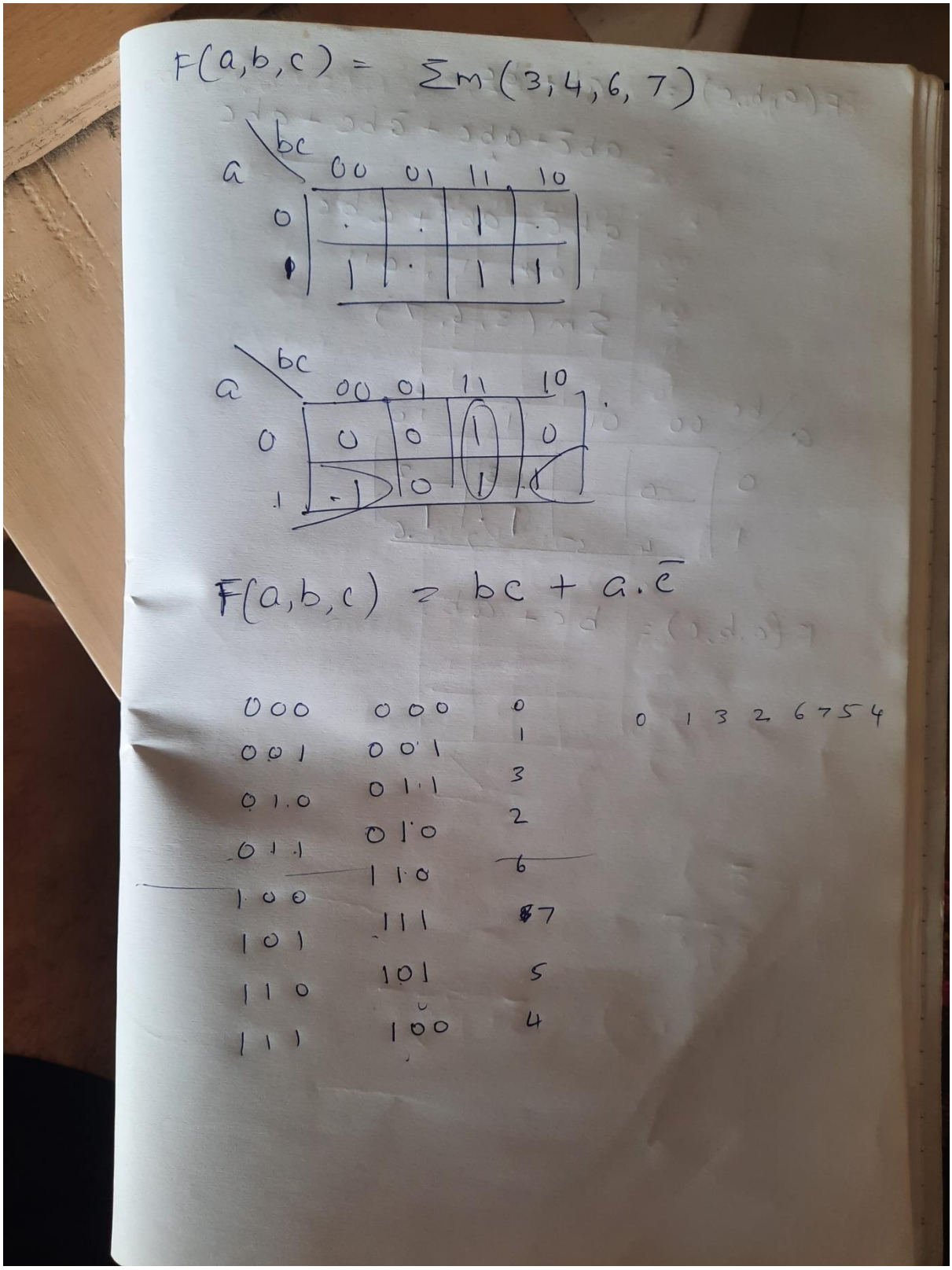
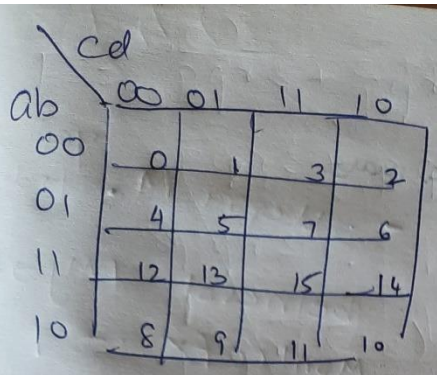
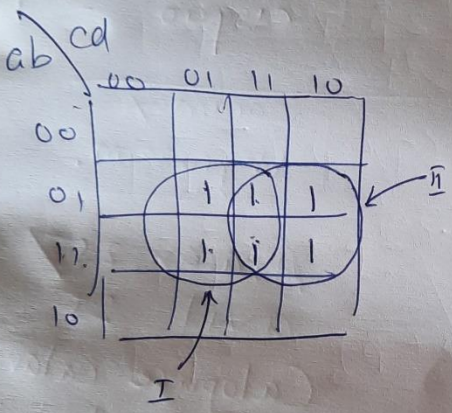
Problem1: F(a,b,c) = ∑m(3, 4, 6, 7)



