t31_openlatt (TMchfgS7WkEcsYpxJxPqtSVGtcnuUXhUncT)

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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 $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $k6\_openlatt : \iota \Rightarrow \iota$ be given. Let $k17\_openlatt : \iota \Rightarrow \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_openlatt : \iota \Rightarrow \iota$ be given. Let $k3\_tarski : \iota \Rightarrow \iota$ 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 $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $g3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_pre\_topc : \iota \Rightarrow o$ be given. Let $v2\_pre\_topc : \iota \Rightarrow o$ be given. Let $l1\_pre\_topc : \iota \Rightarrow o$ be given. Let $k5\_openlatt : \iota \Rightarrow \iota$ be given. Let $k1\_openlatt : \iota \Rightarrow \iota$ be given. Let $k4\_openlatt : \iota \Rightarrow \iota$ be given. Let $v3\_lattices : \iota \Rightarrow o$ be given. Let $u1\_pre\_topc : \iota \Rightarrow \iota$ be given. Let $k7\_openlatt : \iota \Rightarrow \iota$ be given. Let $u2\_lattices : \iota \Rightarrow \iota$ be given. Let $u1\_lattices : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0))))))\Rightarrow(\forall X3.\forall X4.\forall X5.(g3\_lattices\ X0\ X1\ X2 = g3\_lattices\ X3\ X4\ X5)\Rightarrow((X0 = X3)\wedge((X1 = X4)\wedge(X2 = X5)))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v7\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v1\_lattice2\ X0)\wedge(l3\_lattices\ X0)))))\Rightarrow((\neg v2\_struct\_0\ (k17\_openlatt\ X0))\wedge((v1\_pre\_topc\ (k17\_openlatt\ X0))\wedge(v2\_pre\_topc\ (k17\_openlatt\ X0)))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow((\neg v2\_struct\_0\ (k6\_openlatt\ X0))\wedge((v10\_lattices\ (k6\_openlatt\ X0))\wedge(l3\_lattices\ (k6\_openlatt\ X0)))) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow((v1\_funct\_1\ (k5\_openlatt\ X0))\wedge((v1\_funct\_2\ (k5\_openlatt\ X0)\ (k2\_zfmisc\_1\ (k1\_openlatt\ X0)\ (k1\_openlatt\ X0))\ (k1\_openlatt\ X0))\wedge(m1\_subset\_1\ (k5\_openlatt\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_openlatt\ X0)\ (k1\_openlatt\ X0))\ (k1\_openlatt\ X0))))))) \tag{4}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow((v1\_funct\_1\ (k4\_openlatt\ X0))\wedge((v1\_funct\_2\ (k4\_openlatt\ X0)\ (k2\_zfmisc\_1\ (k1\_openlatt\ X0)\ (k1\_openlatt\ X0))\ (k1\_openlatt\ X0))\wedge(m1\_subset\_1\ (k4\_openlatt\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_openlatt\ X0)\ (k1\_openlatt\ X0))\ (k1\_openlatt\ X0))))))) \tag{5}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v7\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v1\_lattice2\ X0)\wedge(l3\_lattices\ X0)))))\Rightarrow((v1\_pre\_topc\ (k17\_openlatt\ X0))\wedge(l1\_pre\_topc\ (k17\_openlatt\ X0))) \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v1\_funct\_1\ X1)\wedge((v1\_funct\_2\ X1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0)))))\wedge((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k2\_zfmisc\_1\ X0\ X0)\ X0)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X0)\ X0))))))\Rightarrow((v3\_lattices\ (g3\_lattices\ X0\ X1\ X2))\wedge(l3\_lattices\ (g3\_lattices\ X0\ X1\ X2))) \tag{7}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v2\_pre\_topc\ X0)\wedge(l1\_pre\_topc\ X0)))\Rightarrow(k6\_openlatt\ X0 = g3\_lattices\ (k1\_openlatt\ X0)\ (k4\_openlatt\ X0)\ (k5\_openlatt\ X0)) \tag{8}$$

Assume the following.

$$\forall X0.(l1\_pre\_topc\ X0)\Rightarrow(k1\_openlatt\ X0 = u1\_pre\_topc\ X0) \tag{9}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v7\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v1\_lattice2\ X0)\wedge(l3\_lattices\ X0)))))\Rightarrow(\forall X1.((v1\_pre\_topc\ X1)\wedge(l1\_pre\_topc\ X1))\Rightarrow((X1 = k17\_openlatt\ X0)\Leftrightarrow((u1\_struct\_0\ X1 = k7\_openlatt\ X0)\wedge(u1\_pre\_topc\ X1 = ReplSep\ (toset\ (\lambda X2 : \iota.\ m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k9\_openlatt\ X0))))\ (\lambda X2 : \iota.\ True)\ (\lambda X2 : \iota.k3\_tarski\ X2))))) \tag{10}$$

Assume the following.

$$\forall X0.(l3\_lattices\ X0)\Rightarrow((v3\_lattices\ X0)\Rightarrow(X0 = g3\_lattices\ (u1\_struct\_0\ X0)\ (u2\_lattices\ X0)\ (u1\_lattices\ X0))) \tag{11}$$

Theorem 1

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((\neg v7\_struct\_0\ X0)\wedge((v10\_lattices\ X0)\wedge((v1\_lattice2\ X0)\wedge(l3\_lattices\ X0)))))\Rightarrow(u1\_struct\_0\ (k6\_openlatt\ (k17\_openlatt\ X0)) = ReplSep\ (toset\ (\lambda X1 : \iota.m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k9\_openlatt\ X0))))\ (\lambda X1 : \iota.True)\ (\lambda X1 : \iota.k3\_tarski\ X1))$$