

t13_msuhom_1 (TMHor- BQwzy4X35bytPWA8W5ZQtPRhXto4Kq)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_unialg_1 : \iota \Rightarrow o$ be given. Let $v3_unialg_1 : \iota \Rightarrow o$ be given. Let $v4_unialg_1 : \iota \Rightarrow o$ be given. Let $l1_unialg_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_msualg_1 : \iota \Rightarrow \iota$ be given. Let $m5_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_msualg_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_unialg_2 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_unialg_1 : \iota \Rightarrow \iota$ be given. Let $m4_margrel1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_finseq_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_finseq_1 : \iota \Rightarrow o$ be given. Let $k4_finseq_1 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k1_unialg_1 : \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $l5_struct_0 : \iota \Rightarrow o$ be given. Let $k4_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $v1_msualg_1 : \iota \Rightarrow o$ be given. Let $v5_msualg_1 : \iota \Rightarrow o$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $u1_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k1_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_numbers : \iota$ be given. Let $k7_finseq_2 : \iota \Rightarrow \iota$ be given. Let $u2_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k1_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u4_struct_0 (k6_msualg_1 X0))) \Rightarrow (k5_msualg_1 (k6_msualg_1 X0) X1 (k9_msualg_1 X0) = k1_funct_1 (u1_unialg_1 X0) X1)) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge(m4_margrel1 X1 X0))\Rightarrow \\ (\forall X2.(m5_margrel1 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.(m2_finseq_1 X1 X0)\Leftrightarrow(m1_finseq_1 X1 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0)\wedge((v1_funct_1 X0)\wedge(v1_finseq_1 X0)))\Rightarrow \\ (k4_finseq_1 X0 = k9_xtuple_0 X0) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v2_unialg_1 X0)\wedge((v3_unialg_1 \\ X0)\wedge((v4_unialg_1 X0)\wedge(l1_unialg_1 X0))))))\Rightarrow(k4_finseq_1 (k1_unialg_1 \\ X0) = k4_finseq_1 (u1_unialg_1 X0)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v11_struct_0 X0)\wedge(l5_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u4_struct_0 X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_unialg_1 X0)\Rightarrow(m2_finseq_1 (u1_unialg_1 X0) (k4_partfun1 \\ (k3_finseq_2 (u1_struct_0 X0)) (u1_struct_0 X0))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0)\Rightarrow((v1_relat_1 X1)\wedge((v1_funct_1 X1)\wedge(v1_finseq_1 X1))) \quad (11)$$

Assume the following.

$$\forall X0.(l1_unialg_1 X0)\Rightarrow(l1_struct_0 X0) \quad (12)$$

Assume the following.

$$\forall X0.(l1_msualg_1 X0)\Rightarrow(l5_struct_0 X0) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v2_unialg_1 X0)\wedge((v3_unialg_1 \\ X0)\wedge((v4_unialg_1 X0)\wedge(l1_unialg_1 X0))))))\Rightarrow((v7_struct_0 (\\ k6_msualg_1 X0))\wedge((\neg v11_struct_0 (k6_msualg_1 X0))\wedge((v1_msualg_1 \\ (k6_msualg_1 X0))\wedge((v5_msualg_1 (k6_msualg_1 X0))\wedge(l1_msualg_1 \\ (k6_msualg_1 X0)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (m4_margrel1 (k1_unialg_2 X0) (u1_struct_0 X0)) \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.((v7_struct_0 X1) \wedge ((\neg v11_struct_0 X1) \wedge ((v1_msualg_1 X1) \wedge ((v5_msualg_1 X1) \wedge (l1_msualg_1 X1)))))) \Rightarrow ((X1 = k6_msualg_1 X0) \Leftrightarrow ((u1_struct_0 X1 = k1_tarski k6_numbers) \wedge ((u4_struct_0 X1 = k4_finseq_1 (k1_unialg_1 X0)) \wedge ((u1_msualg_1 X1 = k1_partfun1 k5_numbers k5_numbers k5_numbers (k3_finseq_2 (k1_tarski k6_numbers)) (k1_unialg_1 X0) (k7_finseq_2 k6_numbers)) \wedge (u2_msualg_1 X1 = k1_margrel1 k5_numbers (k4_finseq_1 (k1_unialg_1 X0) k6_numbers))))))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.(X1 = k10_xtuple_0 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.(X3 \in k9_xtuple_0 X0) \wedge (X2 = k1_funct_1 X0 X3)))) \quad (17)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (k1_unialg_2 X0 = k10_xtuple_0 (u1_unialg_1 X0)) \quad (18)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 (k6_msualg_1 X0))) \Rightarrow (m5_margrel1 (k5_msualg_1 (k6_msualg_1 X0) X1 (k9_msualg_1 X0)) (u1_struct_0 X0) (k1_unialg_2 X0)))$$