

t4_scmfsa_4
(TMSxZ1fEsNmserjs5Q6j9f5gB1Qp4RNiDqc)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_compos_1 : \iota \Rightarrow \iota$ be given. Let $k1_scmfsa_2 : \iota$ be given. Let $k2_compos_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_enumset1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_6 : \iota$ be given. Let $np_7 : \iota$ be given. Let $np_8 : \iota$ be given. Let $k5_compos_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k2_compos_1 : \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_compos_0 : \iota \Rightarrow o$ be given. Let $v2_compos_0 : \iota \Rightarrow o$ be given. Let $v3_compos_0 : \iota \Rightarrow o$ be given. Let $v4_compos_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_12 : \iota$ be given. Let $v1_ami_2 : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $m1_scmfsa_2 : \iota \Rightarrow o$ be given. Let $k17_scmfsa_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_11 : \iota$ be given. Let $k16_scmfsa_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_10 : \iota$ be given. Let $k15_scmfsa_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_9 : \iota$ be given. Let $k14_scmfsa_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $np_2 : \iota$ be given. Let $np_3 : \iota$ be given. Let $np_4 : \iota$ be given. Let $np_5 : \iota$ be given. Let $k10_scmfsa_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_scmfsa_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_scmfsa_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_scmfsa_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_scmfsa_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k4_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v5_compos_0 : \iota \Rightarrow o$ be given. Let $k6_compos_0 : \iota \Rightarrow \iota$ be given. Let $l1_compos_1 : \iota \Rightarrow o$ be given. Let $l1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_memstr_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_extpro_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow ((k2_compos_0 (u1_compos_1 k1_scmfsa_2) X0 = k6_numbers) \Rightarrow (X0 = k2_compos_1 k1_scmfsa_2)) \quad (1)$$

Assume the following.

