

## t13\_robbins4

(TMZct72sR5oBsua1EYLM3UcmPfd6HJLZ54C)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_robbins4 : \iota$  be given. Let  $k2\_robbins4 : \iota$  be given. Let  $r3\_orders\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v10\_lattices : \iota \Rightarrow o$  be given. Let  $l3\_lattices : \iota \Rightarrow o$  be given. Let  $k3\_lattice3 : \iota \Rightarrow \iota$  be given. Let  $k4\_lattice3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $g3\_lattices : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_lattices : \iota \Rightarrow \iota$  be given. Let  $u1\_lattices : \iota \Rightarrow \iota$  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  $v4\_robbins1 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v3\_lattices : \iota \Rightarrow o$  be given. Let  $l2\_lattices : \iota \Rightarrow o$  be given. Let  $l1\_lattices : \iota \Rightarrow o$  be given. Let  $l4\_robbins1 : \iota \Rightarrow o$  be given. Let  $l2\_robbins1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow ((r3\_lattices X0 X1 X2) \Leftrightarrow (r3\_orders\_2 \\ & (k3\_lattice3 X0) (k4\_lattice3 X0 X1) (k4\_lattice3 X0 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices \\ & X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v10\_lattices X1) \wedge (l3\_lattices \\ & X1))) \Rightarrow ((g3\_lattices (u1\_struct\_0 X0) (u2\_lattices X0) (u1\_lattices \\ & X0) = g3\_lattices (u1\_struct\_0 X1) (u2\_lattices X1) (u1\_lattices \\ & X1)) \Rightarrow (k3\_lattice3 X0 = k3\_lattice3 X1))) \end{aligned} \quad (2)$$

Assume the following.

$$k3\_lattice3 (g3\_lattices (u1\_struct\_0 k2\_robbins4) (u2\_lattices k2\_robbins4) (u1\_lattices k2\_robbins4)) = k1\_robbins4 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1\_funct\_1 X1)\wedge((v1\_funct\_2 \\ & X1 (k2\_zfmisc\_1 X0 X0) X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X0) X0))))\wedge((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 \\ & (k2\_zfmisc\_1 X0 X0) X0)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X0) X0))))))\Rightarrow(\forall X3.\forall X4.\forall X5. \\ & (g3\_lattices X0 X1 X2 = g3\_lattices X3 X4 X5)\Rightarrow((X0 = X3)\wedge((X1 = X4)\wedge \\ & (X2 = X5)))) \end{aligned} \tag{4}$$

Assume the following.

$$(v10\_lattices k2\_robbins4)\wedge(v4\_robbins1 k2\_robbins4) \tag{5}$$

Assume the following.

$$(\neg v2\_struct\_0 k2\_robbins4)\wedge(v4\_robbins1 k2\_robbins4) \tag{6}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(\neg v1\_xboole\_0 (u1\_struct\_0 X0)) \tag{7}$$

Assume the following.

$$\forall X0.((v2\_struct\_0 X0)\wedge(l1\_struct\_0 X0))\Rightarrow(v1\_xboole\_0 (u1\_struct\_0 X0)) \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0)\wedge((v10\_lattices X0)\wedge(l3\_lattices \\ & X0)))\Rightarrow(((v3\_lattices (g3\_lattices (u1\_struct\_0 X0) (u2\_lattices \\ & X0) (u1\_lattices X0)))\wedge(v10\_lattices (g3\_lattices (u1\_struct\_0 \\ & X0) (u2\_lattices X0) (u1\_lattices X0)))) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l2\_lattices X0)\Rightarrow(((v1\_funct\_1 (u2\_lattices X0))\wedge \\ & ((v1\_funct\_2 (u2\_lattices X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0))\wedge(m1\_subset\_1 (u2\_lattices \\ & X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0.(l1\_lattices X0)\Rightarrow(((v1\_funct\_1 (u1\_lattices X0))\wedge \\ & ((v1\_funct\_2 (u1\_lattices X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0))\wedge(m1\_subset\_1 (u1\_lattices \\ & X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ & u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \tag{11}$$

Assume the following.

$$\forall X0.(l4\_robbins1 X0) \Rightarrow ((l2\_robbins1 X0) \wedge (l3\_lattices X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l3\_lattices X0) \Rightarrow ((l1\_lattices X0) \wedge (l2\_lattices X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l2\_lattices X0) \Rightarrow (l1\_struct\_0 X0) \quad (14)$$

Assume the following.

$$(v4\_robbins1 k2\_robbins4) \wedge (l4\_robbins1 k2\_robbins4) \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\ & X1 (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X0) X0)))))) \wedge ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 \\ & (k2\_zfmisc\_1 X0 X0) X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X0) X0)))))) \Rightarrow ((v3\_lattices (g3\_lattices X0 X1 \\ & X2)) \wedge (l3\_lattices (g3\_lattices X0 X1 X2))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v10\_lattices X0) \wedge (l3\_lattices X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k4\_lattice3 X0 X1 = X1)) \quad (17)$$

Assume the following.

$$\forall X0.(l3\_lattices X0) \Rightarrow ((v3\_lattices X0) \Rightarrow (X0 = g3\_lattices (u1\_struct\_0 X0) (u2\_lattices X0) (u1\_lattices X0))) \quad (18)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 (u1\_struct\_0 k1\_robbins4)) \Rightarrow (\forall X1. \\ & (m1\_subset\_1 X1 (u1\_struct\_0 k1\_robbins4)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 k2\_robbins4)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 \\ & k2\_robbins4)) \Rightarrow (((X0 = X2) \wedge (X1 = X3)) \Rightarrow ((r3\_orders\_2 k1\_robbins4 \\ & X0 X1) \Leftrightarrow (r3\_lattices k2\_robbins4 X2 X3)))))) \end{aligned}$$