5. \\ &\quad ((v4_midsp_2\ X5\ X1)\wedge(l1_midsp_2\ X5\ X1))\Rightarrow(\forall X6.(m1_subset_1\ X6\ (u1_struct_0\ (u1_midsp_2\ X1\ X5)))\Rightarrow(\forall X7.(m2_finseq_2\ X7\ (u1_struct_0\ (u1_midsp_2\ X1\ X5))\ (k4_finseq_2\ (k2_nat_1\ X0\ np_1)\ (u1_struct_0\ (u1_midsp_2\ X1\ X5))))\Rightarrow(((k8_midsp_3\ X0\ X1\ X5\ X2\ X4 = X7)\wedge(k9_midsp_2\ X1\ X5\ X2\ X3 = X6))\Rightarrow(((k4_midsp_3\ X0\ X1\ X2\ X4 = X3)\Leftrightarrow(k9_midsp_3\ X0\ X1\ X5\ X2\ X7 = X6)))))) \end{aligned}$$