

# t35\_robbins1

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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  $k7\_robbins1 : \iota \Rightarrow \iota$  be given. Let  $k5\_lattices : \iota \Rightarrow \iota$  be given. Let  $k8\_robbins1 : \iota \Rightarrow \iota$  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  $k4\_robbins1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k5\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_robbins1 : \iota \Rightarrow o$  be given. Let  $v13\_lattices : \iota \Rightarrow o$  be given. Let  $l1\_lattices : \iota \Rightarrow o$  be given. Let  $u1\_lattices : \iota \Rightarrow \iota$  be given. Let  $l4\_robbins1 : \iota \Rightarrow o$  be given. Let  $l3\_lattices : \iota \Rightarrow o$  be given. Let  $l2\_lattices : \iota \Rightarrow o$  be given. Let  $v7\_robbins1 : \iota \Rightarrow o$  be given. Let  $k2\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_lattices : \iota \Rightarrow \iota$  be given. Let  $u1\_robbins1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge (v4\_lattices \\ & X0) \wedge (v5\_lattices X0) \wedge (l2\_robbins1 X0))) \wedge ((m1\_subset\_1 X1 \\ & (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0))) \Rightarrow (k6\_robbins1 \\ & X0 X1 X2 = k4\_robbins1 X0 X1 X2) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((v1\_funct\_1 X1) \wedge \\ & ((v1\_funct\_2 X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X0) X0)))) \wedge ((m1\_subset\_1 X2 X0) \wedge \\ & (m1\_subset\_1 X3 X0))) \Rightarrow (k5\_binop\_1 X0 X1 X2 X3 = k1\_binop\_1 X1 X2 X3) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge (l2\_robbins1 X0)) \Rightarrow ((\neg v2\_struct\_0 (k8\_robbins1 X0)) \wedge (v4\_robbins1 (k8\_robbins1 X0))) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices X0) \wedge ((v5\_lattices X0) \wedge ((v6\_robbins1 X0) \wedge (l2\_robbins1 X0)))))) \Rightarrow ((v13\_lattices (k8\_robbins1 X0)) \wedge (v4\_robbins1 (k8\_robbins1 X0))) \quad (4)$$

Assume the following.

$$\forall X0.(l1\_lattices X0) \Rightarrow ((v1\_funct\_1 (u1\_lattices X0)) \wedge ((v1\_funct\_2 (u1\_lattices X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 (u1\_lattices X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \quad (5)$$

Assume the following.

$$\forall X0.(l4\_robbins1 X0) \Rightarrow ((l2\_robbins1 X0) \wedge (l3\_lattices X0)) \quad (6)$$

Assume the following.

$$\forall X0.(l3\_lattices X0) \Rightarrow ((l1\_lattices X0) \wedge (l2\_lattices X0)) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_robbins1 X0)) \Rightarrow ((v4\_robbins1 (k8\_robbins1 X0)) \wedge (l4\_robbins1 (k8\_robbins1 X0))) \quad (8)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices X0) \wedge ((v5\_lattices X0) \wedge ((v6\_robbins1 X0) \wedge ((v7\_robbins1 X0) \wedge (l2\_robbins1 X0)))))) \Rightarrow (m1\_subset\_1 (k7\_robbins1 X0) (u1\_struct\_0 X0)) \quad (9)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_lattices X0)) \Rightarrow (m1\_subset\_1 (k5\_lattices X0) (u1\_struct\_0 X0)) \quad (10)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices X0) \wedge ((v5\_lattices X0) \wedge ((v6\_robbins1 X0) \wedge ((v7\_robbins1 X0) \wedge (l2\_robbins1 X0)))))) \Rightarrow ((\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((X1 = k7\_robbins1 X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k6\_robbins1 X0 X1 X2 = X1)))) \quad (11)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_lattices X0)) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (k2\_lattices X0 X1 X2 = k5\_binop\_1 (u1\_struct\_0 X0) (u1\_lattices X0) X1 X2))) \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_lattices X0)) \Rightarrow ((v13\_lattices \\ & X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow ((X1 = k5\_lattices \\ & X0) \Leftrightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((k2\_lattices \\ & X0 X1 X2 = X1) \wedge (k2\_lattices X0 X2 X1 = X1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge (l2\_robbins1 X0)) \Rightarrow (\forall X1. \\ & ((v4\_robbins1 X1) \wedge (l4\_robbins1 X1)) \Rightarrow ((X1 = k8\_robbins1 X0) \Leftrightarrow ( \\ & (u1\_struct\_0 X1 = u1\_struct\_0 X0) \wedge ((u2\_lattices X1 = u2\_lattices \\ & X0) \wedge ((u1\_robbins1 X1 = u1\_robbins1 X0) \wedge (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\ & X0)) \Rightarrow (k1\_binop\_1 (u1\_lattices X1) X2 X3 = k4\_robbins1 X0 X2 X3)))))))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l2\_robbins1 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices \\ & X0) \wedge ((v5\_lattices X0) \wedge (v6\_robbins1 X0)))) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge \\ & (v7\_robbins1 X0))) \end{aligned} \quad (15)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices X0) \wedge ((v5\_lattices \\ & X0) \wedge ((v6\_robbins1 X0) \wedge (l2\_robbins1 X0)))))) \Rightarrow (k7\_robbins1 X0 = \\ & k5\_lattices (k8\_robbins1 X0)) \end{aligned}$$