t32_diraf (TMXuQTcEUFJnhXYr4qmYuSpfaTgYExb8oJ5)

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Let $v7\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_analoaf : \iota \Rightarrow o$ 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 $r3\_diraf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r2\_diraf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1\_struct\_0 : \iota \Rightarrow o$ be given. Let $v2\_struct\_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.((\neg v7\_struct\_0\ X0) \wedge ((v2\_analoaf\ X0) \wedge (l1\_analoaf\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X6.(m1\_subset\_1\ X6\ (u1\_struct\_0\ X0)) \Rightarrow (\neg(X1 \neq X2) \wedge ((\neg(\neg(r2\_diraf\ X0\ X1\ X2\ X3\ X4) \wedge (r2\_diraf\ X0\ X1\ X2\ X5\ X6)) \wedge ((\neg(r2\_diraf\ X0\ X1\ X2\ X3\ X4) \wedge (r2\_diraf\ X0\ X5\ X6\ X1\ X2)) \wedge ((\neg(r2\_diraf\ X0\ X3\ X4\ X1\ X2) \wedge (r2\_diraf\ X0\ X5\ X6\ X1\ X2)) \wedge (\neg(r2\_diraf\ X0\ X3\ X4\ X1\ X2) \wedge (r2\_diraf\ X0\ X1\ X2\ X5\ X6))))) \wedge (\neg r2\_diraf\ X0\ X3\ X4\ X5\ X6)))))))) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v7\_struct\_0\ X0) \wedge ((v2\_analoaf\ X0) \wedge (l1\_analoaf\ X0))) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow ((r2\_diraf\ X0\ X1\ X2\ X1\ X3) \Rightarrow (r2\_diraf\ X0\ X2\ X1\ X2\ X3))))) \tag{2}$$

Assume the following.

$$\forall X0.(l1\_analoaf\ X0) \Rightarrow (l1\_struct\_0\ X0) \tag{3}$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_analoaf\ X0)) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0)) \Rightarrow ((r3\_diraf\ X0\ X1\ X2\ X3) \Leftrightarrow (r2\_diraf\ X0\ X1\ X2\ X1\ X3))))) \tag{4}$$

Assume the following.

$$\forall X0.(l1\_struct\_0\ X0)\Rightarrow((v2\_struct\_0\ X0)\Rightarrow(v7\_struct\_0\ X0)) \qquad (5)$$

Theorem 1

$$\forall X0.((\neg v7\_struct\_0\ X0)\wedge((v2\_analoaf\ X0)\wedge(l1\_analoaf\ X0)))\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0))\Rightarrow(\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0))\Rightarrow(\forall X3.(m1\_subset\_1\ X3\ (u1\_struct\_0\ X0))\Rightarrow(\forall X4.(m1\_subset\_1\ X4\ (u1\_struct\_0\ X0))\Rightarrow(\forall X5.(m1\_subset\_1\ X5\ (u1\_struct\_0\ X0))\Rightarrow(((r3\_diraf\ X0\ X1\ X2\ X3)\wedge((r3\_diraf\ X0\ X1\ X2\ X4)\wedge(r3\_diraf\ X0\ X1\ X2\ X5)))\Rightarrow((X1 = X2)\vee(r3\_diraf\ X0\ X3\ X4\ X5)))))))))$$