

l18_msuhom_1

(TMFzn3ijN2AxRZT4rhwd3hZb25qoVPSCwzk)

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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 $r1_unialg_2 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k1_msuhom_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v1_msualg_1 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $u1_unialg_1 : \iota \Rightarrow \iota$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k6_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_msualg_1 : \iota \Rightarrow \iota$ be given. Let $g3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $v13_struct_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $v5_msualg_1 : \iota \Rightarrow o$ 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 $k8_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k7_msualg_1 : \iota \Rightarrow \iota$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ 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 $k1_margrel1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u4_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let

$u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v1_msualg_1 X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1.((v3_msualg_1 X1 X0) \wedge ((v4_msualg_1 X1 X0) \wedge (l3_msualg_1 X1 X0)))) \Rightarrow (X1 = k1_msuhom_1 X0 X0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1_subset_1 X0 X1) \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_unialg_1 X1) \wedge ((v3_unialg_1 X1) \wedge ((v4_unialg_1 X1) \wedge (l1_unialg_1 X1)))))) \Rightarrow ((r1_unialg_2 X0 X1) \Rightarrow (k6_msualg_1 X0 = k6_msualg_1 X1))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge (m4_margrel1 X1 X0)) \Rightarrow (\forall X2. (m5_margrel1 X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. (m2_finseq_1 X1 X0) \Leftrightarrow (m1_finseq_1 X1 X0) \quad (6)$$

Assume the following.

$$\forall X0. ((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v1_finseq_1 X0))) \Rightarrow (k4_finseq_1 X0 = k9_xtuple_0 X0) \quad (7)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (k4_finseq_1 (k1_unialg_1 X0) = k4_finseq_1 (u1_unialg_1 X0)) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \wedge (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 X0)))))) \wedge (m2_pboole X2 (u4_struct_0 X0) (k3_relat_1 (u1_msualg_1 X0) (k6_finseq_2 (u1_struct_0 X0) X1)) (k3_relat_1 (u2_msualg_1 X0) X1)))) \Rightarrow (\forall X3. \forall X4. \forall X5. (g3_msualg_1 X0 X1 X2 = g3_msualg_1 X3 X4 X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5)))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0))))) \Rightarrow ((v3_msualg_1 (k9_msualg_1 X0) (k6_msualg_1 X0)) \wedge (v4_msualg_1 (k9_msualg_1 X0) (k6_msualg_1 X0))) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u1_struct_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0))))) \Rightarrow ((v7_struct_0 (k6_msualg_1 X0)) \wedge ((\neg v11_struct_0 (k6_msualg_1 X0)) \wedge ((v13_struct_0 (k6_msualg_1 X0) np_1) \wedge ((v1_msualg_1 (k6_msualg_1 X0)) \wedge (v5_msualg_1 (k6_msualg_1 X0)))))) \quad (12)$$

Assume the following.

$$\forall X0.((\neg v11_struct_0 X0) \wedge (l5_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 (u4_struct_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l1_unialg_1 X0) \Rightarrow (m2_finseq_1 (u1_unialg_1 X0) (k4_partfun1 (k3_finseq_2 (u1_struct_0 X0) (u1_struct_0 X0))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(m1_finseq_1 X1 X0) \Rightarrow ((v1_relat_1 X1) \wedge (v1_funct_1 X1) \wedge (v1_finseq_1 X1)) \quad (15)$$

Assume the following.

$$\forall X0.(l5_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (16)$$

Assume the following.

$$\forall X0.(l1_unialg_1 X0) \Rightarrow (l1_struct_0 X0) \quad (17)$$

Assume the following.

