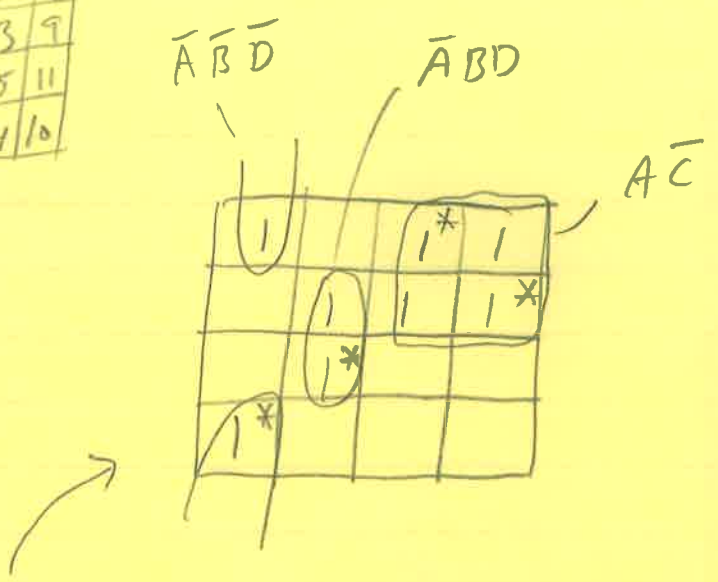
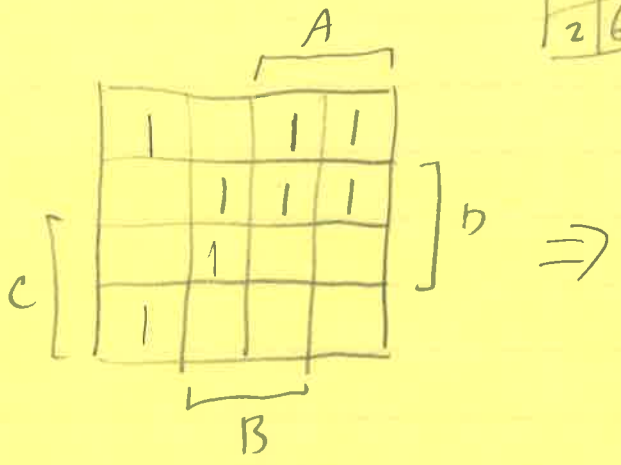


#1

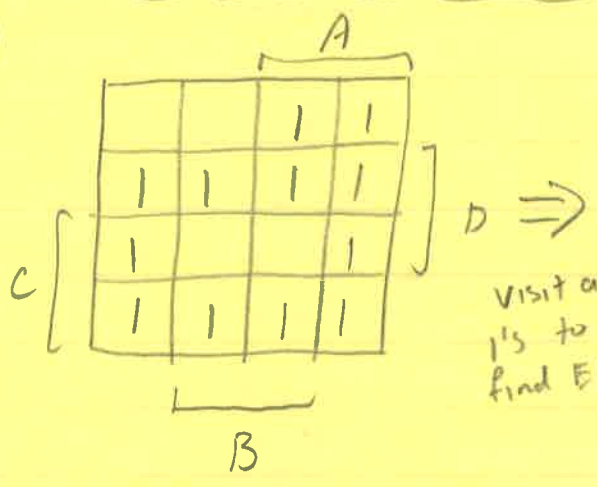
0	4	12	8
1	5	13	9
3	7	15	11
2	6	14	10



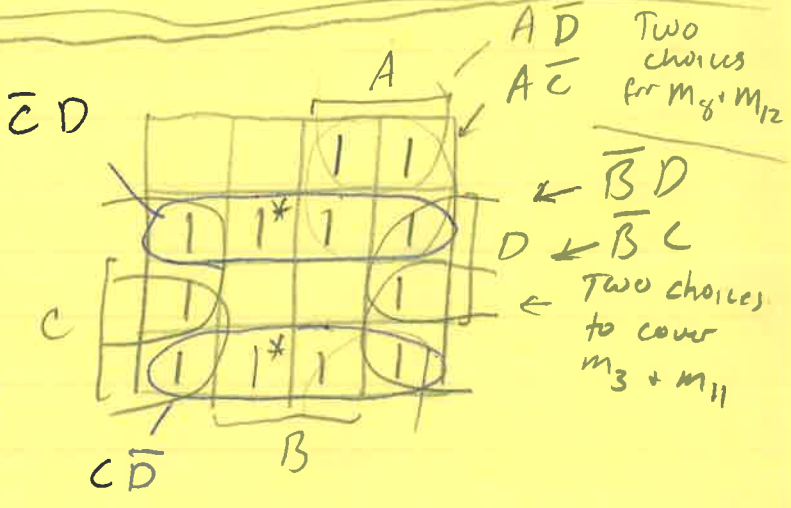
An EPI covers one or more 1's that are only covered by that prime implicant

