

t10_osalg_4 (TM-
FyDn4wJL1VZ6HufsfbA8PKTEZvWDVgj2G)

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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 $v2_osalg_4 : \iota \Rightarrow o$ 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 $v2_msualg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_osalg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ 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 $k6_osalg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $k3_osalg_4 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v11_osalg_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_osalg_1 : \iota \Rightarrow o$ be given. Let $l2_osalg_1 : \iota \Rightarrow o$ be given. Let $l1_msualg_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k8_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_osalg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_osalg_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\ X0) \wedge ((v5_orders_2 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow (\forall X1. (m1_subset_1 \\ X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 \\ X0)) \Rightarrow ((r3_orders_2 X0 X1 X2) \Rightarrow (k3_osalg_4 X0 X1 = k3_osalg_4 X0 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ X0) \wedge ((v5_osalg_1 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow (\forall X1. (l3_msualg_1 \\ X1 X0) \Rightarrow ((v12_osalg_1 X1 X0) \Leftrightarrow ((v1_relat_1 (u3_msualg_1 X0 X1)) \wedge \\ ((v4_relat_1 (u3_msualg_1 X0 X1) (u1_struct_0 X0)) \wedge ((v1_funct_1 \\ (u3_msualg_1 X0 X1)) \wedge ((v1_partfun1 (u3_msualg_1 X0 X1) (u1_struct_0 \\ X0)) \wedge (v11_osalg_1 (u3_msualg_1 X0 X1) X0))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. (l3_osalg_1 X0) \Rightarrow ((l1_osalg_1 X0) \wedge (l2_osalg_1 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l2_osalg_1 X0) \Rightarrow ((l1_msualg_1 X0) \wedge (l1_orders_2 X0)) \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2_struct_0 \\ & X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 X0) \wedge ((v5_osalg_1 X0) \wedge \\ & ((v2_osalg_4 X0) \wedge (l3_osalg_1 X0)))))) \wedge (((v12_osalg_1 X1 X0) \wedge \\ & (l3_msualg_1 X1 X0)) \wedge (((v2_msualg_4 X2 X0 X1) \wedge (m1_osalg_4 X2 X0 \\ & X1)) \wedge (m1_subset_1 X3 (u1_struct_0 X0)))))) \Rightarrow (m1_subset_1 (k6_osalg_4 \\ & X0 X1 X2 X3) (k1_zfmisc_1 (k8_eqrel_1 (k4_osalg_4 X0 (u3_msualg_1 \\ & X0 X1) (k3_osalg_4 X0 X3)) (k5_osalg_4 X0 X1 X2 (k3_osalg_4 X0 X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(r1_tarski X0 X1) \Leftrightarrow (\forall X2.(X2 \in X0) \Rightarrow (X2 \in X1)) \quad (6)$$

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.

$$\begin{aligned} & \forall X0.(((\neg v2_struct_0 X0) \wedge ((\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ & X0) \wedge ((v5_osalg_1 X0) \wedge ((v2_osalg_4 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow \\ & (\forall X1.((v12_osalg_1 X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow (\forall X2. \\ & ((v2_msualg_4 X2 X0 X1) \wedge (m1_osalg_4 X2 X0 X1)) \Rightarrow (\forall X3.(m1_subset_1 \\ & X3 (u1_struct_0 X0) \Rightarrow (\forall X4.(m1_subset_1 X4 (k1_zfmisc_1 \\ & (k8_eqrel_1 (k4_osalg_4 X0 (u3_msualg_1 X0 X1) (k3_osalg_4 X0 X3)) \\ & (k5_osalg_4 X0 X1 X2 (k3_osalg_4 X0 X3)))))) \Rightarrow ((X4 = k6_osalg_4 X0 \\ & X1 X2 X3) \Leftrightarrow (\forall X5.(X5 \in X4) \Leftrightarrow (\exists X6.(X6 \in k1_funct_1 (u3_msualg_1 \\ & X0 X1) X3) \wedge (X5 = k6_eqrel_1 (k4_osalg_4 X0 (u3_msualg_1 X0 X1) (k3_osalg_4 \\ & X0 X3)) (k4_osalg_4 X0 (u3_msualg_1 X0 X1) (k3_osalg_4 X0 X3)) (k5_osalg_4 \\ & X0 X1 X2 (k3_osalg_4 X0 X3)) X6)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(l3_osalg_1 X0) \Rightarrow ((v4_osalg_1 X0) \Rightarrow ((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge (v5_orders_2 X0)))) \quad (9)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (\neg v11_struct_0 X0) \wedge ((v4_osalg_1 \\ & X0) \wedge ((v5_osalg_1 X0) \wedge ((v2_osalg_4 X0) \wedge (l3_osalg_1 X0)))))) \Rightarrow \\ & (\forall X1.((v12_osalg_1 X1 X0) \wedge (l3_msualg_1 X1 X0)) \Rightarrow (\forall X2. \\ & ((v2_msualg_4 X2 X0 X1) \wedge (m1_osalg_4 X2 X0 X1)) \Rightarrow (\forall X3.(m1_subset_1 \\ & X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\ & X0)) \Rightarrow ((r3_orders_2 X0 X3 X4) \Rightarrow (r1_tarski (k6_osalg_4 X0 X1 X2 X3) \\ & (k6_osalg_4 X0 X1 X2 X4))))))) \end{aligned}$$