

t33_lattice2

(TMNF4qf1nQmWPdWQy754PKXSPFADGsVemuS)

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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 $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ 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 $u1_struct_0 : \iota \Rightarrow \iota$ 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 $k3_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k2_lattice2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
 & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
 & (\neg v1_xboole_0 X2) \Rightarrow (\forall X3.(m1_subset_1 X3 (k5_finsub_1 X2)) \Rightarrow \\
 & (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 X2 (u1_struct_0 \\
 & X0)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X2 (u1_struct_0 \\
 & X0)))))) \Rightarrow ((\forall X5.(m1_subset_1 X5 X2) \Rightarrow ((X5 \in X3) \Rightarrow (r3_lattices \\
 & X0 (k3_funct_2 X2 (u1_struct_0 X0) X4 X5) X1))) \Rightarrow ((X3 = k1_xboole_0) \vee \\
 & (r3_lattices X0 (k2_lattice2 X2 X0 X3 X4) X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
 & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
 & (\neg v1_xboole_0 X2) \Rightarrow (\forall X3.(m1_subset_1 X3 (k5_finsub_1 X2)) \Rightarrow \\
 & (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 X2 (u1_struct_0 \\
 & X0)) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 X2 (u1_struct_0 \\
 & X0)))))) \Rightarrow ((\exists X5.(m1_subset_1 X5 X2) \wedge ((X5 \in X3) \wedge (r3_lattices \\
 & X0 X1 (k3_funct_2 X2 (u1_struct_0 X0) X4 X5)))) \Rightarrow (r3_lattices X0 \\
 & X1 (k2_lattice2 X2 X0 X3 X4))))))
 \end{aligned} \tag{2}$$

Assume the following.

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

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & (((\neg v2_struct_0 X1)\wedge((v10_lattices X1)\wedge(l3_lattices X1)))\wedge \\ & ((m1_subset_1 X2 (k5_finsub_1 X0))\wedge((v1_funct_1 X3)\wedge((v1_funct_2 \\ & X3 X0 (u1_struct_0 X1))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 (u1_struct_0 X1))))))))))\Rightarrow(m1_subset_1 (k2_lattice2 X0 X1 X2 \\ & X3) (u1_struct_0 X1)) \end{aligned} \quad (4)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices \\ & X0)))\Rightarrow(\forall X1.(\neg v1_xboole_0 X1)\Rightarrow(\forall X2.(m1_subset_1 \\ & X2 (k5_finsub_1 X1))\Rightarrow(\forall X3.((v1_funct_1 X3)\wedge((v1_funct_2 \\ & X3 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X1 (u1_struct_0 X0))))))\Rightarrow(\forall X4.((v1_funct_1 X4)\wedge((v1_funct_2 \\ & X4 X1 (u1_struct_0 X0))\wedge(m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X1 (u1_struct_0 X0))))))\Rightarrow((\forall X5.(m1_subset_1 X5 X1)\Rightarrow((\\ & X5 \in X2)\Rightarrow(r3_lattices X0 (k3_funct_2 X1 (u1_struct_0 X0) X3 X5) (\\ & k3_funct_2 X1 (u1_struct_0 X0) X4 X5))))\Rightarrow((X2 = k1_xboole_0)\vee(\\ & r3_lattices X0 (k2_lattice2 X1 X0 X2 X3) (k2_lattice2 X1 X0 X2 X4))))))))) \end{aligned}$$