In this case each product term is an Essential Prime Implicant (EPI)
 - The 1's marked with "*" make the PI an EPI

#2



visit all 1's to find EPI



Minimal SOP

$$\bar{C}D + C\bar{D} + A\bar{D} + \bar{B}D$$

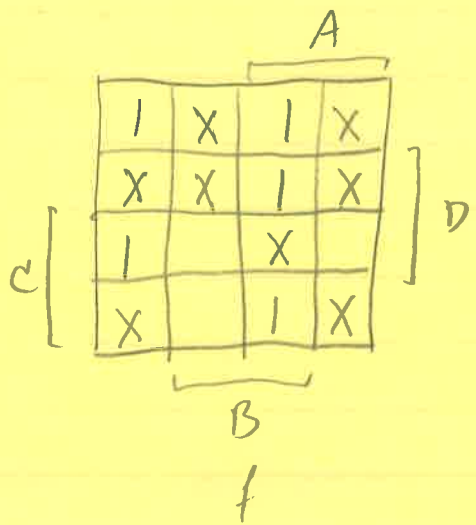
Essential - only ones to cover $m_5 + m_6$

Pick one to cover $m_8 + m_{12}$

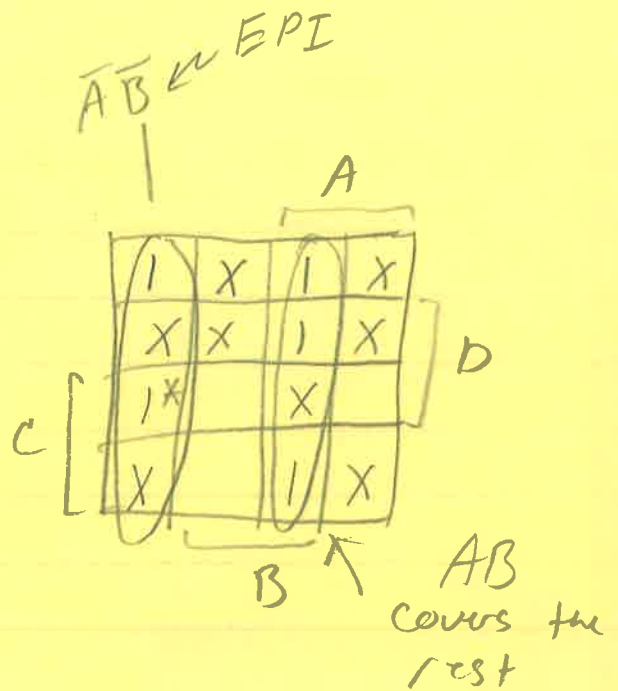
Pick one to cover $m_3 + m_{11}$

#3

Don't-care



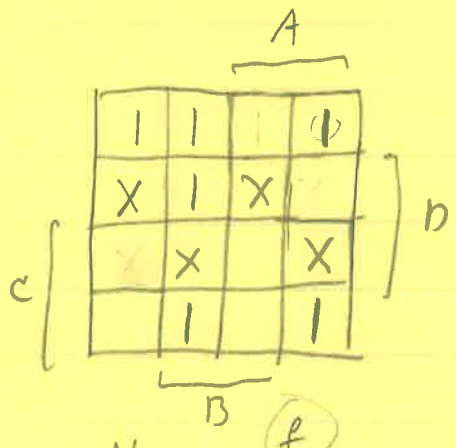
⇒



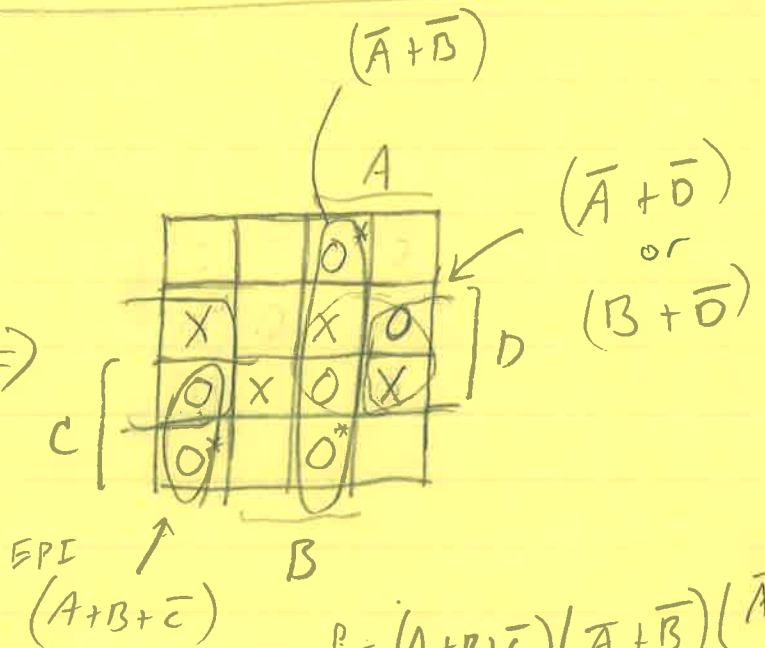
