

t33_diraf

(TMZg982np4KgonTSCXrK4AWD25ebxJWBsRw)

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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.

$$\begin{aligned}
 & \forall X0. ((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
 & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\
 & (u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
 & (\forall X5. (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6. (m1_subset_1 \\
 & X6 (u1_struct_0 X0)) \Rightarrow (\neg(X1 \neq X2) \wedge ((\neg(\neg(r2_diraf X0 X1 X2 X3 X4) \wedge \\
 & (r2_diraf X0 X1 X2 X5 X6)) \wedge ((\neg(r2_diraf X0 X1 X2 X3 X4) \wedge (r2_diraf \\
 & X0 X5 X6 X1 X2)) \wedge ((\neg(r2_diraf X0 X3 X4 X1 X2) \wedge (r2_diraf X0 X5 X6 X1 X2)) \wedge \\
 & (\neg(r2_diraf X0 X3 X4 X1 X2) \wedge (r2_diraf X0 X1 X2 X5 X6)))))) \wedge (\neg r2_diraf \\
 & X0 X3 X4 X5 X6)))))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf X0))) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
 & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3. (m1_subset_1 X3 \\
 & (u1_struct_0 X0)) \Rightarrow (\forall X4. (m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
 & ((r2_diraf X0 X1 X2 X3 X4) \Rightarrow ((r2_diraf X0 X1 X2 X4 X3) \wedge ((r2_diraf X0 \\
 & X2 X1 X3 X4) \wedge ((r2_diraf X0 X2 X1 X4 X3) \wedge ((r2_diraf X0 X3 X4 X1 X2) \wedge \\
 & (r2_diraf X0 X3 X4 X2 X1) \wedge ((r2_diraf X0 X4 X3 X1 X2) \wedge (r2_diraf X0 X4 \\
 & X3 X2 X1)))))))))
 \end{aligned}
 \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ (u1_struct_0 X0)) \Rightarrow ((r2_diraf X0 X1 X2 X1 X3) \Rightarrow (r2_diraf X0 X2 X1 X2 \\ X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\ (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6.(m1_subset_1 \\ X6 (u1_struct_0 X0)) \Rightarrow (((r2_diraf X0 X1 X2 X3 X4) \wedge (r2_diraf X0 X1 \\ X2 X5 X6)) \Rightarrow ((X1 = X2) \vee (r2_diraf X0 X3 X4 X5 X6)))))))))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(l1_analoaf X0) \Rightarrow (l1_struct_0 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2_struct_0 X0) \wedge (l1_analoaf X0)) \Rightarrow (\forall X1. \\ (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\ ((r3_diraf X0 X1 X2 X3) \Leftrightarrow (r2_diraf X0 X1 X2 X1 X3)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((\neg v7_struct_0 X0) \Rightarrow (\neg v2_struct_0 X0)) \quad (7)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf \\ X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\ (((r3_diraf X0 X1 X2 X3) \wedge (r2_diraf X0 X1 X2 X3 X4)) \Rightarrow ((X1 = X2) \vee (r3_diraf \\ X0 X1 X2 X4)))))) \end{aligned}$$