

HW # 5  
ENGR-354  
Due Monday 9/28/20

Use the variable naming and cell numbering as shown here for 3 variable and 4 variable maps:

		a b			
		00	01	11	!0
c	0				
	1				
		0	2	6	4
		1	3	7	5

f =

		a b			
		00	01	11	!0
cd	00				
	01				
	11				
	!0				
		0	4	12	8
		1	5	13	9
		3	7	15	11
		2	6	14	10

f =

- 1a) Use a K-map to find minimum SOP logic for  $F(a,b,c) = \sum m(1, 2, 4, 5, 6)$
- 1b) Repeat 1a but find minimum POS logic
- 2) Use a K-map to find minimum SOP and POS functions for the following functions that are incompletely specified, i.e. they contain don't cares:
  - a)  $f(a, b, c) = \sum m(0, 1, 2, 7) + \emptyset(3, 5)$  where  $\emptyset$  is don't care
  - b)  $g(a, b, c) = \sum m(0, 1, 5, 7) + \emptyset(2, 4)$
- 3) Use a K-map to find minimum SOP functions for the following function:
 
$$h(a, b, c, d) = \sum m(0, 3, 6, 11, 13, 15) + \emptyset(5, 8, 10, 14)$$