

t117\_aofa\_000

(TMS3NtiN5j3X9NJ9MvtXHBrZ6sCVCBG9hia)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v3\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v4\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v3\_aofa\_000 : \iota \Rightarrow o$  be given. Let  $v4\_aofa\_000 : \iota \Rightarrow o$  be given. Let  $v5\_aofa\_000 : \iota \Rightarrow o$  be given. Let  $v6\_aofa\_000 : \iota \Rightarrow o$  be given. Let  $l1\_unialg\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_aofa\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r5\_aofa\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r4\_aofa\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k13\_aofa\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_aofa\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k21\_aofa\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r7\_aofa\_000 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 X1) \Rightarrow ((v1\_xboole\_0 X1) \vee (X0 \in X1)) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 X0) \wedge ((v4\_unialg\_1 X0) \wedge ((v3\_aofa\_000 X0) \wedge ((v4\_aofa\_000 X0) \wedge ((v5\_aofa\_000 X0) \wedge ((v6\_aofa\_000 X0) \wedge (l1\_unialg\_1 X0)))))))))) \Rightarrow \\ & (\forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (k1\_zfmisc\_1 X1)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 X1) \Rightarrow (\forall X4. (m1\_aofa\_000 X4 X0 X1 X2) \Rightarrow (\forall X5. (m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6. (m1\_subset\_1 X6 (u1\_struct\_0 X0)) \Rightarrow (((r5\_aofa\_000 X0 X1 X2 X5 X4) \wedge (r5\_aofa\_000 X0 X1 X2 X6 X4) \wedge (r4\_aofa\_000 X0 (k13\_aofa\_000 X0 X6 X5) X1 (k2\_binop\_1 X1 (u1\_struct\_0 X0) X1 X4 X3 X5) X2 X4)))) \Rightarrow (k4\_tarski X3 (k16\_aofa\_000 X0 X5 X6) \in k21\_aofa\_000 X0 X1 X2 X4)))))))))) \quad (2) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\ & X0) \wedge ((v4\_unialg\_1 X0) \wedge ((v3\_aofa\_000 X0) \wedge ((v4\_aofa\_000 X0) \wedge \\ & ((v5\_aofa\_000 X0) \wedge ((v6\_aofa\_000 X0) \wedge (l1\_unialg\_1 X0)))))))))) \Rightarrow \\ & (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & X1)) \Rightarrow (\forall X3.(m1\_aofa\_000 X3 X0 X1 X2) \Rightarrow (\forall X4.(m1\_subset\_1 \\ & X4 (u1\_struct\_0 X0)) \Rightarrow (r7\_aofa\_000 X0 X1 X2 X4 X3 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v4\_unialg\_1 X0) \wedge ((v6\_aofa\_000 \\ & X0) \wedge (l1\_unialg\_1 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge \\ & m1\_subset\_1 X2 (u1\_struct\_0 X0))) \Rightarrow (m1\_subset\_1 (k16\_aofa\_000 \\ & X0 X1 X2) (u1\_struct\_0 X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\ & X0) \wedge ((v4\_unialg\_1 X0) \wedge ((v3\_aofa\_000 X0) \wedge ((v4\_aofa\_000 X0) \wedge \\ & ((v5\_aofa\_000 X0) \wedge ((v6\_aofa\_000 X0) \wedge (l1\_unialg\_1 X0)))))))))) \Rightarrow \\ & (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. \\ & (m1\_aofa\_000 X4 X0 X1 X2) \Rightarrow (\forall X5.(r7\_aofa\_000 X0 X1 X2 X3 X4 \\ & X5) \Leftrightarrow (\forall X6.(m1\_subset\_1 X6 X1) \Rightarrow ((X6 \in X5) \Rightarrow (k2\_binop\_1 X1 \\ & (u1\_struct\_0 X0) X1 X4 X6 X3 \in X5)))))))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\ & X0) \wedge ((v4\_unialg\_1 X0) \wedge ((v3\_aofa\_000 X0) \wedge ((v4\_aofa\_000 X0) \wedge \\ & ((v5\_aofa\_000 X0) \wedge ((v6\_aofa\_000 X0) \wedge (l1\_unialg\_1 X0)))))))))) \Rightarrow \\ & (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & X1)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. \\ & (m1\_aofa\_000 X4 X0 X1 X2) \Rightarrow ((r5\_aofa\_000 X0 X1 X2 X3 X4) \Leftrightarrow (\forall X5. \\ & (m1\_subset\_1 X5 X1) \Rightarrow (k4\_tarski X5 X3 \in k21\_aofa\_000 X0 X1 X2 X4)))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \Rightarrow ((m1\_subset\_1 X1 X0) \Leftrightarrow \\ & (X1 \in X0))) \wedge ((v1\_xboole\_0 X0) \Rightarrow ((m1\_subset\_1 X1 X0) \Leftrightarrow (v1\_xboole\_0 \\ & X1))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l1\_unialg\_1 X0) \Rightarrow ((v4\_unialg\_1 X0) \Rightarrow (\neg v2\_struct\_0 X0)) \quad (8)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_unialg\_1 X0) \wedge ((v3\_unialg\_1 \\ & X0) \wedge ((v4\_unialg\_1 X0) \wedge ((v3\_aofa\_000 X0) \wedge ((v4\_aofa\_000 X0) \wedge \\ & ((v5\_aofa\_000 X0) \wedge ((v6\_aofa\_000 X0) \wedge (l1\_unialg\_1 X0)))))))))) \Rightarrow \\ & (\forall X1.(\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & X1)) \Rightarrow (\forall X3.(m1\_aofa\_000 X3 X0 X1 X2) \Rightarrow (\forall X4.(m1\_subset\_1 \\ & X4 (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 \\ & X0)) \Rightarrow (((r5\_aofa\_000 X0 X1 X2 X4 X3) \wedge ((r5\_aofa\_000 X0 X1 X2 X5 X3) \wedge \\ & (\forall X6.(m1\_subset\_1 X6 X1) \Rightarrow (r4\_aofa\_000 X0 (k13\_aofa\_000 \\ & X0 X5 X4) X1 X6 X2 X3)))) \Rightarrow (r5\_aofa\_000 X0 X1 X2 (k16\_aofa\_000 X0 X4 \\ & X5) X3))))))))) \end{aligned}$$