Problem2: F(a,b,c,d) = ∑m(5, 6, 7, 13, 14, 15)



$$F(a,b,c,d) = \Sigma m(5,6,7,13,14,15)$$

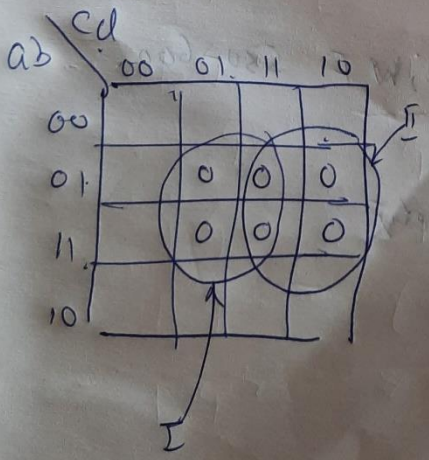


$I = bd + \cancel{b}$

$II = bc$

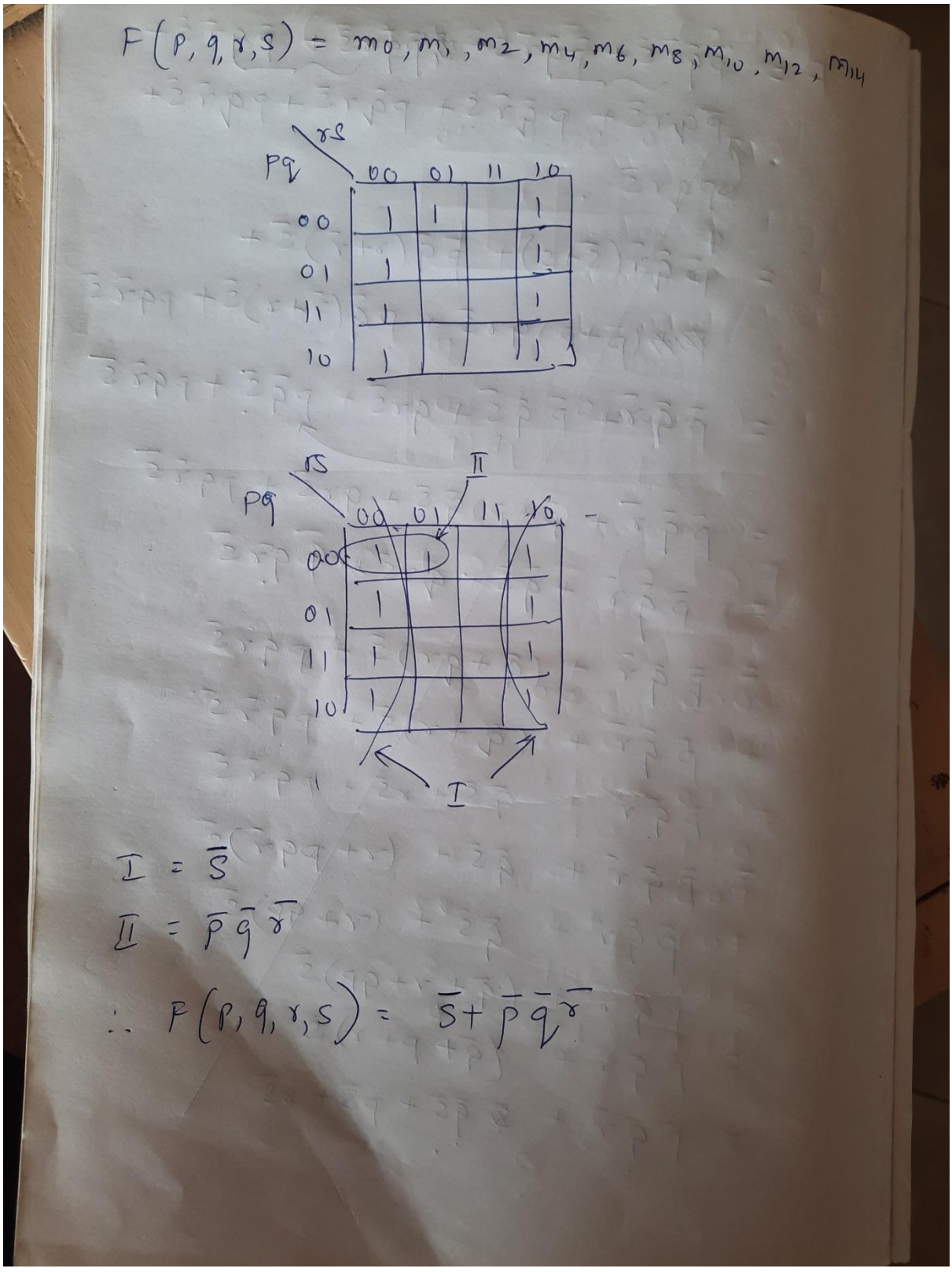
$I + II = bd + bc$

$$F(a,b,c,d) = \Pi M(5,6,7,13,14,15)$$

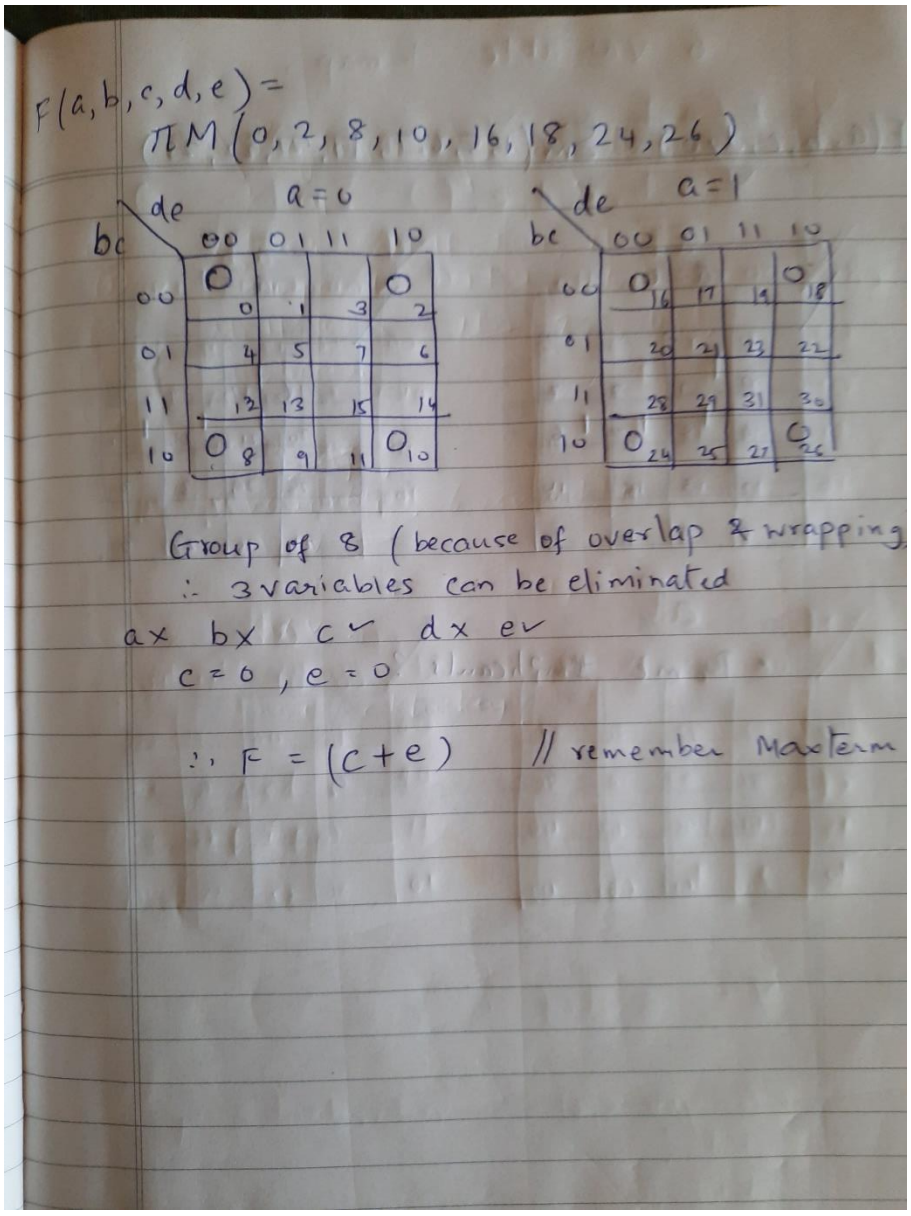


$I = (\bar{b} + \bar{d}) \cdot (\bar{b} + \bar{c})$

Problem3: F(p, q, r, s) = m0, m1, m2, m4, m6, m8, m10, m12, m14

