

# t85\_semi\_af1 (TMNPmoZk- fEzKa2VrGWim5c4zT1bvrBRQxRT)

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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  $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_semi\_af1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r3\_semi\_af1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_semi\_af1 X0) \wedge (l1\_analoaf \\
& \quad X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& \quad (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\
& \quad (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6.(m1\_subset\_1 \\
& \quad X6 (u1\_struct\_0 X0)) \Rightarrow (((r3\_semi\_af1 X0 X1 X2 X3 X4) \wedge (r3\_semi\_af1 \\
& \quad X0 X2 X5 X4 X6)) \Rightarrow (r3\_semi\_af1 X0 X1 X5 X3 X6)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_semi\_af1 X0) \wedge (l1\_analoaf \\
& \quad X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& \quad (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\
& \quad ((r3\_semi\_af1 X0 X1 X2 X3 X4) \Rightarrow ((r3\_semi\_af1 X0 X3 X4 X1 X2) \wedge ((r3\_semi\_af1 \\
& \quad X0 X2 X1 X4 X3) \wedge ((r3\_semi\_af1 X0 X1 X3 X2 X4) \wedge ((r3\_semi\_af1 X0 X4 X3 \\
& \quad X2 X1) \wedge ((r3\_semi\_af1 X0 X2 X4 X1 X3) \wedge ((r3\_semi\_af1 X0 X3 X1 X4 X2) \wedge \\
& \quad (r3\_semi\_af1 X0 X4 X2 X3 X1))))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_semi\_af1 X0) \wedge (l1\_analoaf \\
& \quad X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\
& \quad (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow \\
& \quad ((r3\_semi\_af1 X0 X1 X2 X3 X4) \Rightarrow (r2\_analoaf X0 X1 X2 X3 X4))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.(((\neg v2\_struct\_0 X0)\wedge((v1\_semi\_af1 X0)\wedge(l1\_analoaf X0)))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge((m1\_subset\_1 X2 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X3 (u1\_struct\_0 X0))))))\Rightarrow(m1\_subset\_1 (k1\_semi\_af1 X0 X1 X2 X3) (u1\_struct\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v1\_semi\_af1 X0)\wedge(l1\_analoaf X0)))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0))\Rightarrow((X4 = k1\_semi\_af1 X0 X1 X2 X3)\Leftrightarrow(r3\_semi\_af1 X0 X3 X1 X2 X4)))))) \quad (5)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0)\wedge((v1\_semi\_af1 X0)\wedge(l1\_analoaf X0)))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow(\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 X0))\Rightarrow(r2\_analoaf X0 X1 X2 (k1\_semi\_af1 X0 X1 X3 X4) (k1\_semi\_af1 X0 X2 X3 X4))))))$$