

t8_osalg_3

(TMbMM9p5e479VtAhMviFcKMtdYEmAsWxmrG)

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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 $r1_osalg_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $u3_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r4_msualg_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_msualg_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r5_msualg_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $v4_orders_2 : \iota \Rightarrow o$ be given. Let $v5_orders_2 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $v1_osalg_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_osalg_1 : \iota \Rightarrow o$ be given. Let $l2_osalg_1 : \iota \Rightarrow o$ be given. Let $m2_pboole : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_msualg_1 \\ & X0))) \Rightarrow (\forall X1. (l3_msualg_1 X1 X0) \Rightarrow ((r4_msualg_3 X0 X1 X1 (\\ & k2_msualg_3 (u1_struct_0 X0) (u3_msualg_1 X0 X1))) \wedge (r5_msualg_3 \\ & X0 X1 X1))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge \\ & ((v4_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \wedge (\\ & (v1_relat_1 X1) \wedge ((v4_relat_1 X1 (u1_struct_0 X0)) \wedge ((v1_funct_1 \\ & X1) \wedge ((v1_partfun1 X1 (u1_struct_0 X0)) \wedge (v11_osalg_1 X1 X0)))))) \Rightarrow \\ & (v1_osalg_3 (k2_msualg_3 (u1_struct_0 X0) X1) X0) \end{aligned} \quad (3)$$

Assume the following.

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

Assume the following.

$$\forall X0. (l2_osalg_1 X0) \Rightarrow ((l1_msualg_1 X0) \wedge (l1_orders_2 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1 X1) \wedge ((v4_relat_1 X1 X0) \wedge (\\ & (v1_funct_1 X1) \wedge (v1_partfun1 X1 X0)))) \Rightarrow (m2_pboole (k2_msualg_3 \\ & X0 X1) X0 X1 X1) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ & X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow (\forall X1. ((v12_osalg_1 \\ & X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow (\forall X2. ((v12_osalg_1 X2 X0) \wedge \\ & (l3_msualg_1 X2 X0)) \Rightarrow ((r1_osalg_3 X0 X1 X2) \Leftrightarrow (\exists X3. (m2_pboole \\ & X3 (u1_struct_0 X0) (u3_msualg_1 X0 X1) (u3_msualg_1 X0 X2)) \wedge ((\\ & r4_msualg_3 X0 X1 X2 X3) \wedge (v1_osalg_3 X3 X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. (l3_osalg_1 X0) \Rightarrow ((v4_osalg_1 X0) \Rightarrow ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge (v5_orders_2 X0)))) \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0. (((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ & X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow (\forall X1. ((v12_osalg_1 \\ & X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow (r1_osalg_3 X0 X1 X1)) \end{aligned}$$