

t12_openlatt

(TMTPc7So6mv8i7jU3t9ehvw9tYCbwqqzJmB)

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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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $v1_xboole_0 : \iota \Rightarrow o$ 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 $v2_filter_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_openlatt : \iota \Rightarrow \iota$ 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. Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v11_lattices \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge ((v19_lattices \\ & X1 X0) \wedge ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X1 \in \\ & k1_funct_1 (k8_openlatt X0) X2) \Leftrightarrow ((X1 \in k7_openlatt X0) \wedge (X2 \in X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v11_lattices \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge ((v19_lattices \\ & X1 X0) \wedge ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow ((X1 \in k7_openlatt X0) \Leftrightarrow ((X1 \neq u1_struct_0 X0) \wedge (v2_filter_0 \\ & X1 X0)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v11_lattices \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow ((v1_relat_1 (k8_openlatt X0)) \wedge (v1_funct_1 \\ & (k8_openlatt X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v11_lattices \\
& X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.((v1_relat_1 X1) \wedge (v1_funct_1 \\
& X1)) \Rightarrow ((X1 = k8_openlatt X0) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 \\
& X0)) \Rightarrow ((k9_xtuple_0 X1 = u1_struct_0 X0) \wedge (k1_funct_1 X1 X2 = ReplSep \\
& (toset (\lambda X3 : \iota. (\neg v1_xboole_0 X3) \wedge ((v19_lattices X3 X0) \wedge \\
& ((v20_lattices X3 X0) \wedge (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 \\
& X0)))))))) (\lambda X3 : \iota. (X3 \in k7_openlatt X0) \wedge (X2 \in X3)) (\lambda X3 : \\
& \iota. X3))))))
\end{aligned} \tag{5}$$

Theorem 1

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