t35_openlatt (TMG4DuBJWTRkvZa6YxPUEtQ1NztT31JBLBi)

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Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Let $v7\_struct\_0 : \iota \Rightarrow o$ be given. Let $v10\_lattices : \iota \Rightarrow o$ be given. Let $v1\_lattice2 : \iota \Rightarrow o$ be given. Let $l3\_lattices : \iota \Rightarrow o$ be given. Let $r2\_lattice4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_openlatt : \iota \Rightarrow \iota$ be given. Let $k17\_openlatt : \iota \Rightarrow \iota$ be given. Let $k18\_openlatt : \iota \Rightarrow \iota$ be given. Let $v2\_pre\_topc : \iota \Rightarrow o$ be given. Let $l1\_pre\_topc : \iota \Rightarrow o$ be given. Let $k6\_lattices : \iota \Rightarrow \iota$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k15\_openlatt : \iota \Rightarrow \iota$ be given. Let $k16\_openlatt : \iota \Rightarrow \iota$ be given. Let $k7\_openlatt : \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8\_openlatt : \iota \Rightarrow \iota$ be given. Let $v11\_lattices : \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $v1\_pre\_topc : \iota \Rightarrow o$ be given. Let $m1\_lattice4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1\_lattices : \iota \Rightarrow o$ be given. Let $l2\_lattices : \iota \Rightarrow o$ be given. Let $u1\_pre\_topc : \iota \Rightarrow \iota$ be given. Let $k9\_openlatt : \iota \Rightarrow \iota$ be given. Let $k3\_tarski : \iota \Rightarrow \iota$ be given. Let $v3\_filter\_0 : \iota \Rightarrow o$ be given. Let $v13\_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_pre\_topc\ X0) \wedge (l1\_pre\_topc\ X0))) \Rightarrow (k6\_lattices\ (k6\_openlatt\ X0) = u1\_struct\_0\ X0) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((\neg v7\_struct\_0\ X0) \wedge ((v10\_lattices\ X0) \wedge ((v1\_lattice2\ X0) \wedge (l3\_lattices\ X0))))) \Rightarrow (k3\_funct\_2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ (k15\_openlatt\ X0))\ (k16\_openlatt\ X0)\ (k6\_lattices\ X0) = k7\_openlatt\ X0) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0\ X0) \wedge (((v1\_funct\_1\ X2) \wedge ((v1\_funct\_2\ X2\ X0\ X1) \wedge (m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))))) \wedge (m1\_subset\_1\ X3\ X0))) \Rightarrow (k3\_funct\_2\ X0\ X1\ X2\ X3 = k1\_funct\_1\ X2\ X3) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v7\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v1\_lattice2\ X0)\wedge(l3\_lattices\ X0)))))\Rightarrow(k18\_openlatt\ X0 = k8\_openlatt\ X0) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v11\_lattices\ X0)\wedge(l3\_lattices\ X0))))\Rightarrow(k16\_openlatt\ X0 = k8\_openlatt\ X0) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l1\_struct\_0\ X0))\Rightarrow(\neg v1\_xboole\_0\ (u1\_struct\_0\ X0)) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v7\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v1\_lattice2\ X0)\wedge(l3\_lattices\ X0)))))\Rightarrow((\neg v2\_struct\_0\ (k17\_openlatt\ X0))\wedge((v1\_pre\_topc\ (k17\_openlatt\ X0))\wedge(v2\_pre\_topc\ (k17\_openlatt\ X0)))) \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge(l3\_lattices\ X0)))\wedge((\neg v2\_struct\_0\ X1)\wedge((v10\_lattices\ X1)\wedge(l3\_lattices\ X1))))\Rightarrow(\forall X2.(m1\_lattice4\ X2\ X0\ X1)\Rightarrow((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1))))))) \tag{8}$$

Assume the following.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow((l1\_lattices\ X0)\wedge(l2\_lattices\ X0)) \tag{9}$$

Assume the following.

$$\forall X0.(l1\_lattices\ X0)\Rightarrow(l1\_struct\_0\ X0) \tag{10}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow((\neg v2\_struct\_0\ (k6\_openlatt\ X0))\wedge((v10\_lattices\ (k6\_openlatt\ X0))\wedge(l3\_lattices\ (k6\_openlatt\ X0)))) \tag{11}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge(l2\_lattices\ X0))\Rightarrow(m1\_subset\_1\ (k6\_lattices\ X0)\ (u1\_struct\_0\ X0)) \tag{12}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v7\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v1\_lattice2\ X0)\wedge(l3\_lattices\ X0)))))\Rightarrow(m1\_lattice4\ (k18\_openlatt\ X0)\ X0\ (k6\_openlatt\ (k17\_openlatt\ X0))) \tag{13}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v7\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v1\_lattice2\ X0)\wedge(l3\_lattices\ X0)))))\Rightarrow((v1\_pre\_topc\ (k17\_openlatt\ X0))\wedge(l1\_pre\_topc\ (k17\_openlatt\ X0))) \tag{14}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v11\_lattices\ X0)\wedge(l3\_lattices\ X0))))\Rightarrow(m1\_lattice4\ (k16\_openlatt\ X0)\ X0\ (k15\_openlatt\ X0)) \tag{15}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v11\_lattices\ X0)\wedge(l3\_lattices\ X0))))\Rightarrow((\neg v2\_struct\_0\ (k15\_openlatt\ X0))\wedge((v10\_lattices\ (k15\_openlatt\ X0))\wedge(l3\_lattices\ (k15\_openlatt\ X0)))) \tag{16}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge(l3\_lattices\ X0)))\Rightarrow(\forall X1.((\neg v2\_struct\_0\ X1)\wedge((v10\_lattices\ X1)\wedge(l3\_lattices\ X1)))\Rightarrow(\forall X2.(m1\_lattice4\ X2\ X0\ X1)\Rightarrow((r2\_lattice4\ X0\ X1\ X2)\Leftrightarrow(k3\_funct\_2\ (u1\_struct\_0\ X0)\ (u1\_struct\_0\ X1)\ X2\ (k6\_lattices\ X0) = k6\_lattices\ X1)))) \tag{17}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v7\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v1\_lattice2\ X0)\wedge(l3\_lattices\ X0)))))\Rightarrow(\forall X1.((v1\_pre\_topc\ X1)\wedge(l1\_pre\_topc\ X1))\Rightarrow((X1 = k17\_openlatt\ X0)\Leftrightarrow((u1\_struct\_0\ X1 = k7\_openlatt\ X0)\wedge(u1\_pre\_topc\ X1 = ReplSep\ (toset\ (\lambda X2 : \iota.\ m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k9\_openlatt\ X0))))\ (\lambda X2 : \iota.\ True)\ (\lambda X2 : \iota.k3\_tarski\ X2))))) \tag{18}$$

Assume the following.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow(((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge(v3\_filter\_0\ X0)))\Rightarrow((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v11\_lattices\ X0)\wedge(v3\_filter\_0\ X0))))) \tag{19}$$

Assume the following.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow(((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge(v1\_lattice2\ X0)))\Rightarrow((\neg v2\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v13\_lattices\ X0)\wedge(v3\_filter\_0\ X0))))) \tag{20}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v7\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v1\_lattice2\ X0)\wedge(l3\_lattices\ X0)))))\Rightarrow(r2\_lattice4\ X0\ (k6\_openlatt\ (k17\_openlatt\ X0))\ (k18\_openlatt\ X0))$$