

1.

	x	y	z	f ₁	f ₂	f ₃	f ₄	f ₅	f ₆	f ₇	f ₈
-	0	0	0	0	1	1	1	0	1	0	1
	0	0	1	1	1	1	0	1	0	0	0
-	0	1	0	0	0	1	0	1	1	1	1
	0	1	1	1	0	0	1	0	1	0	0
	1	0	0	1	0	1	0	0	0	1	0
-	1	0	1	0	1	0	0	1	0	1	1
-	1	1	0	0	0	0	1	1	1	0	1
	1	1	1	1	1	0	1	0	0	1	0

* for 1
+ for V

$$DCF(f_1) = (\bar{x} \wedge \bar{y} \wedge z) \vee (\bar{x} \wedge y \wedge z) \vee (x \wedge \bar{y} \wedge \bar{z}) \vee (x \wedge y \wedge z)$$

$$CCF(f_1) = (x \vee y \vee z) \wedge (x \vee \bar{y} \vee z) \wedge (x \vee \bar{y} \vee \bar{z}) \wedge (\bar{x} \vee y \vee z) \wedge (\bar{x} \vee \bar{y} \vee z)$$

Karnaugh diagram

		\bar{x}		x	
		\bar{y}		y	
x \ y \ z	00	01	11	10	
0	0	0	0	1	
1	1	1	1	0	
z					

\swarrow $\bar{x} \wedge z$
 \swarrow $y \wedge z$

$$\Rightarrow (\bar{x} \wedge z) \vee (y \wedge z)$$

we look in the truth table to complete the diagram

look for group of 1, power of 2
ex: $2^0, 2^1, 2^2, \dots$

look for the common values in those groups (x, y, z)

if the common values are 0
we get \bar{x}, \bar{y} or \bar{z}

if it's 1 we get x, y, z