

t17_osalg_1
(TMFjKAs3tx4VnMsmfeNffLN3RhsakoyhR6a)

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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 $l3_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v12_osalg_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $l1_struct_0 : \iota \Rightarrow o$ be given. Let $l2_msualg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_osalg_1 : \iota \Rightarrow o$ be given. Let $l2_osalg_1 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((l1_struct_0 X0) \wedge (l2_msualg_1 X1 X0)) \Rightarrow \\ & ((v1_relat_1 (u3_msualg_1 X0 X1)) \wedge ((v4_relat_1 (u3_msualg_1 \\ & X0 X1) (u1_struct_0 X0)) \wedge ((v1_funct_1 (u3_msualg_1 X0 X1)) \wedge (v1_partfun1 \\ & (u3_msualg_1 X0 X1) (u1_struct_0 X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. (l3_osalg_1 X0) \Rightarrow ((l1_osalg_1 X0) \wedge (l2_osalg_1 X0)) \tag{2}$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge (l1_msualg_1 X0)) \Rightarrow (\forall X1. (l3_msualg_1 X1 X0) \Rightarrow (l2_msualg_1 X1 X0)) \tag{3}$$

Assume the following.

$$\forall X0. (l2_osalg_1 X0) \Rightarrow ((l1_msualg_1 X0) \wedge (l1_orders_2 X0)) \tag{4}$$

Assume the following.

$$\forall X0. (l1_orders_2 X0) \Rightarrow (l1_struct_0 X0) \tag{5}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ & X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow (\forall X1.(l3_msualg_1 \\ & X1 X0) \Rightarrow ((v12_osalg_1 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((r3_orders_2 \\ & X0 X2 X3) \Rightarrow (r1_tarski (k1_funct_1 (u3_msualg_1 X0 X1) X2) (k1_funct_1 \\ & (u3_msualg_1 X0 X1) X3)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\ & X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1.((v1_relat_1 \\ & X1) \wedge ((v4_relat_1 X1 (u1_struct_0 X0)) \wedge ((v1_funct_1 X1) \wedge (v1_partfun1 \\ & X1 (u1_struct_0 X0)))))) \Rightarrow ((v11_osalg_1 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow ((r3_orders_2 X0 X2 X3) \Rightarrow (r1_tarski (k1_funct_1 X1 X2) (k1_funct_1 \\ & X1 X3)))))))))) \end{aligned} \quad (7)$$

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

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