

t4_osalg_2

(TMGSjVy51YyCGfGpyQCGFeX2ZRonno1Fmv3)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v11_struct_0 : \iota \Rightarrow o$ be given. Let $v4_osalg_1 : \iota \Rightarrow o$ be given. Let $v5_osalg_1 : \iota \Rightarrow o$ be given. Let $l3_osalg_1 : \iota \Rightarrow o$ be given. Let $v12_osalg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $g3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u4_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v11_osalg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ 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 $l1_osalg_1 : \iota \Rightarrow o$ be given. Let $l2_osalg_1 : \iota \Rightarrow o$ be given. Let $v3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ & X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow (\forall X1.(l3_msualg_1 \\ & X1 X0) \Rightarrow ((v12_osalg_1 X1 X0) \Leftrightarrow ((v1_relat_1 (u3_msualg_1 X0 X1)) \wedge \\ & ((v4_relat_1 (u3_msualg_1 X0 X1) (u1_struct_0 X0)) \wedge ((v1_funct_1 \\ & (u3_msualg_1 X0 X1)) \wedge ((v1_partfun1 (u3_msualg_1 X0 X1) (u1_struct_0 \\ & X0)) \wedge (v11_osalg_1 (u3_msualg_1 X0 X1) X0))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l1_msualg_1 \\ & X0)) \wedge (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 X0)) \wedge ((\\ & v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 X0)))))) \wedge (m2_pboole \\ & X2 (u4_struct_0 X0) (k3_relat_1 (u1_msualg_1 X0) (k6_finseq_2 \\ & (u1_struct_0 X0) X1)) (k3_relat_1 (u2_msualg_1 X0) X1)))) \Rightarrow (\forall X3. \\ & \forall X4. \forall X5. (g3_msualg_1 X0 X1 X2 = g3_msualg_1 X3 X4 X5) \Rightarrow \\ & ((X0 = X3) \wedge ((X1 = X4) \wedge (X2 = X5)))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \wedge \\ & (l3_msualg_1 X1 X0)) \Rightarrow (m2_pboole (u4_msualg_1 X0 X1) (u4_struct_0 \\ & X0) (k3_relat_1 (u1_msualg_1 X0) (k6_finseq_2 (u1_struct_0 X0) \\ & (u3_msualg_1 X0 X1))) (k3_relat_1 (u2_msualg_1 X0) (u3_msualg_1 \\ & X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (l3_osalg_1 X0) \Rightarrow ((l1_osalg_1 X0) \wedge (l2_osalg_1 X0)) \quad (4)$$

Assume the following.

$$\forall X0. (l1_osalg_1 X0) \Rightarrow (l1_msualg_1 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (l1_msualg_1 \\ & X0)) \wedge (((v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 X0)) \wedge ((\\ & v1_funct_1 X1) \wedge (v1_partfun1 X1 (u1_struct_0 X0)))))) \wedge (m2_pboole \\ & X2 (u4_struct_0 X0) (k3_relat_1 (u1_msualg_1 X0) (k6_finseq_2 \\ & (u1_struct_0 X0) X1)) (k3_relat_1 (u2_msualg_1 X0) X1))) \Rightarrow ((v3_msualg_1 \\ & (g3_msualg_1 X0 X1 X2) X0) \wedge (l3_msualg_1 (g3_msualg_1 X0 X1 X2) X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \wedge \\ & (l3_msualg_1 X1 X0)) \Rightarrow ((v3_msualg_1 X1 X0) \Rightarrow (X1 = g3_msualg_1 X0 \\ & (u3_msualg_1 X0 X1) (u4_msualg_1 X0 X1))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ & X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow (\forall X1. ((v12_osalg_1 \\ & X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow (v12_osalg_1 (g3_msualg_1 X0 (u3_msualg_1 \\ & X0 X1) (u4_msualg_1 X0 X1)) X0)) \end{aligned}$$