

t11_osalg_4
(TMU5FE8TWD2Bd5rxys68af4YNTTrKHejBxA2)

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Let $v2_struct_0 : \iota \Rightarrow o$ 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 $v2_osalg_4 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r3_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_osalg_4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_relat_2 : \iota \Rightarrow o$ be given. Let $v3_relat_2 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_eqrel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $k2_osalg_4 : \iota \Rightarrow \iota$ be given. Let $k1_osalg_4 : \iota \Rightarrow \iota$ be given. Let $v8_relat_2 : \iota \Rightarrow o$ be given. Let $v1_waybel_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Assume the following.

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

Assume the following.

$$\forall X0. \forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_2 X1) \wedge ((v3_relat_2 X1) \wedge ((v1_partfun1 \\ & X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 X0 X0)))))) \Rightarrow \\ & (\forall X2.(X2 \in X0) \Rightarrow (X2 \in k6_eqrel_1 X0 X0 X1 X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v3_orders_2 \\ & X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ & m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow ((r3_orders_2 X0 X1 X2) \Leftrightarrow (r1_orders_2 \\ & X0 X1 X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 X1)\wedge(m1_subset_1 X1 (k1_zfmisc_1 X0))))\Rightarrow(\forall X2.(m2_subset_1 X2 X0 X1)\Leftrightarrow(m1_subset_1 X2 X1)) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_struct_0 X0))\Rightarrow(\neg v1_xboole_0 (u1_struct_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0)\Rightarrow(l1_struct_0 X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))\Rightarrow(m1_subset_1 (k6_eqrel_1 X0 X1 X2 X3) (k1_zfmisc_1 X1)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v3_orders_2 X0)\wedge((v4_orders_2 X0)\wedge((v5_orders_2 X0)\wedge(l1_orders_2 X0))))))\wedge(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(m2_subset_1 (k3_osalg_4 X0 X1) (k1_zfmisc_1 (u1_struct_0 X0) (k2_osalg_4 X0))) \quad (9)$$

Assume the following.

$$\forall X0.(((\neg v2_struct_0 X0)\wedge((v3_orders_2 X0)\wedge((v4_orders_2 X0)\wedge((v5_orders_2 X0)\wedge(l1_orders_2 X0))))))\Rightarrow(((\neg v1_xboole_0 (k2_osalg_4 X0))\wedge(m1_subset_1 (k2_osalg_4 X0) (k1_zfmisc_1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \quad (10)$$

Assume the following.

$$\forall X0.(((\neg v2_struct_0 X0)\wedge((v3_orders_2 X0)\wedge((v4_orders_2 X0)\wedge((v5_orders_2 X0)\wedge(l1_orders_2 X0))))))\Rightarrow(((v1_partfun1 (k1_osalg_4 X0) (u1_struct_0 X0))\wedge((v3_relat_2 (k1_osalg_4 X0))\wedge((v8_relat_2 (k1_osalg_4 X0))\wedge(m1_subset_1 (k1_osalg_4 X0) (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X0)))))))) \quad (11)$$

Assume the following.

$$\forall X0.(((\neg v2_struct_0 X0)\wedge((v3_orders_2 X0)\wedge((v4_orders_2 X0)\wedge((v5_orders_2 X0)\wedge(l1_orders_2 X0))))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(k3_osalg_4 X0 X1 = k6_eqrel_1 (u1_struct_0 X0) (u1_struct_0 X0) (k1_osalg_4 X0) X1)) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.(l1_orders_2 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ (u1_struct_0 X0))) \Rightarrow ((v1_waybel_0 X1 X0) \Leftrightarrow (\forall X2.(m1_subset_1 \\ X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ X0)) \Rightarrow (\neg(X2 \in X1) \wedge ((X3 \in X1) \wedge (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\ X0)) \Rightarrow (\neg(X4 \in X1) \wedge ((r1_orders_2 X0 X2 X4) \wedge (r1_orders_2 X0 X3 X4)))))))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\ X0) \wedge ((v5_orders_2 X0) \wedge ((v2_osalg_4 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow \\ (\forall X1.(m1_subset_1 X1 (k2_osalg_4 X0)) \Rightarrow (v1_waybel_0 X1 \\ X0)) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0) \wedge ((v3_relat_2 X0) \wedge (v8_relat_2 X0))) \Rightarrow \\ ((v1_relat_1 X0) \wedge (v1_relat_2 X0)) \quad (15)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 \\ X0)) \Rightarrow (v1_xboole_0 X1)) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (17)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge ((v4_orders_2 \\ X0) \wedge ((v5_orders_2 X0) \wedge ((v2_osalg_4 X0) \wedge (l1_orders_2 X0)))))) \Rightarrow \\ (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ X2 (u1_struct_0 X0)) \Rightarrow (\neg(\exists X3.(m1_subset_1 X3 (u1_struct_0 \\ X0)) \wedge ((r3_orders_2 X0 X3 X1) \wedge (r3_orders_2 X0 X3 X2))) \wedge (\forall X3. \\ (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\neg(r3_orders_2 X0 X1 X3) \wedge (r3_orders_2 \\ X0 X2 X3)))))) \end{aligned}$$