

t36_robins4

(TMU8UdYFZ93Gi8gPAKtQHc7oHYDw42Q2ctW)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v10_lattices : \iota \Rightarrow o$ be given. Let $v10_robins1 : \iota \Rightarrow o$ be given. Let $v8_robins3 : \iota \Rightarrow o$ be given. Let $v9_robins3 : \iota \Rightarrow o$ be given. Let $l4_robins1 : \iota \Rightarrow o$ be given. Let $v1_robins4 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k3_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_robins1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $r1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v6_lattices : \iota \Rightarrow o$ be given. Let $l1_lattices : \iota \Rightarrow o$ be given. Let $v4_lattices : \iota \Rightarrow o$ be given. Let $l2_lattices : \iota \Rightarrow o$ be given. Let $k1_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $l2_robins1 : \iota \Rightarrow o$ be given. Let $l1_robins1 : \iota \Rightarrow o$ be given. Let $v5_lattices : \iota \Rightarrow o$ be given. Let $v7_lattices : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v8_lattices X0) \wedge ((v9_lattices \\ &X0) \wedge (l3_lattices X0)))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 \\ &X0)) \Rightarrow (\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow ((r1_lattices \\ &X0 X1 X2) \Leftrightarrow (k2_lattices X0 X1 X2 = X1)))) \end{aligned} \quad (1)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (&((\neg v2_struct_0 X0) \wedge ((v4_lattices \\ &X0) \wedge (l2_lattices X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (\\ &m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (k3_lattices X0 X1 X2 = k1_lattices \\ &X0 X1 X2) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (l4_robins1 X0) \Rightarrow ((l2_robins1 X0) \wedge (l3_lattices X0)) \quad (4)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l2_robbins1\ X0)\Rightarrow((l2_lattices\ X0)\wedge(l1_robbins1\ X0)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2_struct_0\ X0)\wedge(l1_robbins1\ X0))\wedge(m1_subset_1\ X1\ (u1_struct_0\ X0)))\Rightarrow(m1_subset_1\ (k3_robbins1\ X0\ X1)\ (u1_struct_0\ X0)) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0)\wedge((v4_lattices\ X0)\wedge(l2_lattices\ X0)))\wedge((m1_subset_1\ X1\ (u1_struct_0\ X0))\wedge(m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow(m1_subset_1\ (k3_lattices\ X0\ X1\ X2)\ (u1_struct_0\ X0)) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2_struct_0\ X0)\wedge(l1_lattices\ X0))\wedge((m1_subset_1\ X1\ (u1_struct_0\ X0))\wedge(m1_subset_1\ X2\ (u1_struct_0\ X0))))\Rightarrow(m1_subset_1\ (k2_lattices\ X0\ X1\ X2)\ (u1_struct_0\ X0)) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0\ X0)\wedge(l3_lattices\ X0))\Rightarrow((v9_lattices\ X0)\Leftrightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ X0))\Rightarrow(k2_lattices\ X0\ X1\ (k1_lattices\ X0\ X1\ X2) = X1)))) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0\ X0)\wedge(l2_lattices\ X0))\Rightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ X0))\Rightarrow((r1_lattices\ X0\ X1\ X2)\Leftrightarrow(k1_lattices\ X0\ X1\ X2 = X2)))) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v2_struct_0\ X0)\wedge(l4_robbins1\ X0))\Rightarrow((v1_robbins4\ X0)\Leftrightarrow(\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0))\Rightarrow(\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ X0))\Rightarrow((r1_lattices\ X0\ X1\ X2)\Rightarrow(X2 = k1_lattices\ X0\ X1\ (k2_lattices\ X0\ (k3_robbins1\ X0\ X1)\ X2)))))) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (&((\neg v2_struct_0 X0) \wedge (v6_lattices \\ &X0) \wedge (l1_lattices X0))) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge \\ &m1_subset_1 X2 (u1_struct_0 X0))) \Rightarrow (k4_lattices X0 X1 X2 = k4_lattices \\ &X0 X2 X1) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0. (l3_lattices X0) \Rightarrow (&((\neg v2_struct_0 X0) \wedge (v10_lattices \\ &X0)) \Rightarrow ((\neg v2_struct_0 X0) \wedge (v4_lattices X0) \wedge (v5_lattices X0) \wedge \\ &(v6_lattices X0) \wedge (v7_lattices X0) \wedge (v8_lattices X0) \wedge (v9_lattices \\ &X0)))))) \end{aligned} \quad (14)$$

Theorem 1

$$\begin{aligned} \forall X0. (&(\neg v2_struct_0 X0) \wedge ((v10_lattices X0) \wedge ((v10_robbins1 \\ &X0) \wedge ((v8_robbins3 X0) \wedge (v9_robbins3 X0) \wedge (l4_robbins1 X0)))))) \Rightarrow \\ &((v1_robbins4 X0) \Leftrightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\ &(\forall X2. (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (k3_lattices X0 \\ &X1 X2 = k3_lattices X0 (k4_lattices X0 (k3_lattices X0 X1 X2) X1) (\\ &k4_lattices X0 (k3_lattices X0 X1 X2) (k3_robbins1 X0 X1)))))) \end{aligned}$$