

# t30\_robbins1 (TMaWfaJYTWCx- NatxVpVZY6EzreNFTH8EU2F)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v4\_lattices : \iota \Rightarrow o$  be given. Let  $v5\_lattices : \iota \Rightarrow o$  be given. Let  $v6\_robbins1 : \iota \Rightarrow o$  be given. Let  $l2\_robbins1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k6\_robbins1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_robbins1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_robbins1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_robbins1 : \iota \Rightarrow \iota$  be given. Let  $k6\_lattices : \iota \Rightarrow \iota$  be given. Let  $l2\_lattices : \iota \Rightarrow o$  be given. Let  $l1\_robbins1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices X0) \wedge ((v5\_lattices \\ & X0) \wedge ((v6\_robbins1 X0) \wedge (l2\_robbins1 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (k6\_robbins1 \\ & X0 (k5\_robbins1 X0 (k6\_robbins1 X0 X1 X2) (k6\_robbins1 X0 X1 X3)) \\ & (k3\_robbins1 X0 (k6\_robbins1 X0 X1 (k5\_robbins1 X0 X2 X3))) = k7\_robbins1 \\ & X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices X0) \wedge ((v5\_lattices \\ & X0) \wedge ((v6\_robbins1 X0) \wedge (l2\_robbins1 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (k5\_robbins1 \\ & X0 (k5\_robbins1 X0 (k6\_robbins1 X0 X1 X2) (k6\_robbins1 X0 X1 X3)) \\ & (k3\_robbins1 X0 (k6\_robbins1 X0 X1 (k5\_robbins1 X0 X2 X3))) = k6\_lattices \\ & X0)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices X0) \wedge ((v5\_lattices \\ & X0) \wedge ((v6\_robbins1 X0) \wedge (l2\_robbins1 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow (((k5\_robbins1 X0 X1 X2 = k6\_lattices X0) \wedge (k6\_robbins1 X0 \\ & X1 X2 = k7\_robbins1 X0)) \Rightarrow (k3\_robbins1 X0 X1 = X2)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices X0) \wedge ((v5\_lattices \\ X0) \wedge ((v6\_robbins1 X0) \wedge (l2\_robbins1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0)) \Rightarrow ((k3\_robbins1 X0 X1 = k3\_robbins1 X0 X2) \Rightarrow (X1 = X2)))) \end{aligned} \quad (4)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices \\ X0) \wedge ((v5\_lattices X0) \wedge (l2\_robbins1 X0)))) \wedge ((m1\_subset\_1 X1 \\ (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 \\ (k6\_robbins1 X0 X1 X2) (u1\_struct\_0 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices \\ X0) \wedge (l2\_robbins1 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge \\ m1\_subset\_1 X2 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k5\_robbins1 \\ X0 X1 X2) (u1\_struct\_0 X0)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2\_struct\_0 X0) \wedge (l1\_robbins1 X0)) \wedge \\ (m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k3\_robbins1 \\ X0 X1) (u1\_struct\_0 X0)) \end{aligned} \quad (8)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices X0) \wedge ((v5\_lattices \\ X0) \wedge ((v6\_robbins1 X0) \wedge (l2\_robbins1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (k6\_robbins1 \\ X0 X1 (k5\_robbins1 X0 X2 X3) = k5\_robbins1 X0 (k6\_robbins1 X0 X1 X2) \\ (k6\_robbins1 X0 X1 X3)))))) \end{aligned}$$