

t73_filter_0 (TMZgPHvCX- TXWA5hhRjoaLzS72rD4XDNtfkn)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v4_lattices : \iota \Rightarrow o$ be given. Let $v6_lattices : \iota \Rightarrow o$ 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. 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 $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $r1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v4_lattices X0) \wedge (l2_lattices \\ & X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (((r1_lattices X0 X1 X2) \wedge (r1_lattices \\ & X0 X2 X1)) \Rightarrow (X1 = X2)))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_lattices X0) \wedge ((v7_lattices \\ & X0) \wedge ((v8_lattices X0) \wedge ((v9_lattices X0) \wedge (l3_lattices X0)))))) \Rightarrow \\ & (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (m1_subset_1 \\ & X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 (u1_struct_0 \\ & X0)) \Rightarrow (((r3_lattices X0 X1 X2) \wedge (r3_lattices X0 X1 X3)) \Rightarrow (r3_lattices \\ & X0 X1 (k4_lattices X0 X2 X3)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2_struct_0 X0) \wedge ((v6_lattices X0) \wedge ((v8_lattices \\ & X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ & X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (r1_lattices \\ & X0 (k4_lattices X0 X1 X2) X1))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2_struct_0 X0) \wedge ((v6_lattices \\ & X0) \wedge ((v8_lattices X0) \wedge ((v9_lattices X0) \wedge (l3_lattices X0)))))) \wedge \\ & ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\ & X0))) \Rightarrow ((r3_lattices X0 X1 X2) \Leftrightarrow (r1_lattices X0 X1 X2)) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(l3_lattices\ X0)\Rightarrow((l1_lattices\ X0)\wedge(l2_lattices\ X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0)\wedge((v6_lattices \\ X0)\wedge(l1_lattices\ X0)))\wedge((m1_subset_1\ X1\ (u1_struct_0\ X0))\wedge \\ m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow(m1_subset_1\ (k4_lattices \\ X0\ X1\ X2)\ (u1_struct_0\ X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0)\wedge((v6_lattices \\ X0)\wedge(l1_lattices\ X0)))\wedge((m1_subset_1\ X1\ (u1_struct_0\ X0))\wedge \\ m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow(k4_lattices\ X0\ X1\ X2 = k4_lattices \\ X0\ X2\ X1) \end{aligned} \quad (7)$$

Theorem 1

$$\begin{aligned} \forall X0.(((\neg v2_struct_0\ X0)\wedge((v4_lattices\ X0)\wedge((v6_lattices \\ X0)\wedge((v7_lattices\ X0)\wedge((v8_lattices\ X0)\wedge((v9_lattices\ X0)\wedge \\ (l3_lattices\ X0))))))))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0 \\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ X0))\Rightarrow(\forall X3. \\ (m1_subset_1\ X3\ (u1_struct_0\ X0))\Rightarrow(((r3_lattices\ X0\ X3\ X1)\wedge((\\ r3_lattices\ X0\ X3\ X2)\wedge(\forall X4.(m1_subset_1\ X4\ (u1_struct_0 \\ X0))\Rightarrow(((r3_lattices\ X0\ X4\ X1)\wedge(r3_lattices\ X0\ X4\ X2))\Rightarrow(r3_lattices \\ X0\ X4\ X3))))))\Rightarrow(X3 = k4_lattices\ X0\ X1\ X2)))))) \end{aligned}$$