# t96_semi_af1 (TMP-NWh5fZpmcJQb2dEWknTxwkn1NL9oDfWD)

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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 $r4\_semi\_af1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v1\_semi\_af1\ X0) \wedge (l1\_analoaf\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0)) \Rightarrow (\neg(X1 \neq X2) \wedge ((r4\_semi\_af1\ X0\ X3\ X2\ X4\ X5\ X1) \wedge (r1\_semi\_af1\ X0\ X1\ X2\ X5)))))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v1\_semi\_af1\ X0) \wedge (l1\_analoaf\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0)) \Rightarrow ((r2\_analoaf\ X0\ X1\ X2\ X3\ X4) \Rightarrow (r2\_analoaf\ X0\ X3\ X4\ X1\ X2)))))) \tag{2}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v1\_semi\_af1\ X0) \wedge (l1\_analoaf\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow ((r1\_semi\_af1\ X0\ X1\ X2\ X3) \Rightarrow ((r1\_semi\_af1\ X0\ X1\ X3\ X2) \wedge ((r1\_semi\_af1\ X0\ X2\ X1\ X3) \wedge ((r1\_semi\_af1\ X0\ X2\ X3\ X1) \wedge ((r1\_semi\_af1\ X0\ X3\ X1\ X2) \wedge (r1\_semi\_af1\ X0\ X3\ X2\ X1))))))))) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v1\_semi\_af1\ X0)\wedge(l1\_analoaf\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0))\Rightarrow((r4\_semi\_af1\ X0\ X1\ X2\ X3\ X4\ X5)\Leftrightarrow((\neg r1\_semi\_af1\ X0\ X5\ X1\ X3)\wedge((r1\_semi\_af1\ X0\ X5\ X1\ X2)\wedge((r1\_semi\_af1\ X0\ X5\ X3\ X4)\wedge(r2\_analoaf\ X0\ X1\ X3\ X2\ X4)))))))))) \tag{4}$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0\ X0)\wedge((v1\_semi\_af1\ X0)\wedge(l1\_analoaf\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0))\Rightarrow((r4\_semi\_af1\ X0\ X3\ X2\ X4\ X5\ X1)\Rightarrow((X1 = X2)\vee(r4\_semi\_af1\ X0\ X2\ X3\ X5\ X4\ X1))))))))$$