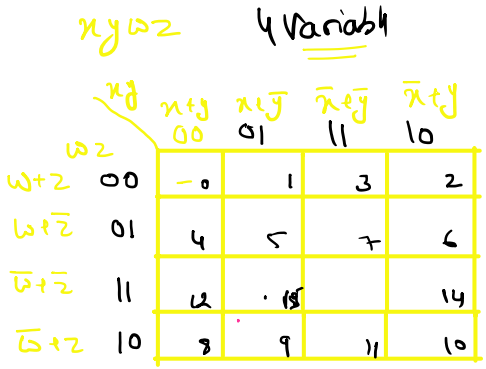
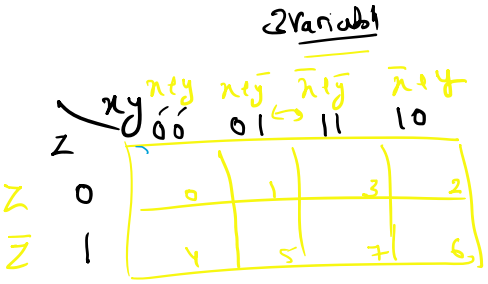
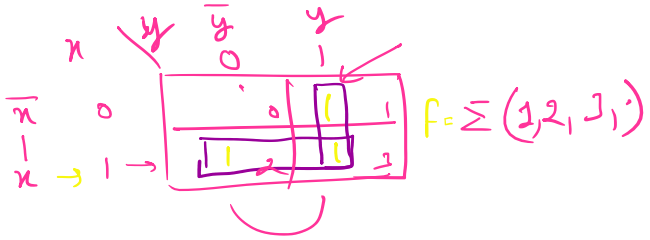


1 pair

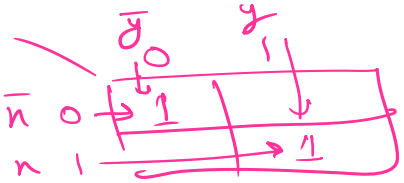


Rule → Select + adjust

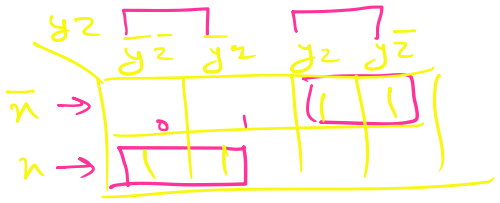
(2) → Single, 2, 4, 8, 16



x + y Ans



⇒ x̄ȳ + xy Ans

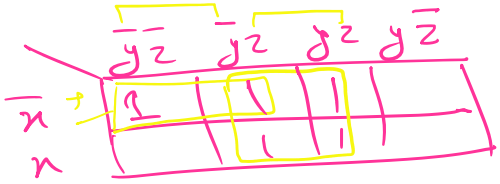


Σ(2,3,4,5)

z + z̄

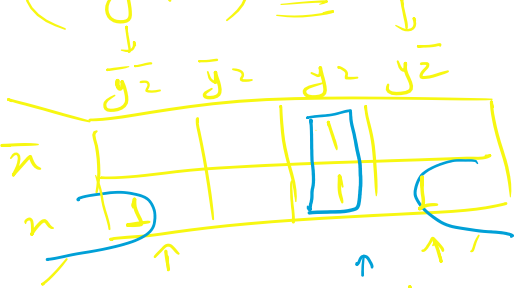
ȳ + y = ȳ

Ans ⇒ xȳ + x̄y Ans



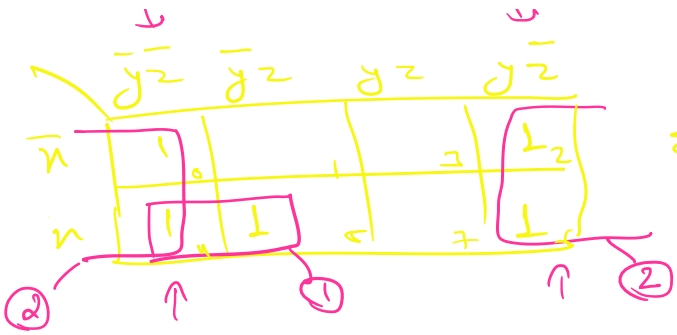
Σ(0,1,3,5,7)

