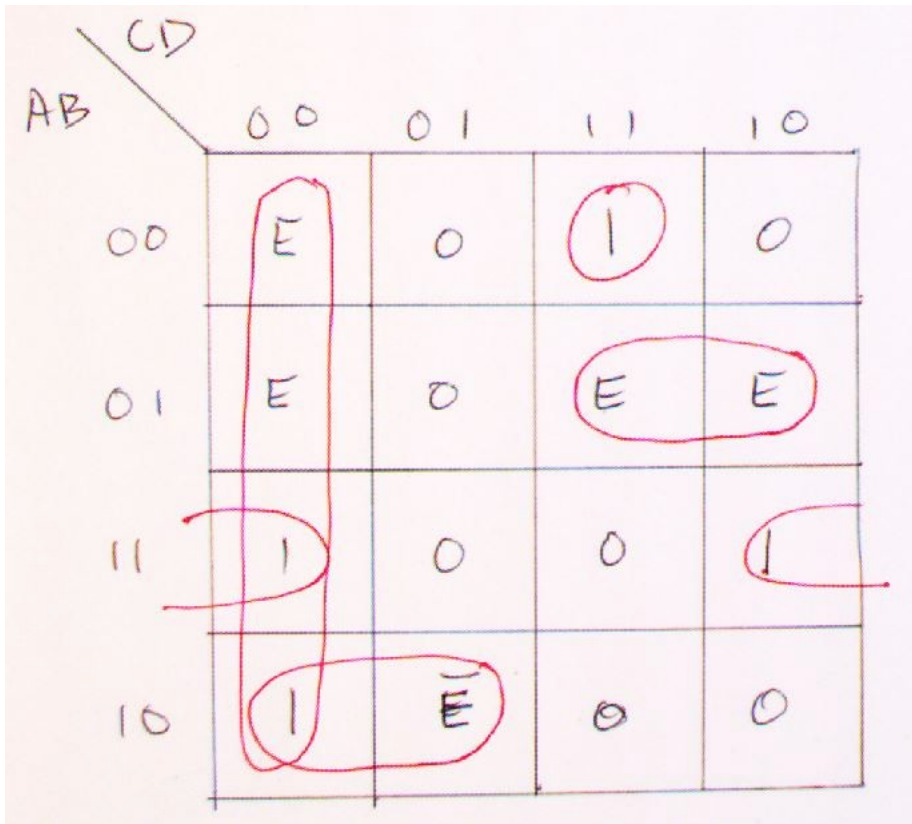
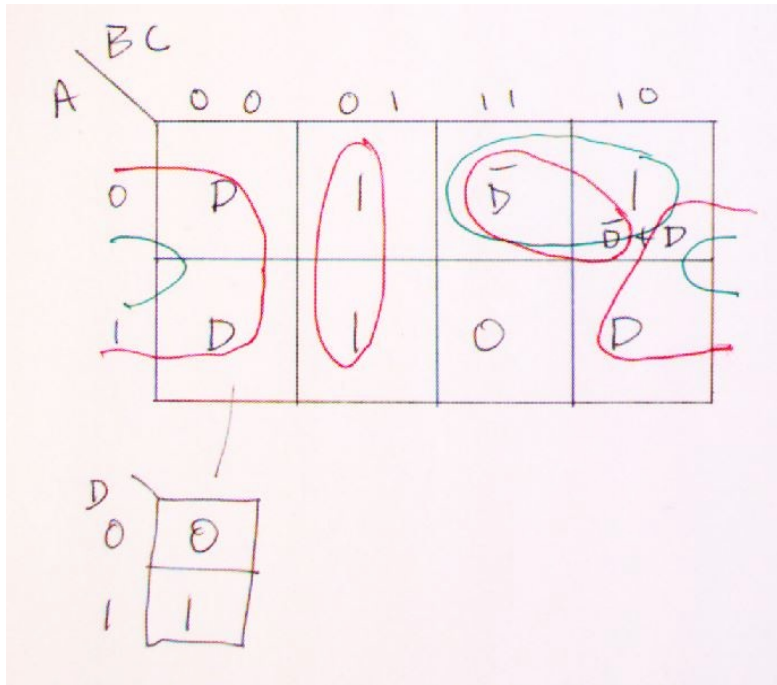
