

t37_lattice3

(TMYfMCrgXrsUroLQSS68XeFi6XsUYEvhDti)

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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 $l3_lattices : \iota \Rightarrow o$ be given. Let $k15_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r4_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $v6_lattices : \iota \Rightarrow o$ 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.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v4_lattice3 \\ &X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ &X0)) \Rightarrow (\forall X2. (X1 = k16_lattice3 X0 X2) \Leftrightarrow ((r3_lattice3 X0 X1 \\ &X2) \wedge (\forall X3. (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((r3_lattice3 \\ &X0 X3 X2) \Rightarrow (r3_lattices X0 X3 X1)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (&((\neg v2_struct_0 X0) \wedge ((v6_lattices \\ &X0) \wedge ((v8_lattices X0) \wedge ((v9_lattices X0) \wedge (l3_lattices X0)))))) \wedge \\ &((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\ &X0))) \Rightarrow ((r3_lattices X0 X1 X2) \Leftrightarrow (r1_lattices X0 X1 X2)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (&(\neg v2_struct_0 X0) \wedge (l3_lattices X0)) \Rightarrow \\ &(m1_subset_1 (k15_lattice3 X0 X1) (u1_struct_0 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge (l3_lattices X0)) \Rightarrow (((\neg v2_struct_0 \\ &X0) \wedge ((v10_lattices X0) \wedge ((v4_lattice3 X0) \wedge (l3_lattices X0)))) \Rightarrow \\ &(\forall X1. \forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X2 = \\ &k15_lattice3 X0 X1) \Leftrightarrow ((r4_lattice3 X0 X2 X1) \wedge (\forall X3. (m1_subset_1 \\ &X3 (u1_struct_0 X0)) \Rightarrow ((r4_lattice3 X0 X3 X1) \Rightarrow (r1_lattices X0 X2 \\ &X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l3_lattices X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(r3_lattice3 X0 \\ & X1 X2) \Leftrightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow ((X3 \in X2) \Rightarrow \\ & (r1_lattices X0 X1 X3)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l3_lattices X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge (v10_lattices \\ & X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v4_lattices X0) \wedge ((v5_lattices X0) \wedge \\ & ((v6_lattices X0) \wedge ((v7_lattices X0) \wedge ((v8_lattices X0) \wedge (v9_lattices \\ & X0)))))))))) \end{aligned} \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v4_lattice3 \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.k15_lattice3 X0 X1 = k16_lattice3 \\ & X0 (ReplSep (toSet (\lambda X2 : \iota.m1_subset_1 X2 (u1_struct_0 X0))) \\ & (\lambda X2 : \iota.r4_lattice3 X0 X2 X1) (\lambda X2 : \iota.X2))) \end{aligned}$$