(x̄ȳ + z) Ans



Σ(1,4,6,7)

⇒ yz + xz̄ Ans

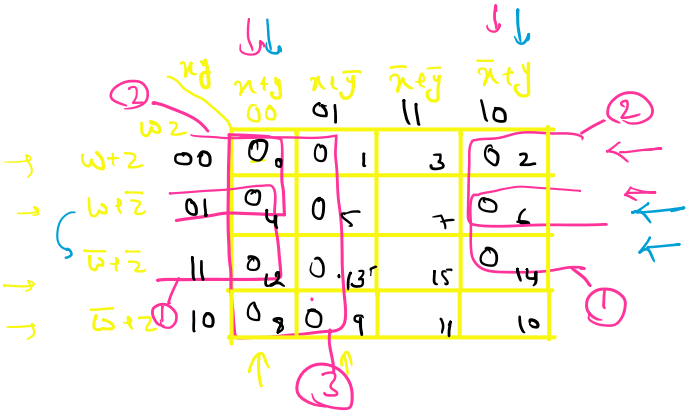


$$F(0,2,4,5,6)$$

$$F = (x\bar{y} + \bar{z})$$ Ans

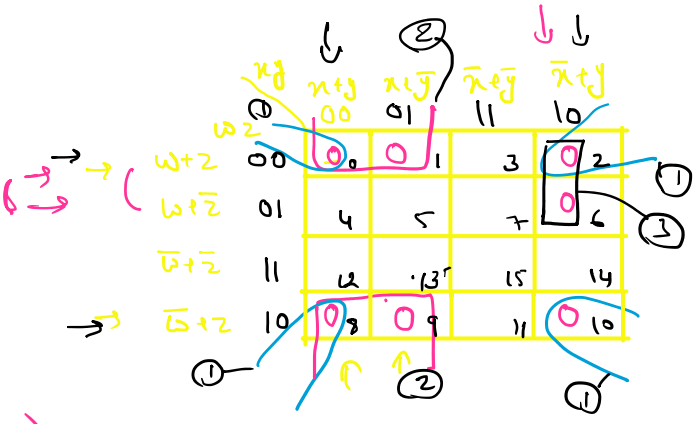
K-Map Part-3

POS

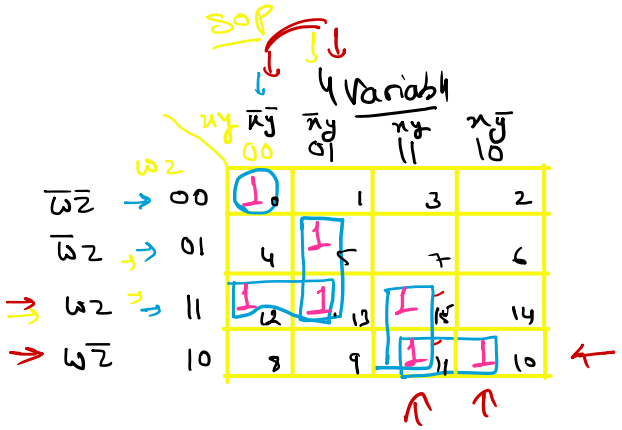


$$F = \pi M(0,1,2,6,14,4,5,12,13,8,9)$$

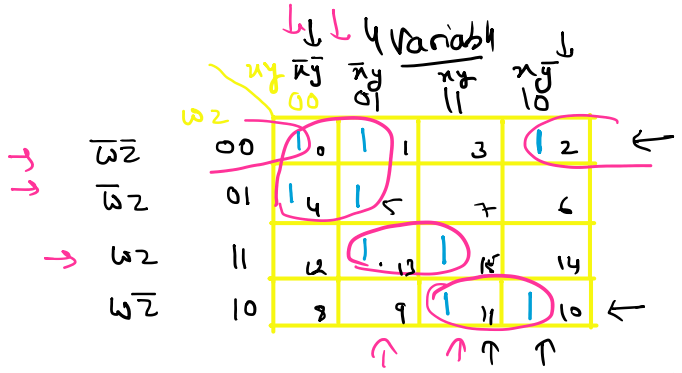
$$F = (x)(w+y)(y+\bar{z})$$ Ans