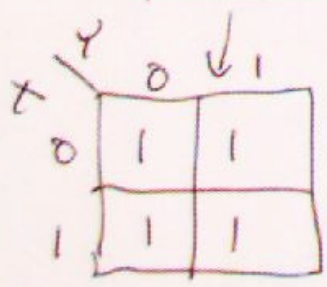
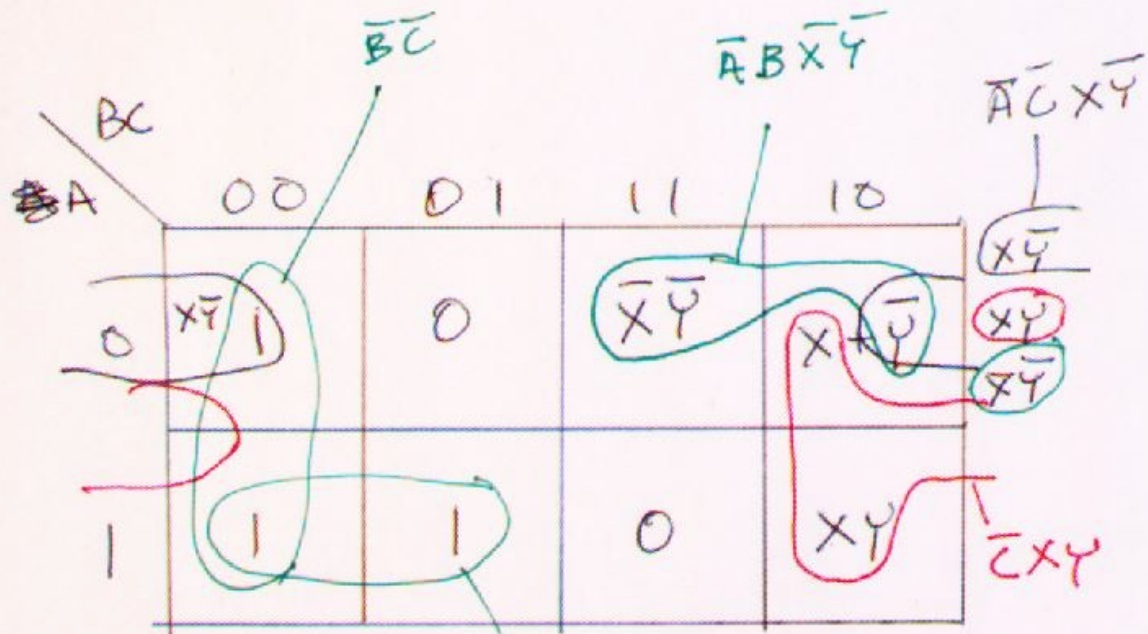


