

# t52\_robbins2 (TMQhkcAn- bJtLT5HkhaayKjvJUaK8DWLxEUU)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_robbins2 : \iota \Rightarrow o$  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  $k5\_robbins1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_robbins1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_lattices : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_robbins2 X0) \wedge (l2\_robbins1 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow (k5\_robbins1 X0 (k3\_robbins1 X0 (k5\_robbins1 \\ & X0 (k3\_robbins1 X0 X1) (k3\_robbins1 X0 (k5\_robbins1 X0 (k5\_robbins1 \\ & X0 X2 X1) (k5\_robbins1 X0 X2 X3)))))) (k5\_robbins1 X0 X2 X3) = k5\_robbins1 \\ & X0 (k5\_robbins1 X0 X2 X1) (k5\_robbins1 X0 X2 X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_robbins2 X0) \wedge (l2\_robbins1 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow (k5\_robbins1 X0 (k3\_robbins1 X0 X1) (k3\_robbins1 \\ & X0 (k5\_robbins1 X0 (k5\_robbins1 X0 X2 X1) X3)) = k3\_robbins1 X0 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v4\_lattices \\ & X0) \wedge (l2\_robbins1 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge ( \\ & m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 (k5\_robbins1 \\ & X0 X1 X2) (u1\_struct\_0 X0)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(l2\_robbins1 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v1\_robbins2 \\ & X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge (v4\_lattices X0))) \end{aligned} \quad (4)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_robbins2 X0) \wedge (l2\_robbins1 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow (k5\_robbins1 X0 (k3\_robbins1 X0 (k3\_robbins1 \\ & X0 X1)) (k5\_robbins1 X0 X2 X3) = k5\_robbins1 X0 (k5\_robbins1 X0 X2 \\ & X1) (k5\_robbins1 X0 X2 X3)))))) \end{aligned}$$