$$\forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v1_compos_0 X1) \wedge ((v2_compos_0 X1) \wedge (v3_compos_0 X1)))) \Rightarrow (\forall X2.(m1_subset_1 X2 X1) \Rightarrow ((v4_compos_0 X2 X1) \Rightarrow (k5_compos_0 X1 X2 X0 = X2)))) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow & (\neg(k2_compos_0 \\ (u1_compos_1 k1_scmfsa_2) X0 = np_12) \wedge (\forall X1.((v1_ami_2 \\ X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))) \Rightarrow (\forall X2. \\ (m1_scmfsa_2 X2) \Rightarrow (X0 \neq k17_scmfsa_2 X1 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow & (\neg(k2_compos_0 \\ (u1_compos_1 k1_scmfsa_2) X0 = np_11) \wedge (\forall X1.((v1_ami_2 \\ X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))) \Rightarrow (\forall X2. \\ (m1_scmfsa_2 X2) \Rightarrow (X0 \neq k16_scmfsa_2 X1 X2)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow & (\neg(k2_compos_0 \\ (u1_compos_1 k1_scmfsa_2) X0 = np_10) \wedge (\forall X1.((v1_ami_2 \\ X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))) \Rightarrow (\forall X2. \\ ((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 k1_scmfsa_2))) \Rightarrow \\ (\forall X3.(m1_scmfsa_2 X3) \Rightarrow (X0 \neq k15_scmfsa_2 X2 X1 X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow & (\neg(k2_compos_0 \\ (u1_compos_1 k1_scmfsa_2) X0 = np_9) \wedge (\forall X1.((v1_ami_2 \\ X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))) \Rightarrow (\forall X2. \\ ((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 k1_scmfsa_2))) \Rightarrow \\ (\forall X3.(m1_scmfsa_2 X3) \Rightarrow (X0 \neq k14_scmfsa_2 X2 X1 X3)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 X0) \Rightarrow & (\neg(r1_xxreal_0 X0 np_12) \wedge ((X0 \neq \\ k6_numbers) \wedge ((X0 \neq np_1) \wedge ((X0 \neq np_2) \wedge ((X0 \neq np_3) \wedge ((X0 \neq np_4) \wedge \\ ((X0 \neq np_5) \wedge ((X0 \neq np_6) \wedge ((X0 \neq np_7) \wedge ((X0 \neq np_8) \wedge ((X0 \neq np_9) \wedge \\ ((X0 \neq np_10) \wedge ((X0 \neq np_11) \wedge (X0 \neq np_12)))))))))))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow & (\neg(k2_compos_0 \\ (u1_compos_1 k1_scmfsa_2) X0 = np_5) \wedge (\forall X1.((v1_ami_2 \\ X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))) \Rightarrow (\forall X2. \\ ((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 k1_scmfsa_2))) \Rightarrow \\ (X0 \neq k10_scmfsa_2 X1 X2)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow & (\neg(k2_compos_0 \\ (u1_compos_1 k1_scmfsa_2) X0 = np_4) \wedge (\forall X1.((v1_ami_2 \\ X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))) \Rightarrow (\forall X2. \\ ((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 k1_scmfsa_2))) \Rightarrow \\ (X0 \neq k9_scmfsa_2 X1 X2)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow & (\neg(k2_compos_0 \\ & (u1_compos_1 k1_scmfsa_2) X0 = np_3) \wedge (\forall X1.((v1_ami_2 \\ & X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2)))) \Rightarrow (\forall X2. \\ & ((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 k1_scmfsa_2))) \Rightarrow \\ & (X0 \neq k8_scmfsa_2 X1 X2)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow & (\neg(k2_compos_0 \\ & (u1_compos_1 k1_scmfsa_2) X0 = np_2) \wedge (\forall X1.((v1_ami_2 \\ & X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2)))) \Rightarrow (\forall X2. \\ & ((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 k1_scmfsa_2))) \Rightarrow \\ & (X0 \neq k7_scmfsa_2 X1 X2)))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow & (\neg(k2_compos_0 \\ & (u1_compos_1 k1_scmfsa_2) X0 = np_1) \wedge (\forall X1.((v1_ami_2 \\ & X1) \wedge (m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2)))) \Rightarrow (\forall X2. \\ & ((v1_ami_2 X2) \wedge (m1_subset_1 X2 (u1_struct_0 k1_scmfsa_2))) \Rightarrow \\ & (X0 \neq k6_scmfsa_2 X1 X2)))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 (u1_compos_1 k1_scmfsa_2)) \Rightarrow (r1_xreal_0 (k2_compos_0 (u1_compos_1 k1_scmfsa_2) X0) np_12) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (14)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (15)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v1_xboole_0 X0) \wedge (v1_compos_0 X0)) \wedge \\ (m1_subset_1 X1 X0)) \Rightarrow (k2_compos_0 X0 X1 = k4_xtuple_0 X1) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((v1_ami_2 X0) \wedge (m1_subset_1 X0 (u1_struct_0 \\ k1_scmfsa_2))) \wedge (m1_scmfsa_2 X1)) \Rightarrow (v4_compos_0 (k17_scmfsa_2 \\ X0 X1) (u1_compos_1 k1_scmfsa_2)) \end{aligned} \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_ami_2 X0)\wedge(m1_subset_1 X0 (u1_struct_0 k1_scmfsa_2)))\wedge(m1_scmfsa_2 X1))\Rightarrow(v4_compos_0 (k16_scmfsa_2 X0 X1) (u1_compos_1 k1_scmfsa_2)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1_ami_2 X0)\wedge(m1_subset_1 X0 (u1_struct_0 k1_scmfsa_2)))\wedge(((v1_ami_2 X1)\wedge(m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2)))\wedge(m1_scmfsa_2 X2)))\Rightarrow(v4_compos_0 (k15_scmfsa_2 X1 X0 X2) (u1_compos_1 k1_scmfsa_2)) \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v1_xboole_0 X0)\wedge(v1_compos_0 X0))\wedge(m1_subset_1 X1 X0))\Rightarrow(v7_ordinal1 (k4_xtuple_0 X1)) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1_ami_2 X0)\wedge(m1_subset_1 X0 (u1_struct_0 k1_scmfsa_2)))\wedge(((v1_ami_2 X1)\wedge(m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2)))\wedge(m1_scmfsa_2 X2)))\Rightarrow(v4_compos_0 (k14_scmfsa_2 X1 X0 X2) (u1_compos_1 k1_scmfsa_2)) \quad (22)$$

