

t34_boolealg
(TMUcASuJB2S9D3Tft3ihsS1MKeRswyNs57G)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v17_lattices : \iota \Rightarrow o$ 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 $r1_boolealg : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_boolealg : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_lattices : \iota \Rightarrow \iota$ be given. Let $r3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7_lattices : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge (l3_lattices \\
& X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\
& (u1_struct_0 X0)) \Rightarrow ((r1_boolealg X0 X1 (k4_lattices X0 X2 X3)) \Leftrightarrow \\
& ((r3_lattices X0 X1 X2) \wedge ((r3_lattices X0 X1 X3) \wedge (\forall X4. (m1_subset_1 \\
& X4 (u1_struct_0 X0)) \Rightarrow (((r3_lattices X0 X4 X2) \wedge (r3_lattices X0 \\
& X4 X3)) \Rightarrow (r3_lattices X0 X4 X1))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices \\
& X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((r3_lattices \\
& X0 X1 X2) \Leftrightarrow (k4_lattices X0 X1 (k7_lattices X0 X2) = k5_lattices X0))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v17_lattices \\
& X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\
& X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((k4_lattices \\
& X0 X1 X2 = k5_lattices X0) \Leftrightarrow (r3_lattices X0 X1 (k7_lattices X0 X2))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(v10_lattices \\ X0)\wedge(l3_lattices X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(\\ m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow((r1_boolealg X0 X1 X2)\Leftrightarrow(X1 = \\ X2)) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2_struct_0 X0)\wedge(l3_lattices X0))\wedge \\ (m1_subset_1 X1 (u1_struct_0 X0)))\Rightarrow(m1_subset_1 (k7_lattices \\ X0 X1) (u1_struct_0 X0)) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2_struct_0 X0)\wedge(v10_lattices \\ X0)\wedge(l3_lattices X0)))\wedge((m1_subset_1 X1 (u1_struct_0 X0))\wedge(\\ m1_subset_1 X2 (u1_struct_0 X0))))\Rightarrow(m1_subset_1 (k1_boolealg \\ X0 X1 X2) (u1_struct_0 X0)) \end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices \\ X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow((r1_boolealg X0 X1 X2)\Leftrightarrow((r3_lattices \\ X0 X1 X2)\wedge(r3_lattices X0 X2 X1)))))) \end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge(l3_lattices \\ X0)))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 X0))\Rightarrow(\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow(k1_boolealg X0 X1 X2 = k4_lattices \\ X0 X1 (k7_lattices X0 X2)))))) \end{aligned} \tag{8}$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0)\wedge((v10_lattices X0)\wedge((v17_lattices \\ X0)\wedge(l3_lattices X0))))\Rightarrow(\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ X0))\Rightarrow(\forall X2.(m1_subset_1 X2 (u1_struct_0 X0))\Rightarrow(r1_boolealg \\ X0 (k4_lattices X0 (k1_boolealg X0 X1 X2) X2) (k5_lattices X0)))))) \end{aligned}$$