

# t34\_semi\_af1 (TMXZHaYNjNverXSGsUpuB- HdhnRPMELE8MjV)

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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.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_semi\_af1 X0) \wedge (l1\_analoaf \\ & \quad X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & \quad (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & \quad (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\ & \quad (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6.(m1\_subset\_1 \\ & \quad X6 (u1\_struct\_0 X0)) \Rightarrow (\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 \\ & \quad X0)) \Rightarrow (((r2\_analoaf X0 X1 X2 X4 X5) \wedge ((r2\_analoaf X0 X1 X3 X4 X6) \wedge \\ & \quad (r2\_analoaf X0 X1 X3 X4 X7) \wedge ((r2\_analoaf X0 X2 X3 X5 X6) \wedge (r2\_analoaf \\ & \quad X0 X2 X3 X5 X7)))))) \Rightarrow ((r2\_analoaf X0 X1 X2 X1 X3) \vee (X6 = X7))))))))) \\ & \hspace{15em} (1) \end{aligned}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_semi\_af1 X0) \wedge (l1\_analoaf \\ & \quad X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & \quad (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & \quad (u1\_struct\_0 X0)) \Rightarrow ((r1\_semi\_af1 X0 X1 X2 X3) \Leftrightarrow (r2\_analoaf X0 X1 \\ & \quad X2 X1 X3)))))) \\ & \hspace{15em} (2) \end{aligned}$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_semi\_af1 X0) \wedge (l1\_analoaf \\ & \quad X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & \quad (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & \quad (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\ & \quad (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6.(m1\_subset\_1 \\ & \quad X6 (u1\_struct\_0 X0)) \Rightarrow (((r1\_semi\_af1 X0 X1 X2 X4) \wedge ((r1\_semi\_af1 \\ & \quad X0 X1 X3 X5) \wedge ((r1\_semi\_af1 X0 X1 X3 X6) \wedge ((r2\_analoaf X0 X2 X3 X4 X5) \wedge \\ & \quad (r2\_analoaf X0 X2 X3 X4 X6)))))) \Rightarrow ((r1\_semi\_af1 X0 X1 X2 X3) \vee (X5 = X6))))))))) \end{aligned}$$