

wz 4 Variable

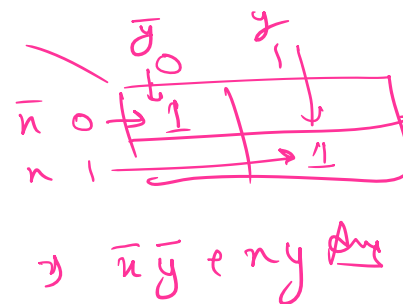
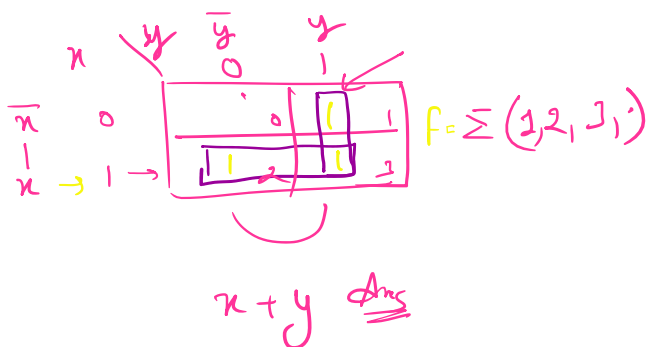
wz	$x\bar{y}$	$x\bar{y}$	$\bar{x}\bar{y}$	$\bar{x}y$	
wz	00	01	11	10	
$w+z$	00	0	1	3	2
$w+\bar{z}$	01	4	5	7	6
$\bar{w}+z$	11	12	13	15	14
$\bar{w}+\bar{z}$	10	8	9	11	10

1 pair

2 Variable

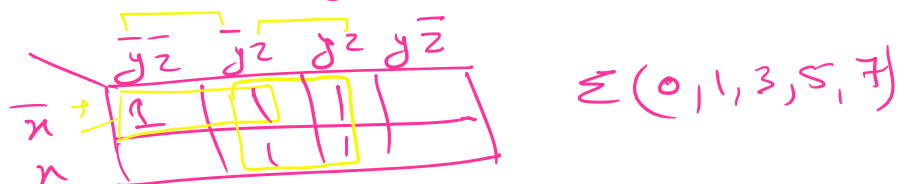
	xy	$x\bar{y}$	$\bar{x}\bar{y}$	$\bar{x}y$
z	00	01	11	10
z	0	1	3	2
\bar{z}	4	5	7	6

