t1_semi_af1 (TMZiY3qeqesek1ZfzjZNr3NtdghnAaEsA2e)

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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 $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the follow-

ing.

$$
\begin{gathered}
\forall X0.((\neg \mathit{v2\_struct\_0}\ X0)\wedge(\mathit{l1\_analoaf}\ X0))\Rightarrow((\mathit{v1\_semi\_af1}\\
X0)\Leftrightarrow((\forall X1.(\mathit{m1\_subset\_1}\ X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X2.\\
(\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\mathit{r2\_analoaf}\ X0\ X1\ X2\ X2\ X1)))\wedge\\
((\forall X1.(\mathit{m1\_subset\_1}\ X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X2.(\\
\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X3.(\mathit{m1\_subset\_1}\ X3\\
(\mathit{u1\_struct\_0}\ X0))\Rightarrow(\mathit{r2\_analoaf}\ X0\ X1\ X2\ X3\ X3))))\wedge((\forall X1.\\
(\mathit{m1\_subset\_1}\ X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X2.(\mathit{m1\_subset\_1}\ X2\\
(\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X3.(\mathit{m1\_subset\_1}\ X3\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow\\
(\forall X4.(\mathit{m1\_subset\_1}\ X4\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X5.(\mathit{m1\_subset\_1}\\
X5\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X6.(\mathit{m1\_subset\_1}\ X6\ (\mathit{u1\_struct\_0}\\
X0))\Rightarrow(((\mathit{r2\_analoaf}\ X0\ X1\ X2\ X3\ X4)\wedge(\mathit{r2\_analoaf}\ X0\ X1\ X2\ X5\ X6))\Rightarrow(\\
(X1 = X2)\vee(\mathit{r2\_analoaf}\ X0\ X3\ X4\ X5\ X6)))))))))\wedge((\forall X1.(\mathit{m1\_subset\_1}\\
X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X2.(\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\\
X0))\Rightarrow(\forall X3.(\mathit{m1\_subset\_1}\ X3\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow((\mathit{r2\_analoaf}\\
X0\ X1\ X2\ X1\ X3)\Rightarrow(\mathit{r2\_analoaf}\ X0\ X2\ X1\ X2\ X3)))))\wedge((\neg\forall X1.(\mathit{m1\_subset\_1}\\
X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X2.(\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\\
X0))\Rightarrow(\forall X3.(\mathit{m1\_subset\_1}\ X3\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\mathit{r2\_analoaf}\\
X0\ X1\ X2\ X1\ X3))))\wedge((\forall X1.(\mathit{m1\_subset\_1}\ X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow\\
(\forall X2.(\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X3.(\mathit{m1\_subset\_1}\\
X3\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\exists X4.(\mathit{m1\_subset\_1}\ X4\ (\mathit{u1\_struct\_0}\\
X0))\wedge((\mathit{r2\_analoaf}\ X0\ X1\ X2\ X3\ X4)\wedge(\mathit{r2\_analoaf}\ X0\ X1\ X3\ X2\ X4))))))\wedge\\
((\forall X1.(\mathit{m1\_subset\_1}\ X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X2.(\\
\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\exists X3.(\mathit{m1\_subset\_1}\ X3\\
(\mathit{u1\_struct\_0}\ X0))\wedge(\forall X4.(\mathit{m1\_subset\_1}\ X4\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow\\
(\forall X5.(\mathit{m1\_subset\_1}\ X5\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow((\mathit{r2\_analoaf}\ X0\\
X1\ X2\ X1\ X3)\wedge(\neg\forall X6.(\mathit{m1\_subset\_1}\ X6\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow((\\
\mathit{r2\_analoaf}\ X0\ X1\ X3\ X1\ X4)\wedge(\neg(\mathit{r2\_analoaf}\ X0\ X1\ X5\ X1\ X6)\wedge(\mathit{r2\_analoaf}\\
