t10_fsm_3 (TMPzofeA4McLJ4arinM7SodquEbn1PXo8iH)

October 27, 2020

Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k8\_afinsq\_1 : \iota \Rightarrow \iota$ be given. Let $k9\_flang\_1 : \iota \Rightarrow \iota$ be given. Let $k1\_flang\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_afinsq\_1 : \iota \Rightarrow \iota$ be given. Let $np\_\_1 : \iota$ be given. Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k8\_afinsq\_1\ X0)) \Rightarrow ((X1 \in k9\_flang\_1\ X0) \Leftrightarrow (k1\_afinsq\_1\ X1 = np\_\_1))) \tag{1}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k8\_afinsq\_1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k8\_afinsq\_1\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (k8\_afinsq\_1\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (k8\_afinsq\_1\ X0)) \Rightarrow (\neg(k1\_flang\_1\ X0\ X1\ X2 = k1\_flang\_1\ X0\ X3\ X4) \wedge ((\forall X5.(m1\_subset\_1\ X5\ (k8\_afinsq\_1\ X0)) \Rightarrow (\neg(k1\_flang\_1\ X0\ X1\ X5 = X3) \wedge (X2 = k1\_flang\_1\ X0\ X5\ X4))) \wedge (\forall X5.(m1\_subset\_1\ X5\ (k8\_afinsq\_1\ X0)) \Rightarrow (\neg(k1\_flang\_1\ X0\ X3\ X5 = X1) \wedge (X4 = k1\_flang\_1\ X0\ X5\ X2)))))))))) \tag{2}$$

Assume the following.

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k8\_afinsq\_1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k8\_afinsq\_1\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (k8\_afinsq\_1\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (k8\_afinsq\_1\ X0)) \Rightarrow ((k1\_flang\_1\ X0\ X1\ X2 = k1\_flang\_1\ X0\ X3\ X4) \Rightarrow (((k1\_afinsq\_1\ X1 \neq k1\_afinsq\_1\ X3) \wedge (k1\_afinsq\_1\ X2 \neq k1\_afinsq\_1\ X4)) \vee ((X1 = X3) \wedge (X2 = X4)))))))) \tag{3}$$

Theorem 1

$$\forall X0.(\neg v1\_xboole\_0\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (k8\_afinsq\_1\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k8\_afinsq\_1\ X0)) \Rightarrow (((X1 \in k9\_flang\_1\ X0) \wedge (X2 \in k9\_flang\_1\ X0)) \Rightarrow ((X1 = X2) \vee (\forall X3.(m1\_subset\_1\ X3\ (k8\_afinsq\_1\ X0)) \Rightarrow ((k1\_flang\_1\ X0\ X1\ X3 \neq X2) \wedge (k1\_flang\_1\ X0\ X3\ X1 \neq X2)))))))$$