

# t6\_robbins4 (TM- bCMP22B37iFxnNZpkSaCAVguEtUs6Ypz4Z)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v5\_lattices : \iota \Rightarrow o$  be given. Let  $v6\_lattices : \iota \Rightarrow o$  be given. Let  $v8\_lattices : \iota \Rightarrow o$  be given. Let  $v9\_lattices : \iota \Rightarrow o$  be given. Let  $v1\_robbins4 : \iota \Rightarrow o$  be given. Let  $l4\_robbins1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_robbins1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l3\_lattices : \iota \Rightarrow o$  be given. Let  $r1\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_lattices : \iota \Rightarrow o$  be given. Let  $k2\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_robbins1 : \iota \Rightarrow o$  be given. Let  $l2\_lattices : \iota \Rightarrow o$  be given. Let  $l1\_robbins1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v5\_lattices X0) \wedge ((v6\_lattices \\ & X0) \wedge ((v8\_lattices X0) \wedge ((v9\_lattices X0) \wedge (l3\_lattices X0)))))) \Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 X0)) \Rightarrow (r1\_lattices X0 X1 (k1\_lattices X0 X1 X2)))) \end{aligned} \quad (1)$$

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.

$$\forall X0.(l4\_robbins1 X0) \Rightarrow ((l2\_robbins1 X0) \wedge (l3\_lattices X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l3\_lattices X0) \Rightarrow ((l1\_lattices X0) \wedge (l2\_lattices X0)) \quad (4)$$

Assume the following.

$$\forall X0.(l2\_robbins1 X0) \Rightarrow ((l2\_lattices X0) \wedge (l1\_robbins1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge(l1\_robbins1 X0))\wedge(m1\_subset\_1 X1 (u1\_struct\_0 X0)))\Rightarrow(m1\_subset\_1 (k3\_robbins1 X0 X1) (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0)\wedge(l2\_lattices X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(m1\_subset\_1 (k1\_lattices X0 X1 X2) (u1\_struct\_0 X0)) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l4\_robbins1 X0))\Rightarrow((v1\_robbins4 X0)\Leftrightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow((r1\_lattices X0 X1 X2)\Rightarrow(X2 = k1\_lattices X0 X1 (k2\_lattices X0 (k3\_robbins1 X0 X1) X2)))))) \quad (8)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v5\_lattices X0)\wedge((v6\_lattices X0)\wedge((v8\_lattices X0)\wedge((v9\_lattices X0)\wedge((v1\_robbins4 X0)\wedge(l4\_robbins1 X0))))))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(k1\_lattices X0 X1 (k4\_lattices X0 (k3\_robbins1 X0 X1) (k1\_lattices X0 X1 X2)) = k1\_lattices X0 X1 X2)))$$