$$\forall X0.(l1_msualg_1 X0) \Rightarrow (l5_struct_0 X0) \quad (18)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0))))) \Rightarrow ((v3_msualg_1 (k9_msualg_1 X0) (k6_msualg_1 X0)) \wedge (l3_msualg_1 (k9_msualg_1 X0) (k6_msualg_1 X0))) \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (m2_pboole (k8_msualg_1 \\ X0) (u4_struct_0 (k6_msualg_1 X0)) (k3_relat_1 (u1_msualg_1 (\\ k6_msualg_1 X0)) (k6_finseq_2 (u1_struct_0 (k6_msualg_1 X0)) \\ (k7_msualg_1 X0))) (k3_relat_1 (u2_msualg_1 (k6_msualg_1 X0)) \\ (k7_msualg_1 X0)))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v1_relat_1 (k7_msualg_1 \\ X0)) \wedge ((v2_relat_1 (k7_msualg_1 X0)) \wedge ((v4_relat_1 (k7_msualg_1 \\ X0) (u1_struct_0 (k6_msualg_1 X0))) \wedge ((v1_funct_1 (k7_msualg_1 \\ X0)) \wedge (v1_partfun1 (k7_msualg_1 X0) (u1_struct_0 (k6_msualg_1 \\ X0)))))))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v7_struct_0 (\\ k6_msualg_1 X0)) \wedge ((\neg v11_struct_0 (k6_msualg_1 X0)) \wedge ((v1_msualg_1 \\ (k6_msualg_1 X0)) \wedge ((v5_msualg_1 (k6_msualg_1 X0)) \wedge (l1_msualg_1 \\ (k6_msualg_1 X0)))))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (m4_margrel1 (k1_unialg_2 \\ X0) (u1_struct_0 X0)) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.((v7_struct_0 \\ X1) \wedge ((\neg v11_struct_0 X1) \wedge ((v1_msualg_1 X1) \wedge ((v5_msualg_1 X1) \wedge \\ (l1_msualg_1 X1)))))) \Rightarrow ((X1 = k6_msualg_1 X0) \Leftrightarrow ((u1_struct_0 X1 = \\ k1_tarski k6_numbers) \wedge ((u4_struct_0 X1 = k4_finseq_1 (k1_unialg_1 \\ X0)) \wedge ((u1_msualg_1 X1 = k1_partfun1 k5_numbers k5_numbers k5_numbers \\ (k3_finseq_2 (k1_tarski k6_numbers)) (k1_unialg_1 X0) (k7_finseq_2 \\ k6_numbers)) \wedge (u2_msualg_1 X1 = k1_margrel1 k5_numbers (k4_finseq_1 \\ (k1_unialg_1 X0) k6_numbers)))))) \end{aligned} \quad (24)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (\forall X2. \\ (l3_msualg_1 X2 X0) \Rightarrow (k5_msualg_1 X0 X1 X2 = k1_funct_1 (u4_msualg_1 \\ X0 X2) X1))) \end{aligned} \quad (25)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_relat_1 X0) \wedge (v1_funct_1 X0)) \Rightarrow (\forall X1.(X1 = \\ k10_xtuple_0 X0) \Leftrightarrow (\forall X2.(X2 \in X1) \Leftrightarrow (\exists X3.(X3 \in k9_xtuple_0 \\ X0) \wedge (X2 = k1_funct_1 X0 X3)))) \end{aligned} \quad (26)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (k1_unialg_2 X0 = \\ k10_xtuple_0 (u1_unialg_1 X0)) \end{aligned} \quad (27)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.((\neg \\ v2_struct_0 X1) \wedge ((v2_unialg_1 X1) \wedge ((v3_unialg_1 X1) \wedge ((v4_unialg_1 \\ X1) \wedge (l1_unialg_1 X1)))))) \Rightarrow ((r1_unialg_2 X0 X1) \Leftrightarrow (k1_unialg_1 \\ X0 = k1_unialg_1 X1))) \end{aligned} \quad (28)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (k9_msualg_1 X0 = \\ g3_msualg_1 (k6_msualg_1 X0) (k7_msualg_1 X0) (k8_msualg_1 X0)) \end{aligned} \quad (29)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (k8_msualg_1 X0 = \\ u1_unialg_1 X0) \end{aligned} \quad (30)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_struct_0 X0) \Rightarrow ((v13_struct_0 X0 np_1) \Rightarrow ((\neg v2_struct_0 \\ X0) \wedge (v7_struct_0 X0))) \end{aligned} \quad (31)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \wedge \\ (l3_msualg_1 X1 X0)) \Rightarrow ((v3_msualg_1 X1 X0) \Rightarrow (X1 = g3_msualg_1 X0 \\ (u3_msualg_1 X0 X1) (u4_msualg_1 X0 X1))) \end{aligned} \quad (32)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ & X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.((\neg \\ v2_struct_0 X1) \wedge ((v2_unialg_1 X1) \wedge ((v3_unialg_1 X1) \wedge ((v4_unialg_1 \\ X1) \wedge (l1_unialg_1 X1)))))) \Rightarrow ((r1_unialg_2 X0 X1) \Rightarrow (\forall X2.(\\ m1_subset_1 X2 (u4_struct_0 (k6_msualg_1 X0))) \Rightarrow (m5_margrel1 \\ (k5_msualg_1 (k6_msualg_1 X0) X2 (k1_msuhom_1 (k6_msualg_1 X0) \\ (k6_msualg_1 X1) (k9_msualg_1 X1))) (u1_struct_0 X1) (k1_unialg_2 \\ X1)))))) \end{aligned}$$