

t15_filter_2

(TMJmSz8zkNTrD65QBdBjzvsf3RGYh8PnWbn)

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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 $g3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $u2_lattices : \iota \Rightarrow \iota$ be given. Let $u1_lattices : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v19_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v20_lattices : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_lattices : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $k2_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $k5_binop_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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.

$$\begin{aligned}
 & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
 & X0))) \Rightarrow (\forall X1.((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\
 & (u1_struct_0 X0)))) \Rightarrow (((\neg v1_xboole_0 X1) \wedge ((v19_lattices X1 X0) \wedge \\
 & ((v20_lattices X1 X0) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (u1_struct_0 \\
 & X0)))))) \Leftrightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. \\
 & (m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow (((X2 \in X1) \wedge (X3 \in X1)) \Leftrightarrow (k4_lattices \\
 & X0 X2 X3 \in X1))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v6_lattices \\
 & X0) \wedge (l1_lattices X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\
 & m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k4_lattices X0 X1 X2 = k2_lattices \\
 & X0 X1 X2)
 \end{aligned}
 \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1_funct_1 X1)\wedge((v1_funct_2 \\ & X1 (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) X0))))\wedge((v1_funct_1 X2)\wedge((v1_funct_2 X2 \\ & (k2_zfmisc_1 X0 X0) X0)\wedge(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 X0 X0) X0))))))\Rightarrow(\forall X3.\forall X4.\forall X5. \\ & (g3_lattices X0 X1 X2 = g3_lattices X3 X4 X5)\Rightarrow((X0 = X3)\wedge((X1 = X4)\wedge \\ & (X2 = X5)))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l2_lattices X0)\Rightarrow((v1_funct_1 (u2_lattices X0))\wedge \\ & ((v1_funct_2 (u2_lattices X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0))\wedge(m1_subset_1 (u2_lattices \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1_lattices X0)\Rightarrow((v1_funct_1 (u1_lattices X0))\wedge \\ & ((v1_funct_2 (u1_lattices X0) (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0))\wedge(m1_subset_1 (u1_lattices \\ & X0) (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 (u1_struct_0 X0) (\\ & u1_struct_0 X0)) (u1_struct_0 X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(l3_lattices X0)\Rightarrow((l1_lattices X0)\wedge(l2_lattices X0)) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0)\wedge(l1_lattices X0))\Rightarrow(\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2.(m1_subset_1 X2 \\ & (u1_struct_0 X0))\Rightarrow(k2_lattices X0 X1 X2 = k5_binop_1 (u1_struct_0 \\ & X0) (u1_lattices X0) X1 X2))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l3_lattices X0)\Rightarrow(((\neg v2_struct_0 X0)\wedge(v10_lattices \\ & X0))\Rightarrow((\neg v2_struct_0 X0)\wedge((v4_lattices X0)\wedge((v5_lattices X0)\wedge \\ & ((v6_lattices X0)\wedge((v7_lattices X0)\wedge((v8_lattices X0)\wedge(v9_lattices \\ & X0)))))))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\ & X0))) \Rightarrow (\forall X1.((\neg v2_struct_0 X1) \wedge ((v10_lattices X1) \wedge (l3_lattices \\ & X1))) \Rightarrow ((g3_lattices (u1_struct_0 X0) (u2_lattices X0) (u1_lattices \\ & X0) = g3_lattices (u1_struct_0 X1) (u2_lattices X1) (u1_lattices \\ & X1))) \Rightarrow (\forall X2.((\neg v1_xboole_0 X2) \wedge ((v19_lattices X2 X0) \wedge \\ & (v20_lattices X2 X0) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 \\ & X0)))))) \Rightarrow ((\neg v1_xboole_0 X2) \wedge ((v19_lattices X2 X1) \wedge ((v20_lattices \\ & X2 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (u1_struct_0 X1)))))))))) \end{aligned}$$