

t35_autalg_1
(TMZ3w8evA87UWii8PDLuVp6U1sizArnhM6L)

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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 $r2_group_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_autalg_1 : \iota \Rightarrow \iota$ be given. Let $k7_autalg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k9_msualg_1 : \iota \Rightarrow \iota$ 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 $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_group_6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_autalg_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_funcop_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $v3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v15_algstr_0 : \iota \Rightarrow o$ be given. Let $v2_group_1 : \iota \Rightarrow o$ be given. Let $v3_group_1 : \iota \Rightarrow o$ be given. Let $l3_algstr_0 : \iota \Rightarrow o$ be given. Let $r1_group_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ 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 $v3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v1_msualg_1 : \iota \Rightarrow o$ be given. Let $v5_msualg_1 : \iota \Rightarrow o$ be given. Let $l5_struct_0 : \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
& X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1. ((v1_funct_1 \\
& X1) \wedge ((v1_funct_2 X1 (u1_struct_0 (k3_autalg_1 X0)) (u1_struct_0 \\
& (k7_autalg_1 (k6_msualg_1 X0) (k9_msualg_1 X0)))) \wedge ((v1_group_6 \\
& X1 (k3_autalg_1 X0) (k7_autalg_1 (k6_msualg_1 X0) (k9_msualg_1 \\
& X0))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 \\
& (k3_autalg_1 X0)) (u1_struct_0 (k7_autalg_1 (k6_msualg_1 X0) \\
& (k9_msualg_1 X0)))))))))) \Rightarrow ((\forall X2. (X2 \in k1_autalg_1 X0) \Rightarrow \\
& (k1_funct_1 X1 X2 = k16_funcop_1 k6_numbers X2)) \Rightarrow (v3_funct_2 X1 \\
& (u1_struct_0 (k3_autalg_1 X0)) (u1_struct_0 (k7_autalg_1 (k6_msualg_1 \\
& X0) (k9_msualg_1 X0))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.((v1_relat_1 \\ X1) \wedge (v1_funct_1 X1)) \Rightarrow (((k9_xtuple_0 X1 = k1_autalg_1 X0) \wedge (\forall X2. \\ (X2 \in k1_autalg_1 X0) \Rightarrow (k1_funct_1 X1 X2 = k16_funcop_1 k6_numbers \\ X2))) \Rightarrow ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 (u1_struct_0 (k3_autalg_1 \\ X0)) (u1_struct_0 (k7_autalg_1 (k6_msualg_1 X0) (k9_msualg_1 \\ X0)))) \wedge ((v1_group_6 X1 (k3_autalg_1 X0) (k7_autalg_1 (k6_msualg_1 \\ X0) (k9_msualg_1 X0))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ (u1_struct_0 (k3_autalg_1 X0)) (u1_struct_0 (k7_autalg_1 (k6_msualg_1 \\ X0) (k9_msualg_1 X0)))))))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0 : \iota \Rightarrow \iota. \forall X1. \exists X2. ((v1_relat_1 X2) \wedge (\\ v1_funct_1 X2)) \wedge ((k9_xtuple_0 X2 = X1) \wedge (\forall X3. (X3 \in X1) \Rightarrow (\\ k1_funct_1 X2 X3 = X0 X3))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v15_algstr_0 X0) \wedge \\ ((v2_group_1 X0) \wedge ((v3_group_1 X0) \wedge (l3_algstr_0 X0)))))) \wedge ((\neg \\ v2_struct_0 X1) \wedge ((v15_algstr_0 X1) \wedge ((v2_group_1 X1) \wedge ((v3_group_1 \\ X1) \wedge (l3_algstr_0 X1)))))) \Rightarrow ((r2_group_6 X0 X1) \Leftrightarrow (r1_group_6 X0 \\ X1)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge \\ (l1_msualg_1 X0))) \wedge ((v4_msualg_1 X1 X0) \wedge (l3_msualg_1 X1 X0))) \Rightarrow \\ ((\neg v2_struct_0 (k7_autalg_1 X0 X1)) \wedge ((v15_algstr_0 (k7_autalg_1 \\ X0 X1)) \wedge ((v2_group_1 (k7_autalg_1 X0 X1)) \wedge (v3_group_1 (k7_autalg_1 \\ X0 X1)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v3_msualg_1 (\\ k9_msualg_1 X0) (k6_msualg_1 X0)) \wedge (v4_msualg_1 (k9_msualg_1 \\ X0) (k6_msualg_1 X0))) \end{aligned} \quad (6)$$

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.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((\neg v2_struct_0 (k3_autalg_1 X0)) \wedge ((v15_algstr_0 (k3_autalg_1 X0)) \wedge ((v2_group_1 (k3_autalg_1 X0)) \wedge (v3_group_1 (k3_autalg_1 X0)))))) \quad (8)$$

Assume the following.

$$\forall X0.(l5_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (9)$$

Assume the following.

$$\forall X0.(l1_msualg_1 X0) \Rightarrow (l5_struct_0 X0) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v3_msualg_1 (k9_msualg_1 X0) (k6_msualg_1 X0)) \wedge (l3_msualg_1 (k9_msualg_1 X0) (k6_msualg_1 X0))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 X0))) \wedge ((v4_msualg_1 X1 X0) \wedge (l3_msualg_1 X1 X0))) \Rightarrow ((\neg v2_struct_0 (k7_autalg_1 X0 X1)) \wedge ((v2_group_1 (k7_autalg_1 X0 X1)) \wedge ((v3_group_1 (k7_autalg_1 X0 X1)) \wedge (l3_algstr_0 (k7_autalg_1 X0 X1)))))) \quad (12)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v7_struct_0 (k6_msualg_1 X0)) \wedge ((\neg v11_struct_0 (k6_msualg_1 X0)) \wedge ((v1_msualg_1 (k6_msualg_1 X0)) \wedge ((v5_msualg_1 (k6_msualg_1 X0)) \wedge (l1_msualg_1 (k6_msualg_1 X0)))))) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((\neg v2_struct_0 (k3_autalg_1 X0)) \wedge ((v2_group_1 (k3_autalg_1 X0)) \wedge ((v3_group_1 (k3_autalg_1 X0)) \wedge (l3_algstr_0 (k3_autalg_1 X0)))))) \quad (14)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_group_1 X0) \wedge ((v3_group_1 \\
& X0) \wedge (l3_algstr_0 X0)))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_group_1 \\
& X1) \wedge ((v3_group_1 X1) \wedge (l3_algstr_0 X1)))) \Rightarrow ((r1_group_6 X0 X1) \Leftrightarrow \\
& (\exists X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) \\
& (u1_struct_0 X1)) \wedge ((v1_group_6 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \wedge (v3_funct_2 \\
& X2 (u1_struct_0 X0) (u1_struct_0 X1))))))
\end{aligned} \tag{15}$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((v13_struct_0 X0 np_1) \Rightarrow ((\neg v2_struct_0 X0) \wedge (v7_struct_0 X0))) \tag{16}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
& X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))) \Rightarrow (r2_group_6 (k3_autalg_1 \\
& X0) (k7_autalg_1 (k6_msualg_1 X0) (k9_msualg_1 X0)))
\end{aligned}$$