

t15_lattice6

(TMW2Kie8YjMabBwkJ7PwD3FdV4BX7RBPprpt)

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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 $v2_lattice6 : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v4_lattice6 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_lattice6 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r4_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k15_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_lattice6 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v4_lattices : \iota \Rightarrow o$ be given. Let $v5_lattices : \iota \Rightarrow o$ be given. Let $v7_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v2_lattice6 \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\neg(r3_lattices \\ & X0 X2 X1) \wedge ((X1 \neq X2) \wedge (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\ & (\neg(r3_lattices X0 X2 X3) \wedge (r1_lattice6 X0 X1 X3))))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v4_lattice3 \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2.((X1 \in X2) \wedge (r4_lattice3 X0 X1 X2)) \Rightarrow (k15_lattice3 \\ & X0 X2 = X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v4_lattice3 \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow ((v4_lattice6 X1 X0) \Rightarrow ((r1_lattice6 X0 X1 (k4_lattice6 X0 \\ & X1)) \wedge (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((r1_lattice6 \\ & X0 X1 X2) \Rightarrow (X2 = k4_lattice6 X0 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v6_lattices \\ & X0)\wedge((v8_lattices X0)\wedge((v9_lattices X0)\wedge(l3_lattices X0))))\wedge \\ & ((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 \\ & X0))))\Rightarrow((r3_lattices X0 X1 X2)\Leftrightarrow(r1_lattices X0 X1 X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge \\ & ((v4_lattice3 X0)\wedge(l3_lattices X0))))\wedge(m1_subset_1 X1 (u1_struct_0 \\ & X0)))\Rightarrow(m1_subset_1 (k4_lattice6 X0 X1) (u1_struct_0 X0)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v4_lattice3 \\ & X0)\wedge(l3_lattices X0))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0))\Rightarrow((v4_lattice6 X1 X0)\Leftrightarrow(k4_lattice6 X0 X1\neq X1))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v4_lattice3 \\ & X0)\wedge(l3_lattices X0))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & X0))\Rightarrow(k4_lattice6 X0 X1 = k15_lattice3 X0 (ReplSep (toset (\lambda X2 : \\ & \iota.m1_subset_1 X2 (u1_struct_0 X0))) (\lambda X2 : \iota.(r3_lattices \\ & X0 X2 X1)\wedge(X2\neq X1)) (\lambda X2 : \iota.X2)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices \\ & X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow((r1_lattice6 X0 X1 X2)\Leftrightarrow((X1\neq \\ & X2)\wedge((r3_lattices X0 X2 X1)\wedge(\forall X3.(m1_subset_1 X3 (u1_struct_0 \\ & X0))\Rightarrow(\neg(r3_lattices X0 X2 X3)\wedge((r3_lattices X0 X3 X1)\wedge((X3\neq X1)\wedge \\ & (X3\neq X2)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge(l3_lattices X0))\Rightarrow(\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(r4_lattice3 X0 \\ & X1 X2)\Leftrightarrow(\forall X3.(m1_subset_1 X3 (u1_struct_0 X0))\Rightarrow((X3 \in X2)\Rightarrow \\ & (r1_lattices X0 X3 X1)))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l3_lattices X0)\Rightarrow(((\neg v2_struct_0 X0)\wedge(v10_lattices \\ & X0))\Rightarrow((\neg v2_struct_0 X0)\wedge((v4_lattices X0)\wedge((v5_lattices X0)\wedge \\ & ((v6_lattices X0)\wedge((v7_lattices X0)\wedge((v8_lattices X0)\wedge(v9_lattices \\ & X0)))))))) \end{aligned} \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v4_lattice3 \\ & X0) \wedge ((v2_lattice6 X0) \wedge (l3_lattices X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 (u1_struct_0 X0)) \Rightarrow ((v4_lattice6 X1 X0) \Leftrightarrow (\exists X2.(m1_subset_1 \\ & X2 (u1_struct_0 X0)) \wedge ((r1_lattice6 X0 X1 X2) \wedge (\forall X3.(m1_subset_1 \\ & X3 (u1_struct_0 X0)) \Rightarrow ((r1_lattice6 X0 X1 X3) \Rightarrow (X3 = X2))))))) \end{aligned}$$