minimal $\bar{A}\bar{B} + AB$

#4

POS ⇒ cover zeros

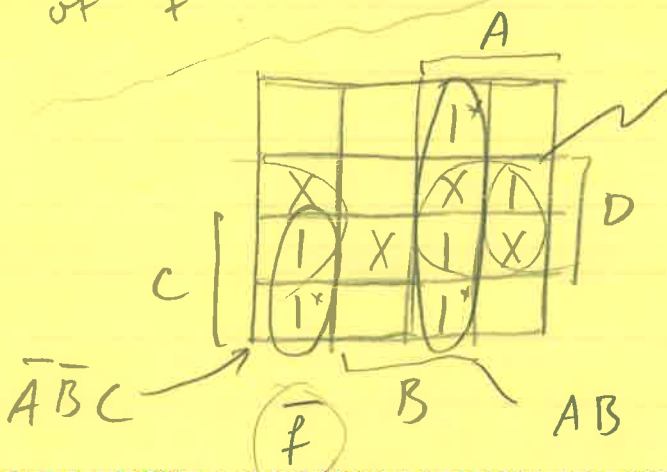


⇒



or cover 1's of \bar{F}

$$F = (A + B + \bar{C})(\bar{A} + \bar{B})(\bar{A} + \bar{D})(B + \bar{D})$$



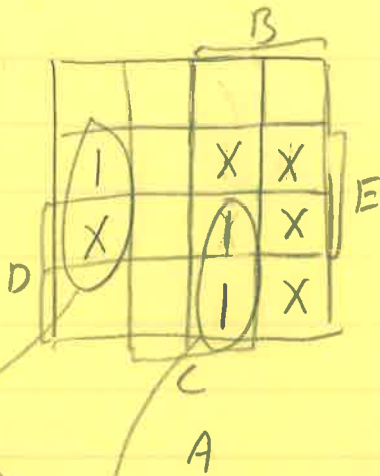
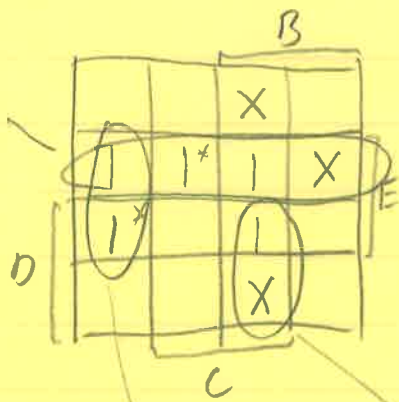
$$\bar{F} = \bar{A}\bar{B}C + AB + \frac{AD}{\bar{B}D}$$

so

$$F = (A + B + \bar{C})(\bar{A} + \bar{B})(\bar{A} + \bar{D})(B + \bar{D})$$

#5 5-variable

$\bar{A}\bar{D}E$
($E\pi_1$)



$E\pi_1 \rightarrow \bar{B}\bar{C}E$

BCD covers the rest