

t20_msuhom_1

(TMMwr2AtdvMhkBymVX7ubUA2xJP8Dr3v8RD)

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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 $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ 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 $r4_alg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4_msualg_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k9_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k1_msuhom_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_msuhom_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_alg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_msualg_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_alg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2_msualg_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $v7_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ 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. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
 & \quad X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1. ((\neg \\
 & \quad v2_struct_0 X1) \wedge ((v2_unialg_1 X1) \wedge ((v3_unialg_1 X1) \wedge ((v4_unialg_1 \\
 & \quad X1) \wedge (l1_unialg_1 X1)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
 & \quad X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
 & \quad (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow ((r2_alg_1 \\
 & \quad X0 X1 X2) \Rightarrow (r3_msualg_3 (k6_msualg_1 X0) (k9_msualg_1 X0) (k1_msuhom_1 \\
 & \quad (k6_msualg_1 X0) (k6_msualg_1 X1) (k9_msualg_1 X1)) (k2_msuhom_1 \\
 & \quad X0 X1 X2))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v2_unialg_1 X1) \wedge ((v3_unialg_1 X1) \wedge ((v4_unialg_1 X1) \wedge (l1_unialg_1 X1)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow ((r3_alg_1 X0 X1 X2) \Rightarrow (r2_msualg_3 (k6_msualg_1 X0) (k9_msualg_1 X0) (k1_msuhom_1 (k6_msualg_1 X0) (k6_msualg_1 X1) (k9_msualg_1 X1)) (k2_msuhom_1 X0 X1 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v3_msualg_1 (k9_msualg_1 X0) (k6_msualg_1 X0)) \wedge (v4_msualg_1 (k9_msualg_1 X0) (k6_msualg_1 X0))) \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v7_struct_0 (k6_msualg_1 X0)) \wedge ((\neg v11_struct_0 (k6_msualg_1 X0)) \wedge ((v13_struct_0 (k6_msualg_1 X0) np_1) \wedge ((v1_msualg_1 (k6_msualg_1 X0)) \wedge (v5_msualg_1 (k6_msualg_1 X0)))))) \quad (4)$$

Assume the following.

$$\forall X0.(l5_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (5)$$

Assume the following.

$$\forall X0.(l1_msualg_1 X0) \Rightarrow (l5_struct_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v3_msualg_1 (k9_msualg_1 X0) (k6_msualg_1 X0)) \wedge (l3_msualg_1 (k9_msualg_1 X0) (k6_msualg_1 X0))) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v7_struct_0 (k6_msualg_1 X0)) \wedge ((\neg v11_struct_0 (k6_msualg_1 X0)) \wedge ((v1_msualg_1 (k6_msualg_1 X0)) \wedge ((v5_msualg_1 (k6_msualg_1 X0)) \wedge (l1_msualg_1 (k6_msualg_1 X0)))))) \quad (8)$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 \\
& X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \wedge \\
& (((\neg v2_struct_0 X1) \wedge ((v2_unialg_1 X1) \wedge ((v3_unialg_1 X1) \wedge ((\\
& v4_unialg_1 X1) \wedge (l1_unialg_1 X1)))))) \wedge ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow (m2_pboole \\
& (k2_msuhom_1 X0 X1 X2) (u1_struct_0 (k6_msualg_1 X0)) (u3_msualg_1 \\
& (k6_msualg_1 X0) (k9_msualg_1 X0)) (u3_msualg_1 (k6_msualg_1 \\
& X0) (k1_msuhom_1 (k6_msualg_1 X0) (k6_msualg_1 X1) (k9_msualg_1 \\
& X1))))
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 \\
& X0) \wedge ((v1_msualg_1 X0) \wedge (l1_msualg_1 X0)))) \wedge (((\neg v2_struct_0 \\
& X1) \wedge ((\neg v11_struct_0 X1) \wedge ((v1_msualg_1 X1) \wedge (l1_msualg_1 X1)))) \wedge \\
& ((v3_msualg_1 X2 X1) \wedge ((v4_msualg_1 X2 X1) \wedge (l3_msualg_1 X2 X1)))) \Rightarrow \\
& ((v3_msualg_1 (k1_msuhom_1 X0 X1 X2) X0) \wedge ((v4_msualg_1 (k1_msuhom_1 \\
& X0 X1 X2) X0) \wedge (l3_msualg_1 (k1_msuhom_1 X0 X1 X2) X0)))
\end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
& X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1. ((\neg \\
& v2_struct_0 X1) \wedge ((v2_unialg_1 X1) \wedge ((v3_unialg_1 X1) \wedge ((v4_unialg_1 \\
& X1) \wedge (l1_unialg_1 X1)))))) \Rightarrow (\forall X2. ((v1_funct_1 X2) \wedge ((v1_funct_2 \\
& X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow ((r4_alg_1 \\
& X0 X1 X2) \Leftrightarrow ((r2_alg_1 X0 X1 X2) \wedge (r3_alg_1 X0 X1 X2))))
\end{aligned} \tag{11}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\
& X0))) \Rightarrow (\forall X1. (l3_msualg_1 X1 X0) \Rightarrow (\forall X2. (l3_msualg_1 \\
& X2 X0) \Rightarrow (\forall X3. (m2_pboole X3 (u1_struct_0 X0) (u3_msualg_1 \\
& X0 X1) (u3_msualg_1 X0 X2)) \Rightarrow ((r4_msualg_3 X0 X1 X2 X3) \Leftrightarrow ((r2_msualg_3 \\
& X0 X1 X2 X3) \wedge (r3_msualg_3 X0 X1 X2 X3))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\forall X0. (l1_struct_0 X0) \Rightarrow ((v13_struct_0 X0 \text{ np_1}) \Rightarrow ((\neg v2_struct_0 X0) \wedge (v7_struct_0 X0))) \tag{13}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ & \quad X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (\forall X1.((\neg \\ & \quad v2_struct_0 X1) \wedge ((v2_unialg_1 X1) \wedge ((v3_unialg_1 X1) \wedge ((v4_unialg_1 \\ & \quad X1) \wedge (l1_unialg_1 X1)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 \\ & \quad X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ & \quad (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))) \Rightarrow ((r4_alg_1 \\ X0 X1 X2) \Rightarrow (r4_msualg_3 (k6_msualg_1 X0) (k9_msualg_1 X0) (k1_msuhom_1 \\ & \quad (k6_msualg_1 X0) (k6_msualg_1 X1) (k9_msualg_1 X1)) (k2_msuhom_1 \\ & \quad X0 X1 X2)))))) \end{aligned}$$