

t29_openlatt

(TMdtXqEzu7686DoTYzX822d5yWqLt1mCceo)

October 27, 2020

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 $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k15_openlatt : \iota \Rightarrow \iota$ be given. Let $k16_openlatt : \iota \Rightarrow \iota$ be given. Let $k5_lattices : \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v19_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v13_lattices : \iota \Rightarrow o$ be given. Let $k1_filter_0 : \iota \Rightarrow \iota$ be given. Let $v11_lattices : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_openlatt : \iota \Rightarrow \iota$ be given. Let $v2_filter_0 : \iota \Rightarrow \iota \Rightarrow o$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $v3_filter_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X0 X1) \Rightarrow ((v1_xboole_0 X1) \vee (X0 \in X1)) \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v13_lattices X0) \wedge (l3_lattices X0)))) \wedge (k5_lattices X0 \in X1)) \Rightarrow ((X1 = k1_filter_0 X0) \wedge (X1 = u1_struct_0 X0)))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v11_lattices \\ X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ X0)) \Rightarrow (\forall X2.(X2 \in k1_funct_1 (k8_openlatt X0) X1) \Leftrightarrow (\exists X3. \\ ((\neg v1_xboole_0 X3) \wedge ((v19_lattices X3 X0) \wedge ((v20_lattices X3 X0) \wedge \\ (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0)))))) \wedge ((X3 = X2) \wedge \\ ((X3 \neq u1_struct_0 X0) \wedge ((v2_filter_0 X3 X0) \wedge (X1 \in X3))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\ (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\ (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\ X1 X2 X3 = k1_funct_1 X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v11_lattices \\ X0) \wedge (l3_lattices X0)))) \Rightarrow (k16_openlatt X0 = k8_openlatt X0) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v11_lattices \\ X0) \wedge (l3_lattices X0)))) \Rightarrow ((v1_funct_1 (k8_openlatt X0)) \wedge ((v1_funct_2 \\ (k8_openlatt X0) (u1_struct_0 X0) (u1_struct_0 (k15_openlatt \\ X0))) \wedge (v3_funct_2 (k8_openlatt X0) (u1_struct_0 X0) (u1_struct_0 \\ (k15_openlatt X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.\exists X1.m1_subset_1 X1 X0 \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ (l3_lattices X0))) \wedge ((\neg v2_struct_0 X1) \wedge ((v10_lattices X1) \wedge \\ (l3_lattices X1)))) \Rightarrow (\forall X2.(m1_lattice4 X2 X0 X1) \Rightarrow ((v1_funct_1 \\ X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\ X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1))))))) \end{aligned} \quad (9)$$

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.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ X0))) \Rightarrow ((\neg v1_xboole_0 (k1_filter_0 X0)) \wedge ((v19_lattices (k1_filter_0 \\ X0) X0) \wedge ((v20_lattices (k1_filter_0 X0) X0) \wedge (m1_subset_1 (k1_filter_0 \\ X0) (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v11_lattices \\ X0) \wedge (l3_lattices X0)))) \Rightarrow (m1_lattice4 (k16_openlatt X0) X0 (k15_openlatt \\ X0)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v11_lattices \\ X0) \wedge (l3_lattices X0)))) \Rightarrow ((\neg v2_struct_0 (k15_openlatt X0)) \wedge \\ ((v10_lattices (k15_openlatt X0)) \wedge (l3_lattices (k15_openlatt \\ X0)))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ X0))) \Rightarrow (k1_filter_0 X0 = u1_struct_0 X0) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_lattices X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v10_lattices \\ X0) \wedge (v3_filter_0 X0))) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ (v11_lattices X0)))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} \forall X0.(l3_lattices X0) \Rightarrow (((\neg v2_struct_0 X0) \wedge ((v10_lattices \\ X0) \wedge (v1_lattice2 X0))) \Rightarrow ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ ((v13_lattices X0) \wedge (v3_filter_0 X0)))))) \end{aligned} \quad (17)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge ((\neg v7_struct_0 X0) \wedge ((v10_lattices \\ X0) \wedge ((v1_lattice2 X0) \wedge (l3_lattices X0)))))) \Rightarrow (k3_funct_2 (u1_struct_0 \\ X0) (u1_struct_0 (k15_openlatt X0)) (k16_openlatt X0) (k5_lattices \\ X0) = k1_xboole_0) \end{aligned}$$