

t29_diraf (TMGKYwKVfEzkhwXUTddPhpWK- iXcDVWu9Jxm)

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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 $r1_diraf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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.

$$\begin{aligned} & \forall X0.((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow ((r2_analoaf X0 X1 X2 X1 X3) \Leftrightarrow ((r1_diraf X0 X1 \\ & X2 X3) \vee (r1_diraf X0 X1 X3 X2)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.(l1_analoaf X0) \Rightarrow (l1_struct_0 X0) \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge (l1_analoaf X0)) \Rightarrow (\forall X1. \\ & (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\ & (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\ & ((r3_diraf X0 X1 X2 X3) \Leftrightarrow (r2_diraf X0 X1 X2 X1 X3)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_analoaf X0)) \Rightarrow ((v2_analoaf \\
& \quad X0) \Leftrightarrow ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& \quad (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& \quad (\forall X5.(m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\forall X6.(m1_subset_1 \\
& \quad X6 (u1_struct_0 X0)) \Rightarrow (\forall X7.(m1_subset_1 X7 (u1_struct_0 \\
& \quad X0)) \Rightarrow (\forall X8.(m1_subset_1 X8 (u1_struct_0 X0)) \Rightarrow ((r2_analoaf \\
& \quad X0 X1 X2 X3 X3) \wedge (((r2_analoaf X0 X1 X2 X2 X1) \Rightarrow (X1 = X2)) \wedge (((r2_analoaf \\
& \quad X0 X1 X2 X5 X6) \wedge (r2_analoaf X0 X1 X2 X7 X8)) \Rightarrow ((X1 = X2) \vee (r2_analoaf \\
& \quad X0 X5 X6 X7 X8))) \wedge (((r2_analoaf X0 X1 X2 X3 X4) \Rightarrow (r2_analoaf X0 X2 X1 \\
& \quad X4 X3)) \wedge (((r2_analoaf X0 X1 X2 X2 X3) \Rightarrow (r2_analoaf X0 X1 X2 X1 X3)) \wedge \\
& \quad (\neg (r2_analoaf X0 X1 X2 X1 X3) \wedge ((\neg r2_analoaf X0 X1 X2 X2 X3) \wedge (\neg r2_analoaf \\
& \quad X0 X1 X3 X3 X2)))))))))) \wedge ((\exists X1.(m1_subset_1 X1 (u1_struct_0 \\
& \quad X0)) \wedge (\exists X2.(m1_subset_1 X2 (u1_struct_0 X0)) \wedge (\exists X3. \\
& \quad (m1_subset_1 X3 (u1_struct_0 X0)) \wedge (\exists X4.(m1_subset_1 X4 \\
& \quad (u1_struct_0 X0)) \wedge ((\neg r2_analoaf X0 X1 X2 X3 X4) \wedge (\neg r2_analoaf X0 \\
& \quad X1 X2 X4 X3)))))) \wedge ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow \\
& \quad (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 \\
& \quad X3 (u1_struct_0 X0)) \Rightarrow (\exists X4.(m1_subset_1 X4 (u1_struct_0 \\
& \quad X0)) \wedge ((r2_analoaf X0 X1 X2 X3 X4) \wedge ((r2_analoaf X0 X1 X3 X2 X4) \wedge (X2 \neq \\
& \quad X4)))))) \wedge (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\
& \quad (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\
& \quad (u1_struct_0 X0)) \Rightarrow (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow \\
& \quad (\neg (X1 \neq X3) \wedge ((r2_analoaf X0 X3 X1 X1 X4) \wedge (\forall X5.(m1_subset_1 \\
& \quad X5 (u1_struct_0 X0)) \Rightarrow (\neg (r2_analoaf X0 X2 X1 X1 X5) \wedge (r2_analoaf \\
& \quad X0 X2 X3 X4 X5))))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_analoaf X0)) \Rightarrow (\forall X1. \\
& \quad (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& \quad (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\
& \quad (\forall X4.(m1_subset_1 X4 (u1_struct_0 X0)) \Rightarrow ((r2_diraf X0 X1 \\
& \quad X2 X3 X4) \Leftrightarrow ((r2_analoaf X0 X1 X2 X3 X4) \vee (r2_analoaf X0 X1 X2 X4 X3))))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2_struct_0 X0) \wedge (l1_analoaf X0)) \Rightarrow (\forall X1. \\
& \quad (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 \\
& \quad (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 (u1_struct_0 X0)) \Rightarrow \\
& \quad ((r1_diraf X0 X1 X2 X3) \Leftrightarrow (r2_analoaf X0 X1 X2 X2 X3))))
\end{aligned} \tag{6}$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((v2_struct_0 X0) \Rightarrow (v7_struct_0 X0)) \tag{7}$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v7_struct_0 X0) \wedge ((v2_analoaf X0) \wedge (l1_analoaf \\ & X0))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X0)) \Rightarrow (\neg(r3_diraf X0 X1 X2 X3) \wedge ((\neg r1_diraf X0 X1 X2 \\ & X3) \wedge ((\neg r1_diraf X0 X2 X1 X3) \wedge (\neg r1_diraf X0 X1 X3 X2))))))) \end{aligned}$$