

# t30\_openlatt

(TMLBePx4KxHdARia8Yu7Q9DnfLooxtqtge)

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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  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_openlatt : \iota \Rightarrow \iota$  be given. Let  $k9\_setfam\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_openlatt : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v11\_lattices : \iota \Rightarrow o$  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  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  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  $v3\_filter\_0 : \iota \Rightarrow o$  be given. Let  $v13\_lattices : \iota \Rightarrow o$  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.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v11\_lattices X0) \wedge (l3\_lattices X0)))) \Rightarrow (\forall X1. (X1 \in k9\_openlatt X0) \Leftrightarrow (\exists X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \wedge (X1 = k1\_funct\_1 (k8\_openlatt X0) X2))) \quad (3)$$

Assume the following.

$$\forall X0. k9\_setfam\_1 X0 = k1\_zfmisc\_1 X0 \quad (4)$$

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k1\_zfmisc\_1 X0) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v11\_lattices X0) \wedge (l3\_lattices X0)))) \Rightarrow ((v1\_relat\_1 (k8\_openlatt X0)) \wedge (v1\_funct\_1 (k8\_openlatt X0))) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v11\_lattices X0) \wedge (l3\_lattices X0)))) \Rightarrow (\forall X1.((v1\_relat\_1 X1) \wedge (v1\_funct\_1 X1)) \Rightarrow ((X1 = k8\_openlatt X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((k9\_xtuple\_0 X1 = u1\_struct\_0 X0) \wedge (k1\_funct\_1 X1 X2 = ReplSep (toset (\lambda X3 : \iota. (\neg v1\_xboole\_0 X3) \wedge ((v19\_lattices X3 X0) \wedge (v20\_lattices X3 X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 X0)))))) (\lambda X3 : \iota. (X3 \in k7\_openlatt X0) \wedge (X2 \in X3)) (\lambda X3 : \iota. X3)))))) \quad (7) \end{aligned}$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \quad (8)$$

Assume the following.

$$\forall X0. (l3\_lattices X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (v3\_filter\_0 X0))) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (v11\_lattices X0)))) \quad (9)$$

Assume the following.

$$\forall X0. (l3\_lattices X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (v1\_lattice2 X0))) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v13\_lattices X0) \wedge (v3\_filter\_0 X0)))))) \quad (10)$$

**Theorem 1**

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v7\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge ((v1\_lattice2 X0) \wedge (l3\_lattices X0)))))) \Rightarrow (r1\_tarski (k9\_openlatt X0) (k9\_setfam\_1 (k7\_openlatt X0)))$$