

t13_openlatt (TMacP- PhAGW9TXTfvPxbHcL1K7iq5LMJqACW)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v11_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $k9_openlatt : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_openlatt : \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k10_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k9_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v19_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_openlatt : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.\neg(X0 \in X1) \wedge ((m1_subset_1 X1 (k1_zfmisc_1 X2)) \wedge (v1_xboole_0 X2)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 (k1_zfmisc_1 X1)) \Leftrightarrow (r1_tarski X0 X1) \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \quad (3)$$

Assume the following.

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

Assume the following.

$$\forall X0.\forall X1.r1_tarski X0 X0 \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v11_lattices X0) \wedge (l3_lattices X0)))) \Rightarrow (\neg v1_xboole_0 (k9_openlatt X0)) \quad (6)$$

Assume the following.

$$\forall X0.\exists X1.m1_subset_1 X1 X0 \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v11_lattices X0)\wedge(l3_lattices X0))))\Rightarrow((v1_relat_1 (k8_openlatt X0))\wedge(v1_funct_1 (k8_openlatt X0))) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v11_lattices X0)\wedge(l3_lattices X0))))\Rightarrow(k9_openlatt X0 = k10_xtuple_0 (k8_openlatt X0)) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v11_lattices X0)\wedge(l3_lattices X0))))\Rightarrow(\forall X1.((v1_relat_1 X1)\wedge(v1_funct_1 X1))\Rightarrow((X1 = k8_openlatt X0)\Leftrightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow((k9_xtuple_0 X1 = u1_struct_0 X0)\wedge(k1_funct_1 X1 X2 = ReplSep (toset (\lambda X3 : \iota.(\neg v1_xboole_0 X3)\wedge((v19_lattices X3 X0)\wedge((v20_lattices X3 X0)\wedge(m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0)))))) (\lambda X3 : \iota.(X3 \in k7_openlatt X0)\wedge(X2 \in X3)) (\lambda X3 : \iota.X3)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\forall X0.((v1_relat_1 X0)\wedge(v1_funct_1 X0))\Rightarrow(\forall X1.(X1 = k10_xtuple_0 X0)\Leftrightarrow(\forall X2.(X2 \in X1)\Leftrightarrow(\exists X3.(X3 \in k9_xtuple_0 X0)\wedge(X2 = k1_funct_1 X0 X3)))) \quad (11)$$

Theorem 1

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v11_lattices X0)\wedge(l3_lattices X0))))\Rightarrow(\forall X1.(X1 \in k9_openlatt X0)\Leftrightarrow(\exists X2.(m1_subset_1 X2 (u1_struct_0 X0))\wedge(X1 = k1_funct_1 (k8_openlatt X0) X2)))$$