

t11_yellow_5

(TMKMfZzzissJzc1KkTBSShYy4hZuAuLrSWG)

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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 $v1_lattice3 : \iota \Rightarrow o$ be given. Let $v2_lattice3 : \iota \Rightarrow o$ be given. Let $v11_waybel_1 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r6_waybel_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_waybel_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_yellow_0 : \iota \Rightarrow o$ be given. Let $v2_waybel_1 : \iota \Rightarrow o$ be given. Let $v10_waybel_1 : \iota \Rightarrow o$ be given. Let $v9_waybel_1 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v2_yellow_0 : \iota \Rightarrow o$ be given. Let $r1_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_yellow_0 : \iota \Rightarrow \iota$ be given. Let $v1_yellow_0 : \iota \Rightarrow o$ be given. Let $k3_yellow_0 : \iota \Rightarrow \iota$ be given. Let $k12_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_orders_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k13_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k11_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
 & X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v3_yellow_0 X0) \wedge \\
 & (l1_orders_2 X0)))))) \Rightarrow (((v2_waybel_1 X0) \wedge (v10_waybel_1 X0)) \Rightarrow \\
 & ((v9_waybel_1 X0) \wedge (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\
 & (k7_waybel_1 X0 (k7_waybel_1 X0 X1) = X1))) \wedge ((v9_waybel_1 X0) \wedge \\
 & (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k7_waybel_1 X0 \\
 & (k7_waybel_1 X0 X1) = X1))) \Rightarrow ((v2_waybel_1 X0) \wedge (v10_waybel_1 X0)))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((v3_orders_2 X0) \wedge ((v4_orders_2 X0) \wedge ((v5_orders_2 \\
 & X0) \wedge ((v1_lattice3 X0) \wedge ((v2_lattice3 X0) \wedge ((v3_yellow_0 X0) \wedge \\
 & (l1_orders_2 X0)))))) \Rightarrow (((v9_waybel_1 X0) \wedge (\forall X1.(m1_subset_1 \\
 & X1 (u1_struct_0 X0)) \Rightarrow (k7_waybel_1 X0 (k7_waybel_1 X0 X1) = X1))) \Rightarrow \\
 & (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (r6_waybel_1 X0 \\
 & X1 (k7_waybel_1 X0 X1))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v5_orders_2 X0) \wedge ((v2_yellow_0 X0) \wedge (l1_orders_2 X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (r1_orders_2 X0 X1 (k4_yellow_0 X0))) \quad (3)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_yellow_0 X0) \wedge (l1_orders_2 X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (r1_orders_2 X0 (k3_yellow_0 X0) X1)) \quad (4)$$

Assume the following.

$$\forall X0.((v3_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v2_lattice3 X0) \wedge (l1_orders_2 X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X1 = k12_lattice3 X0 X1 X2) \Leftrightarrow (r3_orders_2 X0 X1 X2)))) \quad (5)$$

Assume the following.