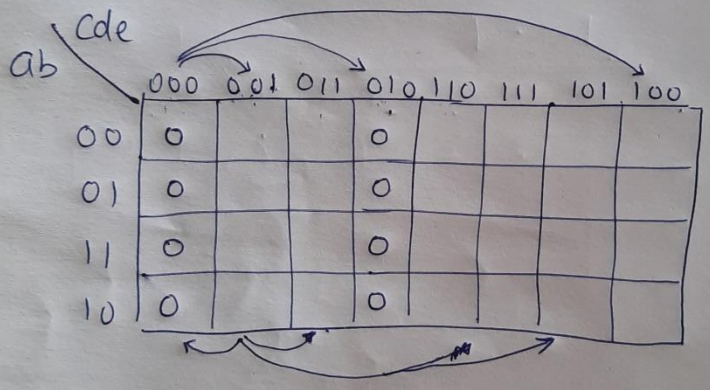


Five Variable K Maps:



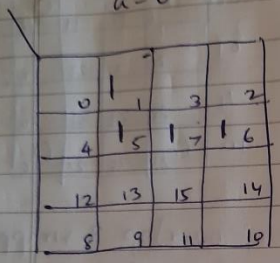
ab \ cde	000	001	011	010	110	111	101	100
00	0	1	3	2	6	7	5	4
01	8	9	11	10	14	15	13	12
11	24	25	27	26	30	31	29	28
10	16	17	19	18	22	23	21	20

$$F(a,b,c,d,e) = \overline{\Pi}M(0,2,8,10,16,18,24,26)$$

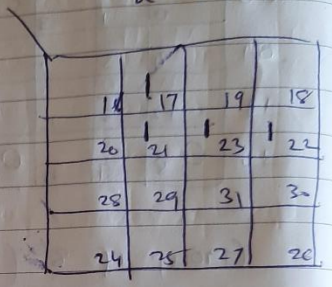


$F(a,b,c,d,e) = \Sigma m(1,5,6,7,17,21,22,23)$

$a = 0$



$a = 1$



- Prime Implicants ?

a = 0

bc \ de	00	01	11	10
00	0	1	3	2
01	4	5	7	6
11	12	13	15	14
10	8	9	11	10

a = 1

bc \ de	00	01	11	10
00	16	17	19	18
01	20	21	23	22
11	28	29	31	30
10	24	25	27	26

PI1 = (1, 5, 17, 21) = $\bar{b} \cdot \bar{d} \cdot e$

PI2 = (5, 7, 21, 23) = $\bar{b} \cdot c \cdot e$

PI3 = (6, 7, 22, 23) = $\bar{b} \cdot c \cdot d$

5 VARIABLE KMAP

Y(a,b,c,d,e) = ∑m(4,5,7,12,13,21,23)

A=0

1	**1**	**1**	
1	**1**		

A=1

	1	**1**	

Answer: **b’ce + a’cd’**