

t29_lattice2

(TMT1zMJyyKjH9B5u9eSvBuvNDXHNHC958rh)

October 27, 2020

Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ 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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k5_finsub_1 : \iota \Rightarrow \iota$ 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 $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_lattice2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_filter_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v19_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
 & \quad X0))) \Rightarrow (\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.(m1_subset_1 \\
 & \quad X2 X1) \Rightarrow (\forall X3.(m1_subset_1 X3 (k5_finsub_1 X1)) \Rightarrow (\forall X4. \\
 & \quad ((v1_funct_1 X4) \wedge ((v1_funct_2 X4 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 \\
 & \quad X4 (k1_zfmisc_1 (k2_zfmisc_1 X1 (u1_struct_0 X0)))))) \Rightarrow ((X2 \in X3) \Rightarrow \\
 & \quad (r3_lattices X0 (k3_funct_2 X1 (u1_struct_0 X0) X4 X2) (k2_lattice2 \\
 & \quad \quad X1 X0 X3 X4)))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
 & \quad X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
 & \quad (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((X1 \in k2_filter_0 X0 X2) \Leftrightarrow (r3_lattices \\
 & \quad \quad X0 X2 X1))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\
 & \quad (((v1_funct_1 X2) \wedge ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
 & \quad \quad (k2_zfmisc_1 X0 X1)))))) \wedge (m1_subset_1 X3 X0))) \Rightarrow (k3_funct_2 X0 \\
 & \quad \quad X1 X2 X3 = k1_funct_1 X2 X3)
 \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((v1_funct_1 X2)\wedge((v1_funct_2 X2 X0 X1)\wedge(m1_subset_1 X2 (k1_zfmisc_1 \\ & (k2_zfmisc_1 X0 X1))))))\wedge(m1_subset_1 X3 X0))\Rightarrow(m1_subset_1 (\\ & k3_funct_2 X0 X1 X2 X3) X1) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((\neg v2_struct_0 X1)\wedge((v10_lattices X1)\wedge(l3_lattices X1)))\wedge \\ & ((m1_subset_1 X2 (k5_finsub_1 X0))\wedge((v1_funct_1 X3)\wedge((v1_funct_2 \\ & X3 X0 (u1_struct_0 X1))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 (u1_struct_0 X1))))))))))\Rightarrow(m1_subset_1 (k2_lattice2 X0 X1 X2 \\ & X3) (u1_struct_0 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge \\ & (l3_lattices X0)))\wedge(m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow((\neg v1_xboole_0 \\ & (k2_filter_0 X0 X1))\wedge((v19_lattices (k2_filter_0 X0 X1) X0)\wedge \\ & (v20_lattices (k2_filter_0 X0 X1) X0)\wedge(m1_subset_1 (k2_filter_0 \\ & X0 X1) (k1_zfmisc_1 (u1_struct_0 X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices \\ & X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))\Rightarrow((v19_lattices X1 X0)\Leftrightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 \\ & X0))\Rightarrow(\forall X3.(m1_subset_1 X3 (u1_struct_0 X0))\Rightarrow(((r3_lattices \\ & X0 X2 X3)\wedge(X2 \in X1))\Rightarrow(X3 \in X1)))))) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.(((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices \\ & X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2. \\ & (\neg v1_xboole_0 X2)\Rightarrow(\forall X3.(m1_subset_1 X3 (k5_finsub_1 X2))\Rightarrow \\ & (\forall X4.((v1_funct_1 X4)\wedge((v1_funct_2 X4 X2 (u1_struct_0 \\ & X0))\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X2 (u1_struct_0 \\ & X0))))))\Rightarrow((\exists X5.(m1_subset_1 X5 X2)\wedge((X5 \in X3)\wedge(r3_lattices \\ & X0 X1 (k3_funct_2 X2 (u1_struct_0 X0) X4 X5))))\Rightarrow(r3_lattices X0 \\ & X1 (k2_lattice2 X2 X0 X3 X4)))))) \end{aligned}$$