$$F = (z+y)(z+x)(\bar{x}+y+w)$$ Ans



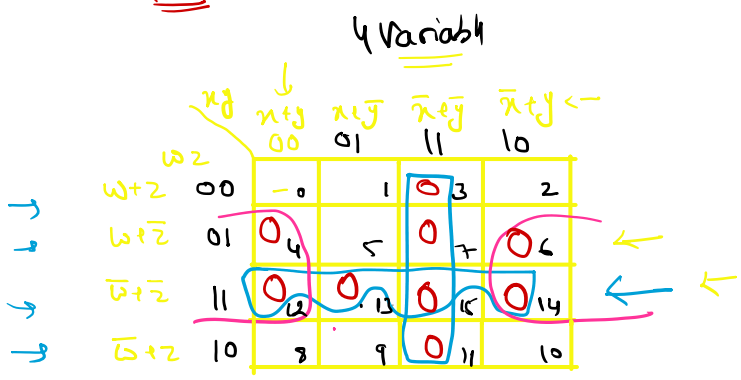
$$F = (\bar{w}\bar{z}\bar{x}\bar{y}) + (z\bar{x}y) + (wz\bar{x}) + (wxy) + (x w\bar{z})$$ Ans



$(\bar{w}\bar{x}) + (wzy) + (w\bar{z}x) + (\bar{x}z\bar{y})$

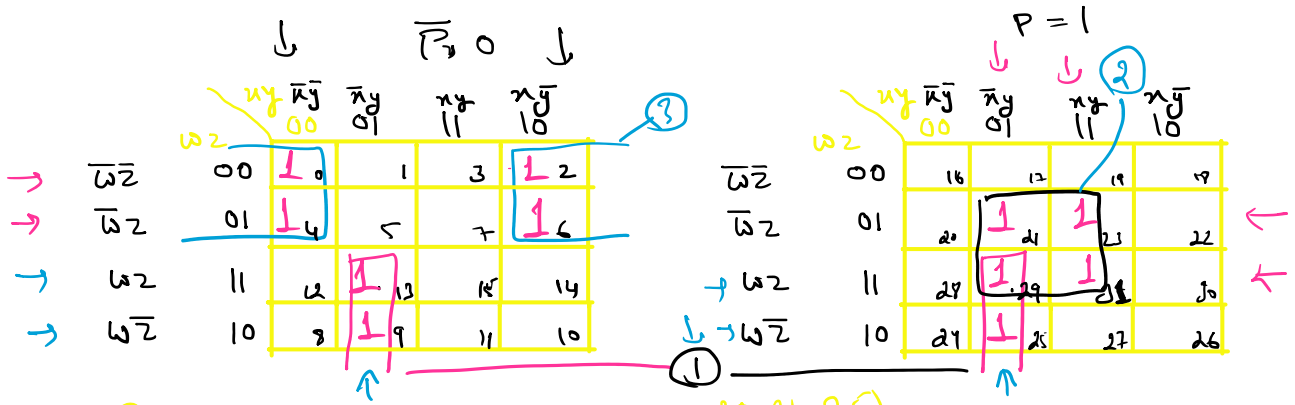
Ans

POS



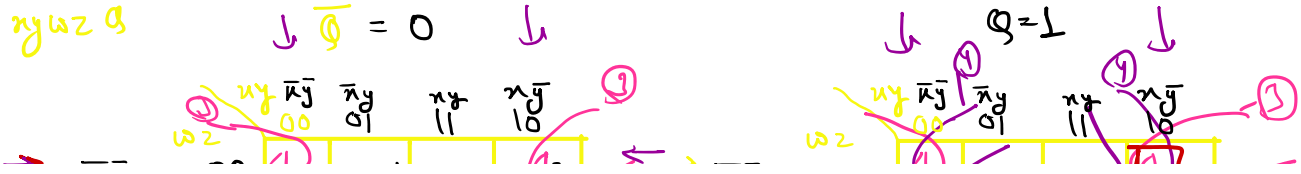
$(\bar{x}+\bar{y})(z+\bar{w})(\bar{z}+y)$ Ans