X0\ X3\ X5\ X4\ X6))))))))))\wedge((\forall X1.(\mathit{m1\_subset\_1}\ X1\ (\mathit{u1\_struct\_0}\\
X0))\Rightarrow(\forall X2.(\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X3.\\
(\mathit{m1\_subset\_1}\ X3\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X4.(\mathit{m1\_subset\_1}\ X4\\
(\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X5.(\mathit{m1\_subset\_1}\ X5\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow\\
(\forall X6.(\mathit{m1\_subset\_1}\ X6\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X7.(\mathit{m1\_subset\_1}\\
X7\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(((\mathit{r2\_analoaf}\ X0\ X1\ X2\ X1\ X3)\wedge((\mathit{r2\_analoaf}\\
X0\ X1\ X4\ X1\ X5)\wedge((\mathit{r2\_analoaf}\ X0\ X1\ X6\ X1\ X7)\wedge((\mathit{r2\_analoaf}\ X0\ X2\ X4\ X3\\
X5)\wedge(\mathit{r2\_analoaf}\ X0\ X2\ X6\ X3\ X7)))))\Rightarrow((\mathit{r2\_analoaf}\ X0\ X1\ X2\ X1\ X4)\vee\\
((\mathit{r2\_analoaf}\ X0\ X1\ X2\ X1\ X6)\vee(\mathit{r2\_analoaf}\ X0\ X4\ X6\ X5\ X7)))))))))))\wedge\\
((\forall X1.(\mathit{m1\_subset\_1}\ X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X2.(\\
\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X3.(\mathit{m1\_subset\_1}\ X3\\
(\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X4.(\mathit{m1\_subset\_1}\ X4\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow\\
(\forall X5.(\mathit{m1\_subset\_1}\ X5\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X6.(\mathit{m1\_subset\_1}\\
X6\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(((\mathit{r2\_analoaf}\ X0\ X1\ X2\ X3\ X4)\wedge((\mathit{r2\_analoaf}\\
X0\ X1\ X2\ X5\ X6)\wedge((\mathit{r2\_analoaf}\ X0\ X1\ X3\ X2\ X4)\wedge(\mathit{r2\_analoaf}\ X0\ X1\ X5\ X2\\
X6))))\Rightarrow((\mathit{r2\_analoaf}\ X0\ X1\ X2\ X1\ X3)\vee((\mathit{r2\_analoaf}\ X0\ X1\ X2\ X1\ X5)\vee\\
(\mathit{r2\_analoaf}\ X0\ X3\ X5\ X4\ X6))))))))))\wedge((\forall X1.(\mathit{m1\_subset\_1}\\
X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X2.(\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\\
X0))\Rightarrow(\forall X3.(\mathit{m1\_subset\_1}\ X3\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X4.\\
(\mathit{m1\_subset\_1}\ X4\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X5.(\mathit{m1\_subset\_1}\ X5\\
(\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X6.(\mathit{m1\_subset\_1}\ X6\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow\\
(((\mathit{r2\_analoaf}\ X0\ X1\ X2\ X1\ X3)\wedge((\mathit{r2\_analoaf}\ X0\ X4\ X5\ X4\ X6)\wedge((\mathit{r2\_analoaf}\\
X0\ X1\ X5\ X2\ X4)\wedge(\mathit{r2\_analoaf}\ X0\ X2\ X6\ X3\ X5))))\Rightarrow(\mathit{r2\_analoaf}\ X0\ X3\ X4\\
X1\ X6))))))))\wedge(\forall X1.(\mathit{m1\_subset\_1}\ X1\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow\\
(\forall X2.(\mathit{m1\_subset\_1}\ X2\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X3.(\mathit{m1\_subset\_1}\\
X3\ (\mathit{u1\_struct\_0}\ X0))\Rightarrow(\forall X4.(\mathit{m1\_subset\_1}\ X4\ (\mathit{u1\_struct\_0}\\
X0))\Rightarrow(\neg(\neg \mathit{r2\_analoaf}\ X0\ X1\ X2\ X1\ X3)\wedge((\mathit{r2\_analoaf}\ X0\ X1\ X2\ X3\ X4)\wedge\\
((\mathit{r2\_analoaf}\ X0\ X1\ X3\ X2\ X4)\wedge(\mathit{r2\_analoaf}\ X0\ X1\ X4\ X2\ X3)))))))))))))))))))
\end{gathered}
\tag{1}
$$

Theorem 1

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