

t10_lattice6
(TMZLroKbX9LjFcisFTgqZXhPq8Vx1NTpG8k)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v4_lattice3 : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $k3_lattice6 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_lattices : \iota \Rightarrow \iota$ be given. Let $v2_waybel_6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_lattice3 : \iota \Rightarrow \iota$ be given. Let $v4_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k16_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_yellow_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_yellow_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v14_lattices : \iota \Rightarrow o$ be given. Let $v5_orders_2 : \iota \Rightarrow o$ be given. Let $v2_yellow_0 : \iota \Rightarrow o$ be given. Let $v2_lattice3 : \iota \Rightarrow o$ be given. Let $l1_orders_2 : \iota \Rightarrow o$ be given. Let $k4_yellow_0 : \iota \Rightarrow \iota$ be given. Let $v6_lattices : \iota \Rightarrow o$ be given. Let $v8_lattices : \iota \Rightarrow o$ be given. Let $v9_lattices : \iota \Rightarrow o$ be given. Let $v1_orders_2 : \iota \Rightarrow o$ be given. Let $v3_orders_2 : \iota \Rightarrow o$ be given. Let $v4_orders_2 : \iota \Rightarrow o$ be given. Let $v1_lattice3 : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $v15_lattices : \iota \Rightarrow o$ be given. Let $v13_lattices : \iota \Rightarrow o$ be given. Let $v5_lattices : \iota \Rightarrow o$ be given. Let $v7_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v4_lattices X0) \wedge (l2_lattices \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (((r1_lattices X0 X1 X2) \wedge (r1_lattices \\ & X0 X2 X1)) \Rightarrow (X1 = X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v4_lattice3 \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(X1 = k16_lattice3 X0 X2) \Leftrightarrow ((r3_lattice3 X0 X1 \\ & X2) \wedge (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((r3_lattice3 \\ & X0 X3 X2) \Rightarrow (r3_lattices X0 X3 X1)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1)\Rightarrow((v1_xboole_0 X1)\vee (X0 \in X1)) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v4_lattice3 X0)\wedge(l3_lattices X0))))\Rightarrow(\forall X1.(k15_lattice3 X0 X1 = k1_yellow_0 (k3_lattice3 X0) X1)\wedge(k16_lattice3 X0 X1 = k2_yellow_0 (k3_lattice3 X0) X1)) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v14_lattices X0)\wedge(l3_lattices X0))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(r3_lattices X0 X1 (k6_lattices X0))) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v5_orders_2 X0)\wedge((v2_yellow_0 X0)\wedge((v2_lattice3 X0)\wedge(l1_orders_2 X0)))))\Rightarrow(v2_waybel_6 (k4_yellow_0 X0) X0) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v6_lattices X0)\wedge((v8_lattices X0)\wedge((v9_lattices X0)\wedge(l3_lattices X0))))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow((r3_lattices X0 X1 X2)\Leftrightarrow(r1_lattices X0 X1 X2)) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices X0)))\Rightarrow((\neg v2_struct_0 (k3_lattice3 X0))\wedge((v1_orders_2 (k3_lattice3 X0)\wedge((v3_orders_2 (k3_lattice3 X0)\wedge((v4_orders_2 (k3_lattice3 X0)\wedge(v5_orders_2 (k3_lattice3 X0)))))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v14_lattices X0)\wedge(l3_lattices X0))))\Rightarrow((v1_orders_2 (k3_lattice3 X0))\wedge((v3_orders_2 (k3_lattice3 X0)\wedge((v4_orders_2 (k3_lattice3 X0)\wedge((v5_orders_2 (k3_lattice3 X0)\wedge(v2_yellow_0 (k3_lattice3 X0)))))) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices X0)))\Rightarrow((v1_orders_2 (k3_lattice3 X0))\wedge((v3_orders_2 (k3_lattice3 X0)\wedge((v4_orders_2 (k3_lattice3 X0)\wedge((v5_orders_2 (k3_lattice3 X0)\wedge((v1_lattice3 (k3_lattice3 X0)\wedge(v2_lattice3 (k3_lattice3 X0)))))) \quad (11)$$

Assume the following.

$$\forall X0.\exists X1.m1_subset_1 X1 X0 \quad (12)$$

Assume the following.

$$\forall X0.(l3_lattices X0)\Rightarrow((l1_lattices X0)\wedge(l2_lattices X0)) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l2_lattices X0))\Rightarrow(m1_subset_1 (k6_lattices X0) (u1_struct_0 X0)) \quad (14)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices X0)))\Rightarrow((v1_orders_2 (k3_lattice3 X0))\wedge((v3_orders_2 (k3_lattice3 X0))\wedge((v4_orders_2 (k3_lattice3 X0))\wedge((v5_orders_2 (k3_lattice3 X0))\wedge(l1_orders_2 (k3_lattice3 X0)))))) \quad (15)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v4_lattice3 X0)\wedge(l3_lattices X0))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(k3_lattice6 X0 X1 = k16_lattice3 X0 (ReplSep (toset (\lambda X2 : \iota.m1_subset_1 X2 (u1_struct_0 X0))) (\lambda X2 : \iota.(r3_lattices X0 X1 X2)\wedge(X2\neq X1)) (\lambda X2 : \iota.X2)))) \quad (16)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(k4_lattice3 X0 X1 = X1)) \quad (17)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l3_lattices X0))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(r3_lattice3 X0 X1 X2)\Leftrightarrow(\forall X3.(m1_subset_1 X3 (u1_struct_0 X0))\Rightarrow((X3 \in X2)\Rightarrow(r1_lattices X0 X1 X3)))) \quad (18)$$

Assume the following.

$$\forall X0.(l1_orders_2 X0)\Rightarrow(k4_yellow_0 X0 = k2_yellow_0 X0 k1_xboole_0) \quad (19)$$

Assume the following.

$$\forall X0.(l3_lattices X0)\Rightarrow(((\neg v2_struct_0 X0)\wedge(v15_lattices X0))\Rightarrow((\neg v2_struct_0 X0)\wedge((v13_lattices X0)\wedge(v14_lattices X0)))) \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0. (l3_lattices\ X0) \Rightarrow & (((\neg v2_struct_0\ X0) \wedge (v10_lattices \\ X0)) \Rightarrow & ((\neg v2_struct_0\ X0) \wedge ((v4_lattices\ X0) \wedge ((v5_lattices\ X0) \wedge \\ ((v6_lattices\ X0) \wedge & ((v7_lattices\ X0) \wedge ((v8_lattices\ X0) \wedge (v9_lattices \\ X0))))))) & \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0. (l3_lattices\ X0) \Rightarrow & (((\neg v2_struct_0\ X0) \wedge ((v10_lattices \\ X0) \wedge (v4_lattice3\ X0))) \Rightarrow & ((\neg v2_struct_0\ X0) \wedge ((v10_lattices\ X0) \wedge \\ (v15_lattices\ X0)))) & \end{aligned} \quad (22)$$

Theorem 1

$$\begin{aligned} \forall X0. ((\neg v2_struct_0\ X0) \wedge & ((v10_lattices\ X0) \wedge ((v4_lattice3 \\ X0) \wedge (l3_lattices\ X0)))) \Rightarrow & ((k3_lattice6\ X0\ (k6_lattices\ X0) = k6_lattices \\ X0) \wedge (v2_waybel_6\ (k4_lattice3\ X0\ & (k6_lattices\ X0))\ (k3_lattice3 \\ X0))) & \end{aligned}$$