5 Variable K-MAP (p w z y x)



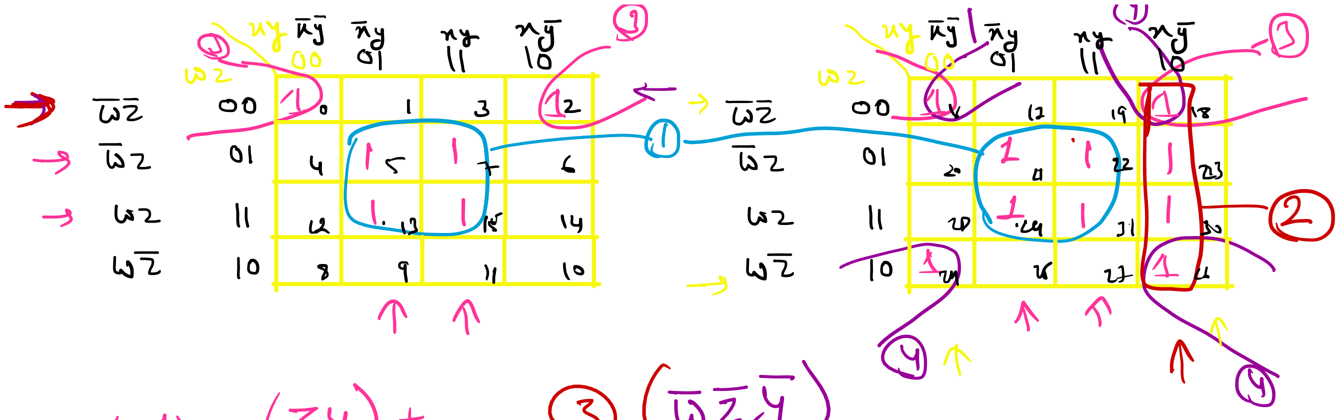
$\sum m(13,9,0,4,2,6,21,23,29,31,25)$

① $(w\bar{x})$ + ② (pzy) + ③ $(\bar{p}\bar{w}\bar{y})$



wz \ xy	$\bar{x}\bar{y}$ 00	$\bar{x}y$ 01	xy 11	$x\bar{y}$ 10
$\bar{w}\bar{z}$ 00	1 (0)	1	3	1 (2)
$\bar{w}z$ 01	4	1 (5)	1 (7)	6
wz 11	12	1 (13)	1 (15)	14
$w\bar{z}$ 10	8	9	11	10

wz \ xy	$\bar{x}\bar{y}$ 00	$\bar{x}y$ 01	xy 11	$x\bar{y}$ 10
$\bar{w}\bar{z}$ 00	1 (16)	17	19	1 (18)
$\bar{w}z$ 01	20	1 (21)	1 (23)	1 (22)
wz 11	28	1 (29)	1 (31)	1 (30)
$w\bar{z}$ 10	1 (24)	25	27	1 (26)



(1) → (zy) + (3) $(\bar{w}\bar{z}\bar{y})$

(2) → $(\phi x\bar{y})$ + (4) $(\phi \bar{z}\bar{y})$

$\Rightarrow zy + \phi x\bar{y} + \bar{w}\bar{z}\bar{y} + \phi\bar{z}\bar{y}$ Ans

K-MAP Doubt Class

$f(x, y, w, z)$

$f(w, z, x, y)$ ✓

wz \ xy	$x+y$ 00	$x+\bar{y}$ 01	$\bar{x}+\bar{y}$ 11	$\bar{x}+y$ 10
$w+z$ 00	0	1	3	2
$w+\bar{z}$ 01	4	5	7	6
$\bar{w}+\bar{z}$ 11	12	13	15	14
$\bar{w}+z$ 10	8	9	11	10

$f(w, z, x, y)$ ✗

$f(x, y, w, z)$ →

SOP

POS

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

$f(x, y, w, z) = \Sigma(0, 1, 2, 3, 7, 15)$

wz \ xy	00	01	11	10
00	0	4	12	8
01	1	5	13	9

why?

xywz

000 0 → 0