ENGR-354 Visuals from class on Wednesday 9/30/20 (plus a couple more)





- $\bar{x}\bar{y}$
- $\bar{x}y$
- $x\bar{y}$
- $x\bar{y}$

$$F = A\bar{B} + \bar{B}\bar{C} + \bar{A}\bar{B}\bar{x}\bar{y} + \bar{A}\bar{C}\bar{x}\bar{y} + \bar{C}x\bar{y}$$

$$f(A, B, C, D) = \sum m(3, 6, 9, 10, 11) + \phi(0, 1, 4, 7, 8)$$

$\bar{A}BC$

$\bar{A}BC$

D	0	1
0	1	$\phi$
1	$\phi$	1

D	0	$\phi$
0	$\phi$	1
1	0	0

CELL 3 CAN BE EITHER 1 (ONE) OR  $\bar{D}$

		BC			
		00	01	11	10
A	0	$\phi$	D	$\phi + \bar{D}$	$\phi \bar{D}$
	1	$\phi + D$	1	0	0
		0	1	3	2
		4	5	7	6

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

$\bar{B}D$

$A\bar{B}$

D	0	$\phi$	$\bar{D}$
1	1	1	D

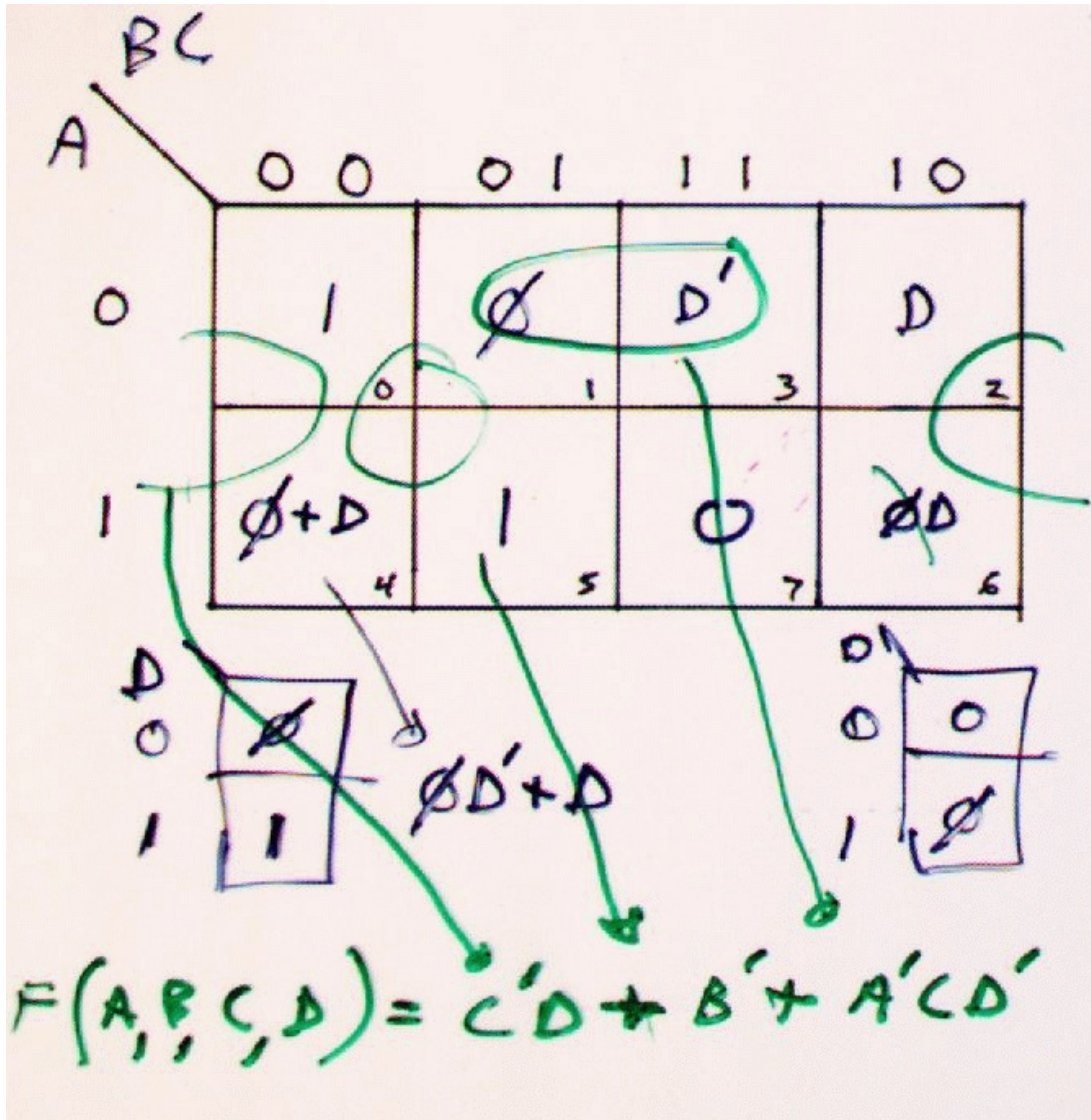
(a)

$f = \bar{A}\bar{B} + \bar{B}D + \bar{A}B\bar{D}$

OR  $\rightarrow f = \bar{A}\bar{B} + \bar{B}D + \bar{A}BC$

TWO EQUIVALENT SOLUTIONS

Here is another example of a looped out entered variable map with don't cares



A standard k-map showing both SOP and POS loop-out and resulting “cost” to construct a logic circuit for each.

Blue loops are SOP and red loops are POS

