

t38_lattice2

(TMMB6wjNvoaw8QRCSWLWn2g2eHxvsXa84sS)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ 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 $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_lattice2 : \iota \Rightarrow \iota$ 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 $k2_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_lattices : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $v4_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $k1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $v5_lattices : \iota \Rightarrow o$ be given. Let $v7_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v8_lattices X0) \wedge ((v9_lattices \\ X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((r1_lattices \\ X0 X1 X2) \Leftrightarrow (k2_lattices X0 X1 X2 = X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\ (u1_struct_0 (k1_lattice2 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 \\ (u1_struct_0 (k1_lattice2 X0)) \Rightarrow (((X1 = X3) \wedge (X2 = X4)) \Rightarrow ((k4_lattices \\ X0 X1 X2 = k3_lattices (k1_lattice2 X0) X3 X4) \wedge (k3_lattices X0 X1 \\ X2 = k4_lattices (k1_lattice2 X0) X3 X4)))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v6_lattices \\ X0) \wedge ((v8_lattices X0) \wedge ((v9_lattices X0) \wedge (l3_lattices X0)))) \wedge \\ ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\ X0)))) \Rightarrow ((r3_lattices X0 X1 X2) \Leftrightarrow (r1_lattices X0 X1 X2)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(v6_lattices X0)\wedge(l1_lattices X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0)))\Rightarrow(k4_lattices X0 X1 X2 = k2_lattices X0 X1 X2) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(v4_lattices X0)\wedge(l2_lattices X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0)))\Rightarrow(k3_lattices X0 X1 X2 = k1_lattices X0 X1 X2) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices X0)))\Rightarrow((v3_lattices (k1_lattice2 X0))\wedge(v10_lattices (k1_lattice2 X0))) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l3_lattices X0))\Rightarrow((\neg v2_struct_0 (k1_lattice2 X0))\wedge(v3_lattices (k1_lattice2 X0))) \quad (7)$$

Assume the following.

$$\forall X0.(l3_lattices X0)\Rightarrow((l1_lattices X0)\wedge(l2_lattices X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l3_lattices X0)\Rightarrow((v3_lattices (k1_lattice2 X0))\wedge(l3_lattices (k1_lattice2 X0))) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l2_lattices X0))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow((r1_lattices X0 X1 X2)\Leftrightarrow(k1_lattices X0 X1 X2 = X2)))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(v6_lattices X0)\wedge(l1_lattices X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0)))\Rightarrow(k4_lattices X0 X1 X2 = k4_lattices X0 X2 X1) \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. (&l3_lattices\ X0) \Rightarrow (((\neg v2_struct_0\ X0) \wedge (v10_lattices \\ &X0)) \Rightarrow ((\neg v2_struct_0\ X0) \wedge ((v4_lattices\ X0) \wedge ((v5_lattices\ X0) \wedge \\ &((v6_lattices\ X0) \wedge ((v7_lattices\ X0) \wedge ((v8_lattices\ X0) \wedge (v9_lattices \\ &X0)))))))) \end{aligned} \quad (12)$$

Theorem 1

$$\begin{aligned} \forall X0. (&\neg v2_struct_0\ X0) \wedge ((v10_lattices\ X0) \wedge (l3_lattices \\ &X0)) \Rightarrow (\forall X1. (m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2. \\ &(m1_subset_1\ X2\ (u1_struct_0\ X0)) \Rightarrow ((r3_lattices\ X0\ X1\ X2) \Rightarrow (\forall X3. \\ &(m1_subset_1\ X3\ (u1_struct_0\ (k1_lattice2\ X0)) \Rightarrow (\forall X4. \\ &(m1_subset_1\ X4\ (u1_struct_0\ (k1_lattice2\ X0)) \Rightarrow (((X1 = X3) \wedge \\ &X2 = X4) \Rightarrow (r3_lattices\ (k1_lattice2\ X0)\ X4\ X3))))))) \end{aligned}$$