

t37_lattice4 (TMTMcRdyWe- CupRb6C2aEZMdj3hon24Uutbz)

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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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_lattice4 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_lattices : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k4_filter_0 X0 X1 X2 = k3_lattices X0 (k7_lattices X0 X1) X2))) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v2_struct_0 X1) \wedge ((v10_lattices X1) \wedge ((v17_lattices X1) \wedge (l3_lattices X1)))) \Rightarrow (\forall X2. ((\neg v1_xboole_0 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X1)))) \Rightarrow ((X0 \in k4_lattice4 X1 X2) \Leftrightarrow (\exists X3. (m1_subset_1 X3 (u1_struct_0 X1)) \wedge (\exists X4. (m1_subset_1 X4 (u1_struct_0 X1)) \wedge ((X0 = k4_filter_0 X1 X3 X4) \wedge ((X3 \in X2) \wedge (X4 \in X2)))))))) \quad (3)$$

Theorem 1

$$\forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. ((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 X0)))) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X2 \in k4_lattice4 X0 X1) \Leftrightarrow (\exists X3. (m1_subset_1 X3 (u1_struct_0 X0)) \wedge (\exists X4. (m1_subset_1 X4 (u1_struct_0 X0)) \wedge ((X2 = k3_lattices X0 (k7_lattices X0 X3) X4) \wedge ((X3 \in X1) \wedge (X4 \in X1))))))))))$$