

## t30\_semi\_af1

(TMTfengEyYtJyUGganAbgMnreD1sT7XJojE)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_semi\_af1 : \iota \Rightarrow o$  be given. Let  $l1\_analoaf : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_semi\_af1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_semi\_af1 X0) \wedge (l1\_analoaf \\
 & \quad X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
 & \quad (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
 & \quad (u1\_struct\_0 X0)) \Rightarrow ((r2\_analoaf X0 X1 X2 X1 X3) \Rightarrow ((r2\_analoaf X0 \\
 & \quad X1 X3 X1 X2) \wedge ((r2\_analoaf X0 X2 X1 X1 X3) \wedge ((r2\_analoaf X0 X1 X2 X3 X1) \wedge \\
 & \quad ((r2\_analoaf X0 X1 X3 X2 X1) \wedge ((r2\_analoaf X0 X2 X1 X3 X1) \wedge ((r2\_analoaf \\
 & \quad X0 X3 X1 X1 X2) \wedge ((r2\_analoaf X0 X3 X1 X2 X1) \wedge ((r2\_analoaf X0 X2 X1 X2 \\
 & \quad X3) \wedge ((r2\_analoaf X0 X1 X2 X2 X3) \wedge ((r2\_analoaf X0 X2 X1 X3 X2) \wedge ((r2\_analoaf \\
 & \quad X0 X2 X3 X2 X1) \wedge ((r2\_analoaf X0 X1 X2 X3 X2) \wedge ((r2\_analoaf X0 X3 X2 X2 \\
 & \quad X1) \wedge ((r2\_analoaf X0 X2 X3 X1 X2) \wedge ((r2\_analoaf X0 X3 X2 X1 X2) \wedge ((r2\_analoaf \\
 & \quad X0 X3 X1 X3 X2) \wedge ((r2\_analoaf X0 X1 X3 X3 X2) \wedge ((r2\_analoaf X0 X3 X1 X2 \\
 & \quad X3) \wedge ((r2\_analoaf X0 X1 X3 X2 X3) \wedge ((r2\_analoaf X0 X3 X2 X3 X1) \wedge ((r2\_analoaf \\
 & \quad X0 X2 X3 X3 X1) \wedge ((r2\_analoaf X0 X3 X2 X1 X3) \wedge (r2\_analoaf X0 X2 X3 X1 \\
 & \quad X3))))))))))))))))))))))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_semi\_af1 X0) \wedge (l1\_analoaf \\
 & \quad X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
 & \quad (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
 & \quad (u1\_struct\_0 X0)) \Rightarrow ((r1\_semi\_af1 X0 X1 X2 X3) \Leftrightarrow (r2\_analoaf X0 X1 \\
 & \quad X2 X1 X3))))))
 \end{aligned} \tag{2}$$



**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_semi\_af1 X0) \wedge (l1\_analoaf \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\ & (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (((r1\_semi\_af1 \\ X0 X1 X2 X3) \wedge ((r1\_semi\_af1 X0 X1 X2 X4) \wedge (r1\_semi\_af1 X0 X1 X3 X5))) \Rightarrow \\ & ((X1 = X2) \vee ((X1 = X3) \vee (r2\_analoaf X0 X2 X3 X4 X5)))))))))) \end{aligned}$$