

t13_osalg_1 (TMFY- WQTS4DqN4uffpXvdEKhoco6qxWmuLdw)

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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 $v8_osalg_1 : \iota \Rightarrow o$ be given. Let $v10_osalg_1 : \iota \Rightarrow o$ be given. Let $l3_osalg_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u4_struct_0 : \iota \Rightarrow \iota$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_finseq_2 : \iota \Rightarrow \iota$ be given. Let $r3_osalg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $r2_osalg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_osalg_1 : \iota \Rightarrow o$ be given. Let $r1_osalg_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l2_osalg_1 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $k2_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_msualg_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_osalg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\ & X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))) \Rightarrow (\forall X1. (m2_finseq_2 \\ & X1 (u1_struct_0 X0) (k3_finseq_2 (u1_struct_0 X0))) \Rightarrow (\forall X2. \\ & (m2_finseq_2 X2 (u1_struct_0 X0) (k3_finseq_2 (u1_struct_0 X0))) \Rightarrow \\ & ((r2_osalg_1 X0 X1 X2) \wedge (r2_osalg_1 X0 X2 X1)) \Rightarrow (X1 = X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_osalg_1 \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u4_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\ & (u4_struct_0 X0)) \Rightarrow (((r1_osalg_1 X0 X1 X2) \wedge (r1_osalg_1 X0 X2 X3)) \Rightarrow \\ & (r1_osalg_1 X0 X1 X3)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v5_orders_2 X0) \wedge (l1_orders_2 X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 \\ & (u1_struct_0 X0)) \Rightarrow (((r1_orders_2 X0 X1 X2) \wedge (r1_orders_2 X0 X2 \\ & X1)) \Rightarrow (X1 = X2)))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge(l1_osalg_1 X0)))\wedge((m1_subset_1 X1 (u4_struct_0 X0))\wedge(m1_subset_1 X2 (u4_struct_0 X0))))\Rightarrow((r1_osalg_1 X0 X1 X2)\Rightarrow(r1_osalg_1 X0 X2 X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v3_orders_2 X0)\wedge(l1_orders_2 X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow((r3_orders_2 X0 X1 X2)\Leftrightarrow(r1_orders_2 X0 X1 X2)) \quad (5)$$

Assume the following.

$$\forall X0.(l3_osalg_1 X0)\Rightarrow((l1_osalg_1 X0)\wedge(l2_osalg_1 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l2_osalg_1 X0)\Rightarrow((l1_msualg_1 X0)\wedge(l1_orders_2 X0)) \quad (7)$$

Assume the following.

$$\forall X0.(l1_osalg_1 X0)\Rightarrow(l1_msualg_1 X0) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge(l1_msualg_1 X0)))\wedge(m1_subset_1 X1 (u4_struct_0 X0)))\Rightarrow(m1_subset_1 (k2_msualg_1 X0 X1) (u1_struct_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge(l1_msualg_1 X0)))\wedge(m1_subset_1 X1 (u4_struct_0 X0)))\Rightarrow(m2_finseq_2 (k1_msualg_1 X0 X1) (u1_struct_0 X0) (k3_finseq_2 (u1_struct_0 X0))) \quad (10)$$

Assume the following.

$$\forall X0.(((\neg v2_struct_0 X0)\wedge((\neg v11_struct_0 X0)\wedge((v4_osalg_1 X0)\wedge((v5_osalg_1 X0)\wedge(l3_osalg_1 X0))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u4_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u4_struct_0 X0))\Rightarrow(\forall X3.(m2_finseq_2 X3 (u1_struct_0 X0) (k3_finseq_2 (u1_struct_0 X0)))\Rightarrow((r3_osalg_1 X0 X1 X2 X3)\Leftrightarrow((r1_osalg_1 X0 X1 X2)\wedge((r2_osalg_1 X0 X3 (k1_msualg_1 X0 X2))\wedge(\forall X4.(m1_subset_1 X4 (u4_struct_0 X0))\Rightarrow(((r1_osalg_1 X0 X1 X4)\wedge(r2_osalg_1 X0 X3 (k1_msualg_1 X0 X4))\Rightarrow(r2_osalg_1 X0 (k1_msualg_1 X0 X2) (k1_msualg_1 X0 X4)))))))))) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 (u4_struct_0 X0)) \Rightarrow ((v7_osalg_1 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 \\ X2 (u4_struct_0 X0)) \Rightarrow (((r1_osalg_1 X0 X1 X2) \wedge (r2_osalg_1 X0 (k1_msualg_1 \\ X0 X1) (k1_msualg_1 X0 X2))) \Rightarrow (r3_orders_2 X0 (k2_msualg_1 X0 X1) \\ (k2_msualg_1 X0 X2)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge (l1_osalg_1 \\ X0))) \Rightarrow ((v5_osalg_1 X0) \Leftrightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u4_struct_0 X0)) \Rightarrow (((r1_osalg_1 \\ X0 X1 X2) \wedge ((k1_msualg_1 X0 X1 = k1_msualg_1 X0 X2) \wedge (k2_msualg_1 \\ X0 X1 = k2_msualg_1 X0 X2))) \Rightarrow (X1 = X2)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ X0) \wedge ((v5_osalg_1 X0) \wedge ((v8_osalg_1 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow \\ (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (v7_osalg_1 X1 \\ X0)) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(l3_osalg_1 X0) \Rightarrow ((v4_osalg_1 X0) \Rightarrow ((v3_orders_2 X0) \wedge \\ ((v4_orders_2 X0) \wedge (v5_orders_2 X0)))) \quad (15)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ X0) \wedge ((v5_osalg_1 X0) \wedge ((v8_osalg_1 X0) \wedge ((v10_osalg_1 X0) \wedge (l3_osalg_1 \\ X0)))))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u4_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u4_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ (u4_struct_0 X0)) \Rightarrow (\forall X4.(m2_finseq_2 X4 (u1_struct_0 X0) \\ (k3_finseq_2 (u1_struct_0 X0)) \Rightarrow (((r3_osalg_1 X0 X2 X1 X4) \wedge (r3_osalg_1 \\ X0 X2 X3 X4)) \Rightarrow (X1 = X3)))))) \end{aligned}$$