

t40_diraf

(TMT3Jj24dADyd1iytSG1NkiLTqJ8hcXu5Bf)

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Let $v7_struct_0 : \iota \Rightarrow o$ be given. Let $v1_diraf : \iota \Rightarrow o$ 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 $r2_analoaf : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $l1_struct_0 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(l1_analoaf\ X0) \Rightarrow (l1_struct_0\ X0) \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0\ X0) \wedge (l1_analoaf\ X0)) \Rightarrow ((v1_diraf\ X0) \Leftrightarrow \\ & \quad ((\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 ((r2_analoaf\ X0\ X1\ X2\ X2\ X1) \wedge ((r2_analoaf \\ & \quad X0\ X1\ X2\ X3\ X3) \wedge (((r2_analoaf\ X0\ X1\ X2\ X3\ X4) \wedge (r2_analoaf\ X0\ X1\ X2 \\ & \quad X5\ X6)) \Rightarrow ((X1 = X2) \vee (r2_analoaf\ X0\ X3\ X4\ X5\ X6))) \wedge ((r2_analoaf\ X0 \\ & \quad X1\ X2\ X1\ X3) \Rightarrow (r2_analoaf\ X0\ X2\ X1\ X2\ X3)))))) \wedge ((\neg \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 (r2_analoaf\ X0\ X1\ X2\ X1\ X3)))) \wedge ((\forall X1.(m1_subset_1\ X1\ (u1_struct_0 \\ & \quad X0)) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (u1_struct_0\ X0)) \Rightarrow (\forall X3. \\ & \quad (m1_subset_1\ X3\ (u1_struct_0\ X0)) \Rightarrow (\exists X4.(m1_subset_1\ X4 \\ & \quad (u1_struct_0\ X0)) \wedge ((r2_analoaf\ X0\ X1\ X3\ X2\ X4) \wedge (X2 \neq X4)))))) \wedge (\\ & \quad (\forall X1.(m1_subset_1\ X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2.(m1_subset_1 \\ & \quad X2\ (u1_struct_0\ X0)) \Rightarrow (\forall X3.(m1_subset_1\ X3\ (u1_struct_0 \\ & \quad X0)) \Rightarrow (\exists X4.(m1_subset_1\ X4\ (u1_struct_0\ X0)) \wedge ((r2_analoaf \\ & \quad X0\ X1\ X2\ X3\ X4) \wedge (r2_analoaf\ X0\ X1\ X3\ X2\ X4)))))) \wedge (\forall X1.(m1_subset_1 \\ & \quad X1\ (u1_struct_0\ X0)) \Rightarrow (\forall X2.(m1_subset_1\ X2\ (u1_struct_0 \\ & \quad X0)) \Rightarrow (\forall X3.(m1_subset_1\ X3\ (u1_struct_0\ X0)) \Rightarrow (\forall X4. \\ & \quad (m1_subset_1\ X4\ (u1_struct_0\ X0)) \Rightarrow (\neg (r2_analoaf\ X0\ X3\ X1\ X1\ X4) \wedge \\ & \quad ((X1 \neq X3) \wedge (\forall X5.(m1_subset_1\ X5\ (u1_struct_0\ X0)) \Rightarrow (\neg (r2_analoaf \\ & \quad X0\ X2\ X1\ X1\ X5) \wedge (r2_analoaf\ X0\ X2\ X3\ X4\ X5)))))))))) \tag{2} \end{aligned}$$

Assume the following.

$$\forall X0.(l1_struct_0 X0) \Rightarrow ((\neg v7_struct_0 X0) \Rightarrow (\neg v2_struct_0 X0)) \quad (3)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v7_struct_0 X0) \wedge ((v1_diraf X0) \wedge (l1_analoaf X0))) \Rightarrow \\ & \quad ((\neg \forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (X1 = X2))) \wedge ((\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_analoaf X0 X1 X2 X2 X1) \wedge ((r2_analoaf X0 X1 X2 X3 X3) \wedge (((r2_analoaf \\ & X0 X1 X2 X3 X4) \wedge (r2_analoaf X0 X1 X2 X5 X6)) \Rightarrow ((X1 = X2) \vee (r2_analoaf \\ & X0 X3 X4 X5 X6)))) \wedge ((r2_analoaf X0 X1 X2 X1 X3) \Rightarrow (r2_analoaf X0 X2 X1 \\ & X2 X3)))))) \wedge ((\neg \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)))) \wedge \\ & \quad ((\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 (\exists X4.(m1_subset_1 X4 (u1_struct_0 X0)) \wedge \\ & ((r2_analoaf X0 X1 X3 X2 X4) \wedge (X2 \neq X4)))))) \wedge ((\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 (\exists X4. \\ & (m1_subset_1 X4 (u1_struct_0 X0)) \wedge ((r2_analoaf X0 X1 X2 X3 X4) \wedge \\ & (r2_analoaf X0 X1 X3 X2 X4)))))) \wedge (\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 (\neg (r2_analoaf X0 X3 X1 X1 X4) \wedge ((X1 \neq X3) \wedge (\forall X5. \\ & (m1_subset_1 X5 (u1_struct_0 X0)) \Rightarrow (\neg (r2_analoaf X0 X2 X1 X1 X5) \wedge \\ & (r2_analoaf X0 X2 X3 X4 X5)))))))))) \end{aligned}$$