

t3_lattice3

(TMU6H4fnehxfEFe6s3qJZrjVyEinwgpL8EY)

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Let $v13_lattices : \iota \Rightarrow o$ be given. Let $k1_lattice3 : \iota \Rightarrow \iota$ be given. Let $k5_lattices : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_tarSKI : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_setfam_1 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_lattices : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $v3_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $k1_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Let $k4_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Let $k9_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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. Let $v8_lattices : \iota \Rightarrow o$ be given. Let $v9_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. (m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarSKI X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. r1_tarSKI k1_xboole_0 X0 \quad (2)$$

Assume the following.

$$\forall X0. k3_xboole_0 X0 k1_xboole_0 = k1_xboole_0 \quad (3)$$

Assume the following.

$$\forall X0. k9_setfam_1 X0 = k1_zfmisc_1 X0 \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge (v6_lattices X0) \wedge (l1_lattices X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k4_lattices X0 X1 X2 = k2_lattices X0 X1 X2) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge(v10_lattices X0)\wedge((v13_lattices X0)\wedge(l3_lattices X0))))\wedge(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(k4_lattices X0 (k5_lattices X0) X1 = k5_lattices X0) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((m1_subset_1 X1 (u1_struct_0 (k1_lattice3 X0)))\wedge(m1_subset_1 X2 (u1_struct_0 (k1_lattice3 X0))))\Rightarrow(((X1 = X3)\wedge(X2 = X4))\Rightarrow(k2_lattices (k1_lattice3 X0) X1 X2 = k3_xboole_0 X3 X4)) \quad (7)$$

Assume the following.

$$\forall X0.(v3_lattices (k1_lattice3 X0))\wedge(v10_lattices (k1_lattice3 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(\neg v2_struct_0 (k1_lattice3 X0))\wedge(v3_lattices (k1_lattice3 X0)) \quad (9)$$

Assume the following.

$$\forall X0.(l3_lattices X0)\Rightarrow((l1_lattices X0)\wedge(l2_lattices X0)) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_lattices X0))\Rightarrow(m1_subset_1 (k5_lattices X0) (u1_struct_0 X0)) \quad (11)$$

Assume the following.

$$\forall X0.(v3_lattices (k1_lattice3 X0))\wedge(l3_lattices (k1_lattice3 X0)) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v3_lattices X1)\wedge(l3_lattices X1))\Rightarrow((X1 = k1_lattice3 X0)\Leftrightarrow((u1_struct_0 X1 = k9_setfam_1 X0)\wedge(\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 X0))\Rightarrow(\forall X3.(m1_subset_1 X3 (k1_zfmisc_1 X0))\Rightarrow((k1_binop_1 (u2_lattices X1) X2 X3 = k4_subset_1 X0 X2 X3)\wedge(k1_binop_1 (u1_lattices X1) X2 X3 = k9_subset_1 X0 X2 X3)))))) \quad (13)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge(l1_lattices X0))\Rightarrow((v13_lattices X0)\Leftrightarrow(\exists X1.(m1_subset_1 X1 (u1_struct_0 X0))\wedge(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow((k2_lattices X0 X1 X2 = X1)\wedge(k2_lattices X0 X2 X1 = X1)))))) \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.k3_xboole_0 X0 X1 = k3_xboole_0 X1 X0 \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_lattices X0) \Rightarrow & (((\neg v2_struct_0 X0) \wedge (v10_lattices \\ X0)) \Rightarrow & ((\neg v2_struct_0 X0) \wedge ((v4_lattices X0) \wedge ((v5_lattices X0) \wedge \\ ((v6_lattices X0) \wedge & ((v7_lattices X0) \wedge ((v8_lattices X0) \wedge (v9_lattices \\ X0)))))))) & (16) \end{aligned}$$

Theorem 1

$$\forall X0.(v13_lattices (k1_lattice3 X0)) \wedge (k5_lattices (k1_lattice3 X0) = k1_xboole_0)$$