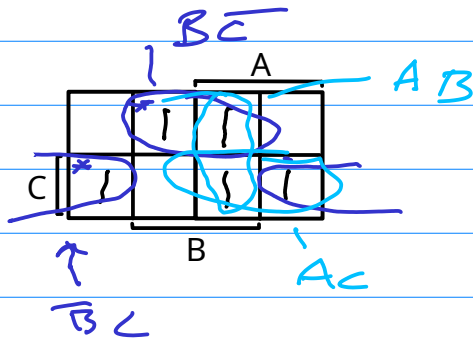


Represent $f(A, B, C) = \sum m(1, 2, 5, 6, 7)$ + min. SOP

1



$$F = \overline{B}C + \overline{B}C + AB + AC$$

2

Express f in canonical maxterm form
Short hand + algebraic

$$f(A, B, C) = \prod M(0, 3, 4)$$

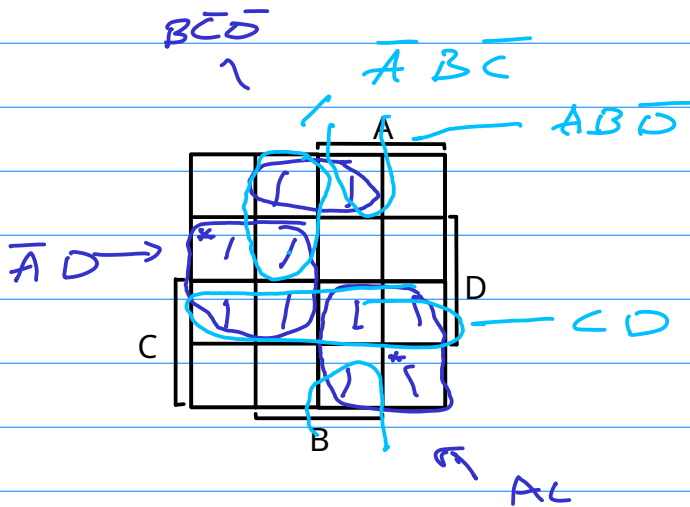
$$f = (A+B+C)(A+\overline{B}+\overline{C}) + \overline{A} + \overline{B} + \overline{C}$$

3

Implement $f = \sum m(1, 3, 4, 5, 7, 10, 11, 12, 14, 15)$

hazard free

expression



$$A\overline{D} + AC + B\overline{C}\overline{D} + CD + \overline{A}\overline{B}\overline{C} + A\overline{B}\overline{D}$$

4

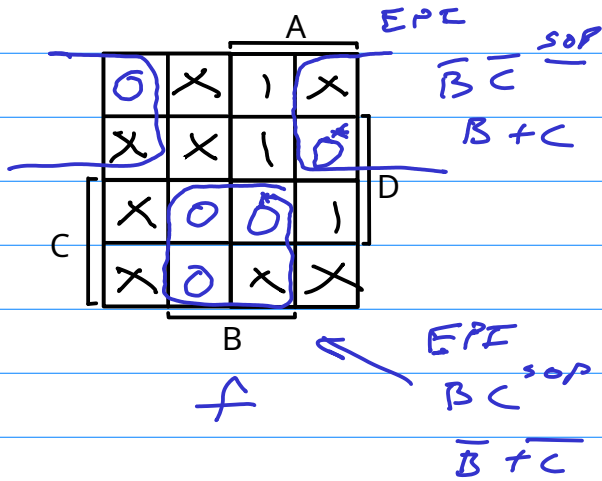
Prove $(T \text{ or } F)$ algebraically

$$\underbrace{XY + X\overline{Y}}_X = \underbrace{XY + X}_{X}$$

Combining

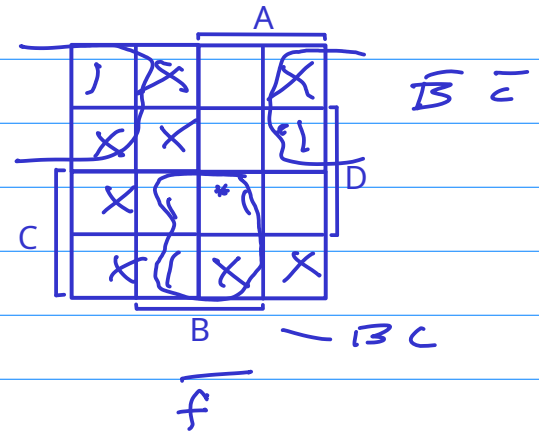
Absorption

⑤ Minimal POS



$$f = (B+C)(\overline{B}+\overline{C})$$

Solve for \overline{f}

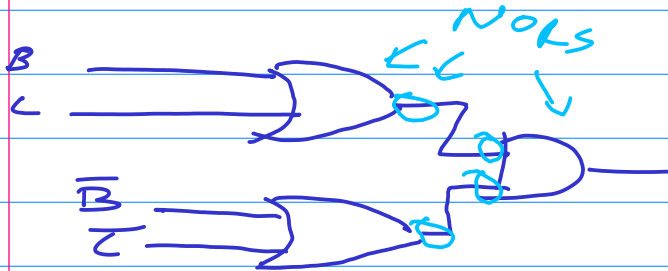


$$\overline{f} = \overline{B}\overline{C} + \overline{B}C$$

$$f = (\overline{B}+\overline{C})(\overline{B}+C)$$

⑥ Cost $\rightarrow 3+6=9$

⑦ \rightarrow NAND-NAND or NOR-NOR draw best



Q-1 aka tabel minimal sop
 $f(A, B, C, D) = \sum m(0, 4, 6, 8, 13) + d(1, 5, 14)$

0	0000 ✓	000- ✓	0-0-
1	0001 ✓	000- ✓	0-0-
4	0100 ✓	0-00 ✓	
8	1000 ✓	0-01 ✓	
5	0101 ✓	010- ✓	
6	0110 ✓	01-0	
13	1101 ✓	-101	
14	1110 ✓	-110	

II

	EPZ	0	4	6	8	13
1000	0, 8	x			x	
01-0	4, 6		x	x		
-101	5, 13					x
-110	6, 14			x		
0-0-	0, 4, 5	x	x			

$$f = \overline{B}\overline{C}\overline{D} + \overline{A}B\overline{D} + B\overline{C}D$$

BLANK K-MAPS

