

t12_msuhom_1 (TMdBuARQpQBkT- PqNHkJbqRaTP7eGiLmAacU)

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 $k5_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_unialg_1 : \iota \Rightarrow \iota$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v4_relat_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ 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 $v7_struct_0 : \iota \Rightarrow o$ 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 $k8_msualg_1 : \iota \Rightarrow \iota$ be given. Let $k7_msualg_1 : \iota \Rightarrow \iota$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l1_msualg_1 \\
& X0)) \wedge (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 X0)) \wedge ((\\
& v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 X0)))))) \wedge (m2_pboole \\
& X2 (u4_struct_0 X0) (k3_relat_1 (u1_msualg_1 X0) (k6_finseq_2 \\
& (u1_struct_0 X0) X1)) (k3_relat_1 (u2_msualg_1 X0) X1)))) \Rightarrow (\forall X3. \\
& \forall X4. \forall X5. (g3_msualg_1 X0 X1 X2 = g3_msualg_1 X3 X4 X5) \Rightarrow \\
& ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\
& X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v7_struct_0 (\\
& k6_msualg_1 X0) \wedge ((\neg v11_struct_0 (k6_msualg_1 X0)) \wedge ((v13_struct_0 \\
& (k6_msualg_1 X0) np_1) \wedge ((v1_msualg_1 (k6_msualg_1 X0) \wedge (v5_msualg_1 \\
& (k6_msualg_1 X0))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(l5_struct_0 X0) \Rightarrow (l1_struct_0 X0) \quad (3)$$

Assume the following.

$$\forall X0.(l1_msualg_1 X0) \Rightarrow (l5_struct_0 X0) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (m2_pboole (k8_msualg_1 \\ X0) (u4_struct_0 (k6_msualg_1 X0)) (k3_relat_1 (u1_msualg_1 (\\ k6_msualg_1 X0)) (k6_finseq_2 (u1_struct_0 (k6_msualg_1 X0)) \\ (k7_msualg_1 X0))) (k3_relat_1 (u2_msualg_1 (k6_msualg_1 X0)) \\ (k7_msualg_1 X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v1_relat_1 (k7_msualg_1 \\ X0)) \wedge ((v2_relat_1 (k7_msualg_1 X0)) \wedge ((v4_relat_1 (k7_msualg_1 \\ X0) (u1_struct_0 (k6_msualg_1 X0))) \wedge ((v1_funct_1 (k7_msualg_1 \\ X0)) \wedge (v1_partfun1 (k7_msualg_1 X0) (u1_struct_0 (k6_msualg_1 \\ X0))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 \\ X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow ((v7_struct_0 (\\ k6_msualg_1 X0)) \wedge ((\neg v11_struct_0 (k6_msualg_1 X0)) \wedge ((v1_msualg_1 \\ (k6_msualg_1 X0)) \wedge ((v5_msualg_1 (k6_msualg_1 X0)) \wedge (l1_msualg_1 \\ (k6_msualg_1 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge (l1_msualg_1 \\ X0)) \wedge (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 X0)) \wedge ((\\ v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 X0)))))) \wedge (m2_pboole \\ X2 (u4_struct_0 X0) (k3_relat_1 (u1_msualg_1 X0) (k6_finseq_2 \\ (u1_struct_0 X0) X1)) (k3_relat_1 (u2_msualg_1 X0) X1)))) \Rightarrow ((v3_msualg_1 \\ (g3_msualg_1 X0 X1 X2) X0) \wedge (l3_msualg_1 (g3_msualg_1 X0 X1 X2) X0)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (\forall X2. \\ (l3_msualg_1 X2 X0) \Rightarrow (k5_msualg_1 X0 X1 X2 = k1_funct_1 (u4_msualg_1 \\ X0 X2) X1))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (k9_msualg_1 X0 = g3_msualg_1 (k6_msualg_1 X0) (k7_msualg_1 X0) (k8_msualg_1 X0)) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v2_unialg_1 X0) \wedge ((v3_unialg_1 X0) \wedge ((v4_unialg_1 X0) \wedge (l1_unialg_1 X0)))))) \Rightarrow (k8_msualg_1 X0 = u1_unialg_1 X0) \quad (11)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((v13_struct_0 X0 \text{ np_1}) \Rightarrow ((\neg v2_struct_0 X0) \wedge (v7_struct_0 X0))) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \wedge (l3_msualg_1 X1 X0)) \Rightarrow ((v3_msualg_1 X1 X0) \Rightarrow (X1 = g3_msualg_1 X0 (u3_msualg_1 X0 X1) (u4_msualg_1 X0 X1))) \quad (13)$$

Theorem 1

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