

## t39\_fsm\_1

(TMYAdD1AnvhBTzkZ8mLk7H8wuMVXMG7CpSX)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v8\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l2\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k8\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v4\_fsm\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $m1\_eqrel\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 \\ & X1) \Rightarrow (\forall X2.(\neg v1\_xboole\_0 X2) \Rightarrow (\forall X3.((\neg v2\_struct\_0 \\ & X3) \wedge (l2\_fsm\_1 X3 X1 X2)) \Rightarrow ((k7\_fsm\_1 X1 X2 X3 X0 = k7\_fsm\_1 X1 X2 X3 \\ & (k2\_nat\_1 X0 np\_1)) \Rightarrow (v4\_fsm\_1 (k7\_fsm\_1 X1 X2 X3 X0) X1 X2 X3)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 \\ & X1) \Rightarrow (\forall X2.(\neg v1\_xboole\_0 X2) \Rightarrow (\forall X3.((\neg v2\_struct\_0 \\ & X3) \wedge ((v8\_struct\_0 X3) \wedge (l2\_fsm\_1 X3 X1 X2))) \Rightarrow ((k2\_nat\_1 X0 np\_1 = \\ & k5\_card\_1 (u1\_struct\_0 X3)) \Rightarrow (k7\_fsm\_1 X1 X2 X3 (k2\_nat\_1 X0 np\_1) = \\ & k7\_fsm\_1 X1 X2 X3 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0) \wedge \\ & ((\neg v1\_xboole\_0 X1) \wedge ((\neg v2\_struct\_0 X2) \wedge (l2\_fsm\_1 X2 X0 X1)) \wedge \\ & (v7\_ordinal1 X3))) \Rightarrow ((\neg v1\_xboole\_0 (k7\_fsm\_1 X0 X1 X2 X3)) \wedge (m1\_eqrel\_1 \\ & (k7\_fsm\_1 X0 X1 X2 X3) (u1\_struct\_0 X2))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow \\ (\forall X2.((\neg v2\_struct\_0 X2) \wedge ((v8\_struct\_0 X2) \wedge (l2\_fsm\_1 \\ X2 X0 X1)))) \Rightarrow (\forall X3.(m1\_eqrel\_1 X3 (u1\_struct\_0 X2)) \Rightarrow ((X3 = \\ k8\_fsm\_1 X0 X1 X2) \Leftrightarrow (v4\_fsm\_1 X3 X0 X1 X2)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (6)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1 X0 k5\_numbers) \Rightarrow (\forall X1.(\neg v1\_xboole\_0 \\ X1) \Rightarrow (\forall X2.(\neg v1\_xboole\_0 X2) \Rightarrow (\forall X3.((\neg v2\_struct\_0 \\ X3) \wedge ((v8\_struct\_0 X3) \wedge (l2\_fsm\_1 X3 X1 X2)))) \Rightarrow ((k2\_nat\_1 X0 np\_1 = \\ k5\_card\_1 (u1\_struct\_0 X3)) \Rightarrow (k8\_fsm\_1 X1 X2 X3 = k7\_fsm\_1 X1 X2 X3 \\ X0)))))) \end{aligned}$$