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1)\wedge(v3_ordinal1 k4_ordinal1) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_ami_2 X0)\wedge(m1_subset_1 X0 (u1_struct_0 k1_scmfsa_2)))\wedge(((v1_ami_2 X1)\wedge(m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))))\Rightarrow(v4_compos_0 (k10_scmfsa_2 X0 X1) (u1_compos_1 k1_scmfsa_2)) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_ami_2 X0)\wedge(m1_subset_1 X0 (u1_struct_0 k1_scmfsa_2)))\wedge(((v1_ami_2 X1)\wedge(m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))))\Rightarrow(v4_compos_0 (k9_scmfsa_2 X0 X1) (u1_compos_1 k1_scmfsa_2)) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_ami_2 X0)\wedge(m1_subset_1 X0 (u1_struct_0 k1_scmfsa_2)))\wedge(((v1_ami_2 X1)\wedge(m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))))\Rightarrow(v4_compos_0 (k8_scmfsa_2 X0 X1) (u1_compos_1 k1_scmfsa_2)) \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_ami_2 X0)\wedge(m1_subset_1 X0 (u1_struct_0 k1_scmfsa_2)))\wedge((v1_ami_2 X1)\wedge(m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))))\Rightarrow(v4_compos_0 (k7_scmfsa_2 X0 X1) (u1_compos_1 k1_scmfsa_2)) \quad (27)$$

Assume the following.

$$\forall X0.((v1_compos_0 X0)\wedge(v5_compos_0 X0))\Rightarrow(v4_compos_0 (k6_compos_0 X0) X0) \quad (28)$$

Assume the following.

$$\forall X0.\forall X1.(((v1_ami_2 X0)\wedge(m1_subset_1 X0 (u1_struct_0 k1_scmfsa_2)))\wedge((v1_ami_2 X1)\wedge(m1_subset_1 X1 (u1_struct_0 k1_scmfsa_2))))\Rightarrow(v4_compos_0 (k6_scmfsa_2 X0 X1) (u1_compos_1 k1_scmfsa_2)) \quad (29)$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \quad (30)$$

Assume the following.

$$\forall X0.(l1_compos_1 X0)\Rightarrow((v1_compos_0 (u1_compos_1 X0))\wedge((v2_compos_0 (u1_compos_1 X0))\wedge((v3_compos_0 (u1_compos_1 X0))\wedge(v5_compos_0 (u1_compos_1 X0)))))) \quad (31)$$

Assume the following.

$$\forall X0.\forall X1.(l1_extpro_1 X1 X0)\Rightarrow((l1_memstr_0 X1 X0)\wedge(l1_compos_1 X1)) \quad (32)$$

Assume the following.

$$m1_subset_1 k5_numbers (k1_zfmisc_1 k1_numbers) \quad (33)$$

Assume the following.

$$(v1_extpro_1 k1_scmfsa_2 np_3)\wedge(l1_extpro_1 k1_scmfsa_2 np_3) \quad (34)$$

Assume the following.

$$\forall X0.k4_xtuple_0 X0 = k1_xtuple_0 (k1_xtuple_0 X0) \quad (35)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(X3 = k1_enumset1 X0 X1 X2)\Leftrightarrow(\forall X4.(X4 \in X3)\Leftrightarrow(\neg(X4 \neq X0)\wedge((X4 \neq X1)\wedge(X4 \neq X2)))) \quad (36)$$

Assume the following.

$$\forall X0.(l1_compos_1 X0) \Rightarrow (k2_compos_1 X0 = k6_compos_0 (u1_compos_1 X0)) \quad (37)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k4_ordinal1) \Rightarrow (v7_ordinal1 X0) \quad (38)$$

Assume the following.

$$\forall X0.(v5_compos_0 X0) \Rightarrow (\neg v1_xboole_0 X0) \quad (39)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_compos_1 k1_scmfsa_2)) \Rightarrow ((\neg k2_compos_0 (\\ & u1_compos_1 k1_scmfsa_2) X1 \in k1_enumset1 np_6 np_7 np_8) \Rightarrow (\\ & k5_compos_0 (u1_compos_1 k1_scmfsa_2) X1 X0 = X1))) \end{aligned}$$