

t26_lattice4 (TMPpQjELopfnGAR- LXdMrZ8gnTVKu84RkyBS)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v15_lattices : \iota \Rightarrow o$ be given. Let $v16_lattices : \iota \Rightarrow o$ be given. Let $l3_lattices : \iota \Rightarrow o$ be given. Let $v3_filter_0 : \iota \Rightarrow o$ be given. Let $m1_lattice4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $v6_lattices : \iota \Rightarrow o$ be given. Let $k3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_lattices : \iota \Rightarrow o$ be given. Let $v5_lattices : \iota \Rightarrow o$ be given. Let $v7_lattices : \iota \Rightarrow o$ be given. Let $v8_lattices : \iota \Rightarrow o$ be given. Let $v9_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
 & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v10_lattices X1) \wedge (l3_lattices \\
 & X1))) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
 & (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_lattice4 X4 \\
 & X0 X1) \Rightarrow ((r3_lattices X0 X2 X3) \Rightarrow (r3_lattices X1 (k3_funct_2 (u1_struct_0 \\
 & X0) (u1_struct_0 X1) X4 X2) (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 \\
 & X1) X4 X3)))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. (((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge \\
 & (l3_lattices X0))) \wedge ((\neg v2_struct_0 X1) \wedge ((v10_lattices X1) \wedge \\
 & (l3_lattices X1)))) \Rightarrow (\forall X2.(m1_lattice4 X2 X0 X1) \Rightarrow ((v1_funct_1 \\
 & X2) \wedge ((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1)) \wedge (m1_subset_1 \\
 & X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1)))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(l3_lattices X0) \Rightarrow ((l1_lattices X0) \wedge (l2_lattices X0)) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v6_lattices X0)\wedge(l1_lattices X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(m1_subset_1 (k4_lattices X0 X1 X2) (u1_struct_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(m1_subset_1 (k4_filter_0 X0 X1 X2) (u1_struct_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow(((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v3_filter_0 X0)\wedge(l3_lattices X0))))\Rightarrow(\forall X3.(m1_subset_1 X3 (u1_struct_0 X0))\Rightarrow((X3 = k4_filter_0 X0 X1 X2)\Leftrightarrow((r3_lattices X0 (k4_lattices X0 X1 X3) X2)\wedge(\forall X4.(m1_subset_1 X4 (u1_struct_0 X0))\Rightarrow((r3_lattices X0 (k4_lattices X0 X1 X4) X2)\Rightarrow(r3_lattices X0 X4 X3)))))))))) \quad (6)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices X0)))\Rightarrow(\forall X1.((\neg v2_struct_0 X1)\wedge((v10_lattices X1)\wedge(l3_lattices X1)))\Rightarrow(\forall X2.((v1_funct_1 X2)\wedge((v1_funct_2 X2 (u1_struct_0 X0) (u1_struct_0 X1))\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (u1_struct_0 X1))))))\Rightarrow((m1_lattice4 X2 X0 X1)\Leftrightarrow(\forall X3.(m1_subset_1 X3 (u1_struct_0 X0))\Rightarrow(\forall X4.(m1_subset_1 X4 (u1_struct_0 X0))\Rightarrow((k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X1) X2 (k3_lattices X0 X3 X4) = k3_lattices X1 (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X1) X2 X3) (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X1) X2 X4))\wedge(k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X1) X2 (k4_lattices X0 X3 X4) = k4_lattices X1 (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X1) X2 X3) (k3_funct_2 (u1_struct_0 X0) (u1_struct_0 X1) X2 X4)))))))))) \quad (7)$$

Assume the following.

$$\forall X0.(l3_lattices X0)\Rightarrow(((\neg v2_struct_0 X0)\wedge(v10_lattices X0))\Rightarrow(((\neg v2_struct_0 X0)\wedge((v4_lattices X0)\wedge((v5_lattices X0)\wedge((v6_lattices X0)\wedge((v7_lattices X0)\wedge((v8_lattices X0)\wedge(v9_lattices X0)))))))))) \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v15_lattices \\ & \quad X0) \wedge ((v16_lattices X0) \wedge (l3_lattices X0)))))) \Rightarrow (\forall X1.((\\ & \neg v2_struct_0 X1) \wedge ((v10_lattices X1) \wedge ((v3_filter_0 X1) \wedge (l3_lattices \\ & \quad X1)))))) \Rightarrow (\forall X2.(m1_lattice4 X2 X1 X0) \Rightarrow (\forall X3.(m1_subset_1 \\ & \quad X3 (u1_struct_0 X1)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 \\ & \quad X1)) \Rightarrow (r3_lattices X0 (k4_lattices X0 (k3_funct_2 (u1_struct_0 \\ & \quad X1) (u1_struct_0 X0) X2 X3) (k3_funct_2 (u1_struct_0 X1) (u1_struct_0 \\ & \quad X0) X2 (k4_filter_0 X1 X3 X4)) (k3_funct_2 (u1_struct_0 X1) (u1_struct_0 \\ & \quad X0) X2 X4)))))) \end{aligned}$$