$$\forall X0.((v3_orders_2 X0) \wedge ((v5_orders_2 X0) \wedge ((v1_lattice3 X0) \wedge (l1_orders_2 X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X1 = k13_lattice3 X0 X1 X2) \Leftrightarrow (r1_orders_2 X0 X2 X1)))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (r3_orders_2 X0 X1 X1) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0) \wedge ((v3_orders_2 X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow ((r3_orders_2 X0 X1 X2) \Leftrightarrow (r1_orders_2 X0 X1 X2)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v5_orders_2 X0) \wedge ((v1_lattice3 X0) \wedge (l1_orders_2 X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k13_lattice3 X0 X1 X2 = k10_lattice3 X0 X1 X2) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v5_orders_2\ X0)\wedge((v2_lattice3 \\ X0)\wedge(l1_orders_2\ X0)))\wedge((m1_subset_1\ X1\ (u1_struct_0\ X0))\wedge(\\ m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow(k12_lattice3\ X0\ X1\ X2 = k11_lattice3 \\ X0\ X1\ X2) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0\ X0)\wedge(l1_orders_2\ X0))\wedge \\ (m1_subset_1\ X1\ (u1_struct_0\ X0)))\Rightarrow(m1_subset_1\ (k7_waybel_1 \\ X0\ X1)\ (u1_struct_0\ X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(l1_orders_2\ X0)\Rightarrow(m1_subset_1\ (k4_yellow_0\ X0)\ (u1_struct_0\ X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l1_orders_2\ X0)\Rightarrow(m1_subset_1\ (k3_yellow_0\ X0)\ (u1_struct_0\ X0)) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((l1_orders_2\ X0)\wedge((m1_subset_1 \\ X1\ (u1_struct_0\ X0))\wedge(m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow(m1_subset_1 \\ (k11_lattice3\ X0\ X1\ X2)\ (u1_struct_0\ X0)) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((l1_orders_2\ X0)\wedge((m1_subset_1 \\ X1\ (u1_struct_0\ X0))\wedge(m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow(m1_subset_1 \\ (k10_lattice3\ X0\ X1\ X2)\ (u1_struct_0\ X0)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge(l1_orders_2\ X0))\Rightarrow((v2_waybel_1 \\ X0)\Leftrightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow(\forall X2. \\ (m1_subset_1\ X2\ (u1_struct_0\ X0))\Rightarrow(\forall X3.(m1_subset_1\ X3 \\ (u1_struct_0\ X0))\Rightarrow(k11_lattice3\ X0\ X1\ (k10_lattice3\ X0\ X2\ X3) = \\ k10_lattice3\ X0\ (k11_lattice3\ X0\ X1\ X2)\ (k11_lattice3\ X0\ X1\ X3)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0\ X0)\wedge(l1_orders_2\ X0))\Rightarrow(\forall X1. \\ (m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2 \\ (u1_struct_0\ X0))\Rightarrow((r6_waybel_1\ X0\ X1\ X2)\Leftrightarrow((k10_lattice3\ X0\ X1 \\ X2 = k4_yellow_0\ X0)\wedge(k11_lattice3\ X0\ X1\ X2 = k3_yellow_0\ X0)))) \end{aligned} \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v5_orders_2\ X0)\wedge((v1_lattice3 \\ & X0)\wedge(l1_orders_2\ X0)))\wedge((m1_subset_1\ X1\ (u1_struct_0\ X0))\wedge \\ & m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow(k13_lattice3\ X0\ X1\ X2 = k13_lattice3 \\ & X0\ X2\ X1) \end{aligned} \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v5_orders_2\ X0)\wedge((v2_lattice3 \\ & X0)\wedge(l1_orders_2\ X0)))\wedge((m1_subset_1\ X1\ (u1_struct_0\ X0))\wedge \\ & m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow(k12_lattice3\ X0\ X1\ X2 = k12_lattice3 \\ & X0\ X2\ X1) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_orders_2\ X0)\Rightarrow(((\neg v2_struct_0\ X0)\wedge(v11_waybel_1 \\ & X0))\Rightarrow((\neg v2_struct_0\ X0)\wedge((v3_orders_2\ X0)\wedge((v4_orders_2\ X0)\wedge \\ & ((v5_orders_2\ X0)\wedge((v1_lattice3\ X0)\wedge((v2_lattice3\ X0)\wedge((v3_yellow_0 \\ & X0)\wedge((v2_waybel_1\ X0)\wedge(v10_waybel_1\ X0)))))))))) \end{aligned} \quad (20)$$

Assume the following.

$$\forall X0.(l1_orders_2\ X0)\Rightarrow((v3_yellow_0\ X0)\Rightarrow((v1_yellow_0\ X0)\wedge(v2_yellow_0\ X0))) \quad (21)$$

Assume the following.

$$\forall X0.(l1_orders_2\ X0)\Rightarrow((v1_lattice3\ X0)\Rightarrow(\neg v2_struct_0\ X0)) \quad (22)$$

Theorem 1

$$\begin{aligned} & \forall X0.((v3_orders_2\ X0)\wedge((v4_orders_2\ X0)\wedge((v5_orders_2 \\ & X0)\wedge((v1_lattice3\ X0)\wedge((v2_lattice3\ X0)\wedge((v11_waybel_1\ X0)\wedge \\ & (l1_orders_2\ X0))))))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0 \\ & X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ X0))\Rightarrow((r6_waybel_1 \\ & X0\ X1\ X2)\Leftrightarrow(X2 = k7_waybel_1\ X0\ X1)))) \end{aligned}$$