

t32_lattice4 (TMHUR- GaAy9jrHinFTEQ5Y7jbNiVvXACMxs4)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v17_lattices : \iota \Rightarrow o$ 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 $m2_lattice4 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_lattices : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k7_lattices : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices \\ X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k7_lattices \\ X0 (k4_lattices X0 X1 X2) = k3_lattices X0 (k7_lattices X0 X1) (k7_lattices \\ X0 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\ ((v17_lattices X0) \wedge (l3_lattices X0)))) \wedge (m1_subset_1 X1 (u1_struct_0 \\ X0))) \Rightarrow (k7_lattices X0 (k7_lattices X0 X1) = X1) \quad (3)$$

Assume the following.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices \\ X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m2_lattice4 X1 X0) \Rightarrow ((\neg \\ v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge (l3_lattices X0)) \wedge \\ (m1_subset_1 X1 (u1_struct_0 X0))) \Rightarrow (m1_subset_1 (k7_lattices \\ X0 X1) (u1_struct_0 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices \\
& X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 \\
& X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow ((m2_lattice4 X1 X0) \Leftrightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow (((X2 \in X1) \wedge (X3 \in X1)) \Rightarrow ((k4_lattices X0 X2 X3 \in \\
& X1) \wedge (k7_lattices X0 X2 \in X1))))))
\end{aligned} \tag{6}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices \\
& X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
& (m2_lattice4 X3 X0) \Rightarrow (((X1 \in X3) \wedge (X2 \in X3)) \Rightarrow (k3_lattices X0 X1 X2 \in \\
& X3))))))
\end{aligned}$$