

t9_endalg (TML- HXi3ApveyXhY6Wtw7Rr9P1m7x8JBZ9Nq)

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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 $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k6_msualg_1 : \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_msualg_1 : \iota \Rightarrow \iota$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_endalg : \iota \Rightarrow \iota$ be given. Let $k16_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k4_endalg : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_msuhom_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_alg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_msualg_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_msuhom_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $k4_autalg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $m1_autalg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v1_msualg_1 \\ X0) \wedge (l1_msualg_1 X0)))) \Rightarrow (\forall X1. ((v3_msualg_1 X1 X0) \wedge ((\\ v4_msualg_1 X1 X0) \wedge (l3_msualg_1 X1 X0))) \Rightarrow (X1 = k1_msuhom_1 X0 X0 \\ X1)) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ & X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.((\neg \\ & v2_struct_0 X1) \wedge ((v2_unialg_1 X1) \wedge ((v3_unialg_1 X1) \wedge ((v4_unialg_1 \\ & X1) \wedge (l1_unialg_1 X1)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\ & X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow ((r1_alg_1 \\ & X0 X1 X2) \Rightarrow (r1_msualg_3 (k6_msualg_1 X0) (k9_msualg_1 X0) (k1_msuhom_1 \\ & (k6_msualg_1 X0) (k6_msualg_1 X1) (k9_msualg_1 X1) (k2_msuhom_1 \\ & X0 X1 X2)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X1) \wedge (m1_funct_2 \\ & X2 X0 X1)) \Rightarrow (\forall X3. (m2_funct_2 X3 X0 X1 X2) \Leftrightarrow (m1_subset_1 X3 \\ & X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ & X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v3_msualg_1 (\\ & k9_msualg_1 X0) (k6_msualg_1 X0)) \wedge (v4_msualg_1 (k9_msualg_1 \\ & X0) (k6_msualg_1 X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge (l1_struct_0 X0)) \Rightarrow (\neg v1_xboole_0 \\ & (u1_struct_0 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ & X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v7_struct_0 (\\ & k6_msualg_1 X0)) \wedge ((\neg v11_struct_0 (k6_msualg_1 X0)) \wedge ((v13_struct_0 \\ & (k6_msualg_1 X0) np_1) \wedge ((v1_msualg_1 (k6_msualg_1 X0)) \wedge (v5_msualg_1 \\ & (k6_msualg_1 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 X1) \wedge (m1_funct_2 \\ & X2 X0 X1)) \Rightarrow (\forall X3. (m2_funct_2 X3 X0 X1 X2) \Rightarrow ((v1_funct_1 X3) \wedge \\ & ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (m1_funct_2 X2 X0 X1) \Rightarrow (\neg v1_xboole_0 \\ & X2) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.(l5_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (10)$$

Assume the following.

$$\forall X0.(l1_unialg_1 X0) \Rightarrow (l1_struct_0 X0) \quad (11)$$

Assume the following.

$$\forall X0.(l1_msualg_1 X0) \Rightarrow (l5_struct_0 X0) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v3_msualg_1 (\\ k9_msualg_1 X0) (k6_msualg_1 X0)) \wedge (l3_msualg_1 (k9_msualg_1 \\ X0) (k6_msualg_1 X0))) \end{aligned} \quad (13)$$

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.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge \\ (l1_msualg_1 X0))) \wedge ((v4_msualg_1 X1 X0) \wedge (l3_msualg_1 X1 X0))) \Rightarrow \\ ((\neg v1_xboole_0 (k4_endalg X0 X1)) \wedge (m1_subset_1 (k4_endalg X0 \\ X1) (k1_zfmisc_1 (k4_autalg_1 (u1_struct_0 X0) (u3_msualg_1 X0 \\ X1) (u3_msualg_1 X0 X1)))))) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (m1_funct_2 (k1_endalg \\ X0) (u1_struct_0 X0) (u1_struct_0 X0)) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.k16_funcop_1 X0 X1 = k7_funcop_1 (k1_tarski X0) X1 \quad (17)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow (\forall X1.((v4_msualg_1 X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow \\
& (\forall X2.((\neg v1_xboole_0 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k4_autalg_1 (u1_struct_0 X0) (u3_msualg_1 X0 X1) (u3_msualg_1 \\
& X0 X1)))))) \Rightarrow ((X2 = k4_endalg X0 X1) \Leftrightarrow ((\forall X3.(m1_autalg_1 X3 \\
& (u1_struct_0 X0) (u3_msualg_1 X0 X1) X2) \Rightarrow (m2_pboole X3 (u1_struct_0 \\
& X0) (u3_msualg_1 X0 X1) (u3_msualg_1 X0 X1))) \wedge (\forall X3.(m2_pboole \\
& X3 (u1_struct_0 X0) (u3_msualg_1 X0 X1) (u3_msualg_1 X0 X1)) \Rightarrow ((\\
& X3 \in X2) \Leftrightarrow (r1_msualg_3 X0 X1 X1 X3))))))
\end{aligned} \tag{18}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
& X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.((\neg \\
& v2_struct_0 X1) \wedge ((v2_unialg_1 X1) \wedge ((v3_unialg_1 X1) \wedge ((v4_unialg_1 \\
& X1) \wedge (l1_unialg_1 X1)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow ((k6_msualg_1 \\
& X0 = k6_msualg_1 X1) \Rightarrow (k2_msuhom_1 X0 X1 X2 = k16_funcop_1 k6_numbers \\
& X2))))
\end{aligned} \tag{19}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
& X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.(m1_funct_2 \\
& X1 (u1_struct_0 X0) (u1_struct_0 X0)) \Rightarrow ((X1 = k1_endalg X0) \Leftrightarrow (\forall X2. \\
& ((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
& X0)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& X0) (u1_struct_0 X0)))))) \Rightarrow ((X2 \in X1) \Leftrightarrow (r1_alg_1 X0 X0 X2))))
\end{aligned} \tag{20}$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((v13_struct_0 X0 np_1) \Rightarrow ((\neg v2_struct_0 X0) \wedge (v7_struct_0 X0))) \tag{21}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
& X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.(m2_pboole \\
& X1 (u1_struct_0 (k6_msualg_1 X0)) (u3_msualg_1 (k6_msualg_1 X0) \\
& (k9_msualg_1 X0)) (u3_msualg_1 (k6_msualg_1 X0) (k9_msualg_1 \\
& X0))) \Rightarrow (\forall X2.(m2_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 \\
& X0) (k1_endalg X0)) \Rightarrow ((X1 = k16_funcop_1 k6_numbers X2) \Rightarrow (X1 \in k4_endalg \\
& (k6_msualg_1 X0) (k9_msualg_1 X0))))))
\end{aligned}$$