

# t28\_diraf (TMPVVRvd- vft9WhXLfs1ckChocvVJb6M5QxH)

October 27, 2020

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  $r1\_diraf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r3\_diraf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $r2\_diraf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v7\_struct\_0 X0) \wedge ((v2\_analoaf X0) \wedge (l1\_analoaf \\ &X0))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ &(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 \\ &(u1\_struct\_0 X0)) \Rightarrow ((r2\_analoaf X0 X1 X2 X1 X3) \Leftrightarrow ((r1\_diraf X0 X1 \\ &X2 X3) \vee (r1\_diraf X0 X1 X3 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. (l1\_analoaf X0) \Rightarrow (l1\_struct\_0 X0) \quad (2)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge (l1\_analoaf X0)) \Rightarrow (\forall X1. \\ &(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\ &(u1\_struct\_0 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow \\ &(\forall X4. (m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow ((r2\_diraf X0 X1 \\ &X2 X3 X4) \Leftrightarrow ((r2\_analoaf X0 X1 X2 X3 X4) \vee (r2\_analoaf X0 X1 X2 X4 X3))))))) \end{aligned} \quad (4)$$

Assume the following.

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

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v7\_struct\_0 X0) \wedge ((v2\_analoaf X0) \wedge (l1\_analoaf \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 \\ & (u1\_struct\_0 X0)) \Rightarrow ((r1\_diraf X0 X1 X2 X3) \Rightarrow (r3\_diraf X0 X1 X2 X3)))))) \end{aligned}$$