

# t18\_dirort

## (TMM7CxEQgwLr74HVMjorjT6QhVvUequ4G5r)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_dirort : \iota \Rightarrow o$  be given. Let  $l1\_analoaf : \iota \Rightarrow o$  be given. Let  $v3\_dirort : \iota \Rightarrow o$  be given. Let  $v5\_dirort : \iota \Rightarrow o$  be given. Let  $v6\_dirort : \iota \Rightarrow o$  be given. Let  $v4\_dirort : \iota \Rightarrow o$  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. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_dirort X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & ((v6\_dirort X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \\ & X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\ & X0)) \Rightarrow ((r2\_analoaf X0 X1 X2 X3 X4) \Rightarrow (r2\_analoaf X0 X3 X4 X1 X2))))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_dirort X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & ((v5\_dirort X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \\ & X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\ & X0)) \Rightarrow ((r2\_analoaf X0 X1 X2 X3 X4) \Rightarrow (r2\_analoaf X0 X3 X4 X2 X1))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_dirort X0) \wedge (l1\_analoaf X0))) \Rightarrow \\ & ((v4\_dirort X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow \\ & (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \\ & X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\ & X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (\forall X6. \\ & (m1\_subset\_1 X6 (u1\_struct\_0 X0)) \Rightarrow (\forall X7.(m1\_subset\_1 X7 \\ & (u1\_struct\_0 X0)) \Rightarrow (\forall X8.(m1\_subset\_1 X8 (u1\_struct\_0 X0)) \Rightarrow \\ & (\neg (r2\_analoaf X0 X1 X2 X4 X5) \wedge ((r2\_analoaf X0 X4 X5 X7 X8) \wedge ((r2\_analoaf \\ & X0 X1 X2 X3 X6) \wedge ((X1 \neq X2) \wedge ((X4 \neq X5) \wedge (\neg r2\_analoaf X0 X3 X6 X7 X8)))))))))))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_dirort X0) \wedge (l1\_analoaf X0))) \Rightarrow \\
& ((v3\_dirort X0) \Leftrightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))) \Rightarrow \\
& (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))) \Rightarrow (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 X0))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\
& X0))) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 X0))) \Rightarrow (\forall X6. \\
& (m1\_subset\_1 X6 (u1\_struct\_0 X0))) \Rightarrow (\forall X7.(m1\_subset\_1 X7 \\
& (u1\_struct\_0 X0))) \Rightarrow (\forall X8.(m1\_subset\_1 X8 (u1\_struct\_0 X0))) \Rightarrow \\
& (\neg(r2\_analoaf X0 X1 X2 X4 X5) \wedge ((r2\_analoaf X0 X4 X5 X7 X8) \wedge ((r2\_analoaf \\
& X0 X3 X6 X7 X8) \wedge ((X7 \neq X8) \wedge ((X4 \neq X5) \wedge (\neg r2\_analoaf X0 X1 X2 X3 X6))))))))))))) \\
& (4)
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v1\_dirort X0) \wedge (l1\_analoaf X0))) \Rightarrow \\
& ((v3\_dirort X0) \Rightarrow (((\neg v5\_dirort X0) \wedge (\neg v6\_dirort X0)) \vee (v4\_dirort \\
& X0)))
\end{aligned}$$