Rule \rightarrow select + adjust
 (2) \rightarrow single, 2, 4, 8, 16

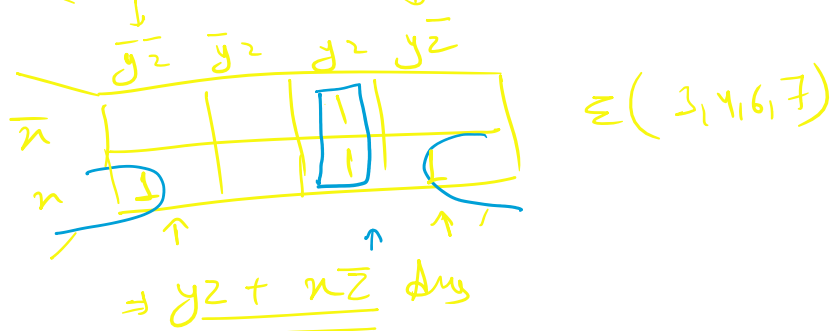


Ans $x + y + z$

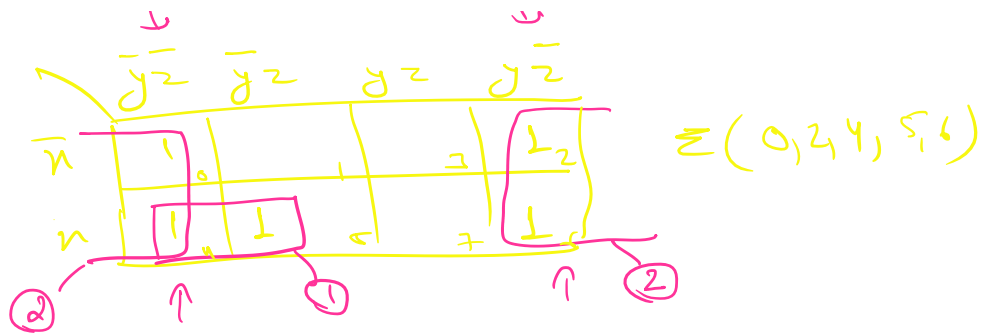
$$z + \bar{z} = 1$$



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

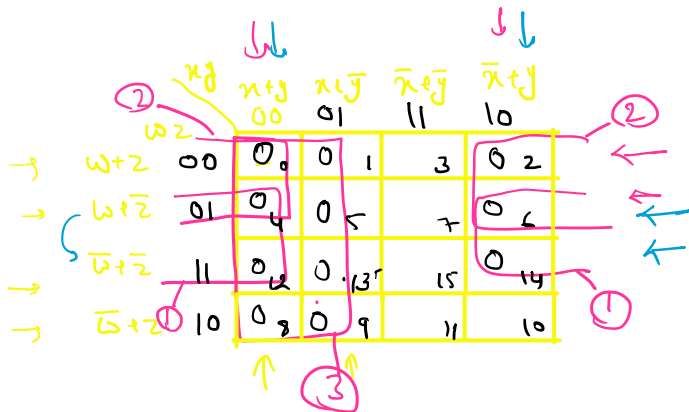


$$\bar{x}\bar{y} + x\bar{z}$$



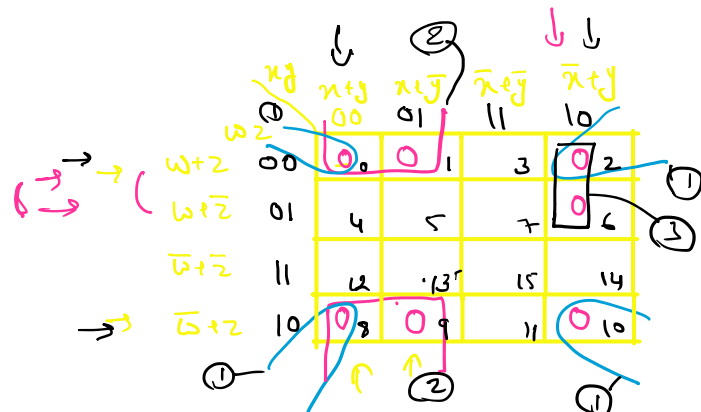
$$(1) \Rightarrow (w\bar{y} + \bar{z}) \underline{\text{Ans}}$$

KAP Qad-3
POS

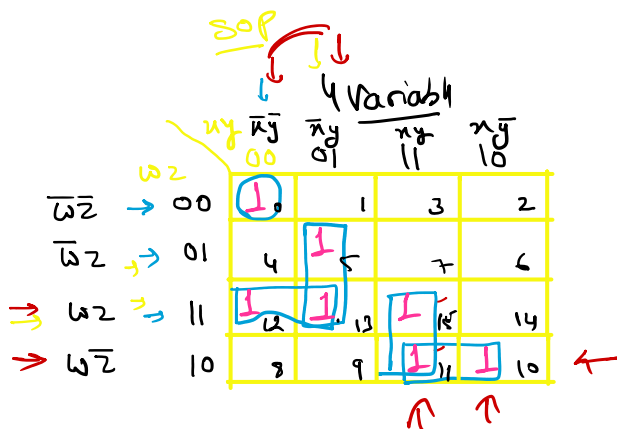


$$Q = f = \pi M(0, 1, 2, 6, 14, 4, 5, 12, 13, 9, 9)$$

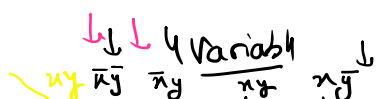
$$(3) \Rightarrow (x)(w+y)(y+\bar{z}) \underline{\text{Ans}}$$



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



$$\Rightarrow (\bar{w}\bar{z}\bar{x}\bar{y}) + (z\bar{x}y) + (wz\bar{x}) + (w\bar{x}y) + (xw\bar{z}) \underline{\text{Ans}}$$



4 Variable

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

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

Ans

POS

4 Variable

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

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

Ans

5 Variable K-MAP ($xyzp$)

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	xy	$\bar{x}\bar{y}$	$\bar{x}y$	$x\bar{y}$
	00	01	11	10
wz	00	1	3	2
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$\bar{w}z$	11	12	13	14
$\bar{w}\bar{z}$	10	8	9	10

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

② (pzy)

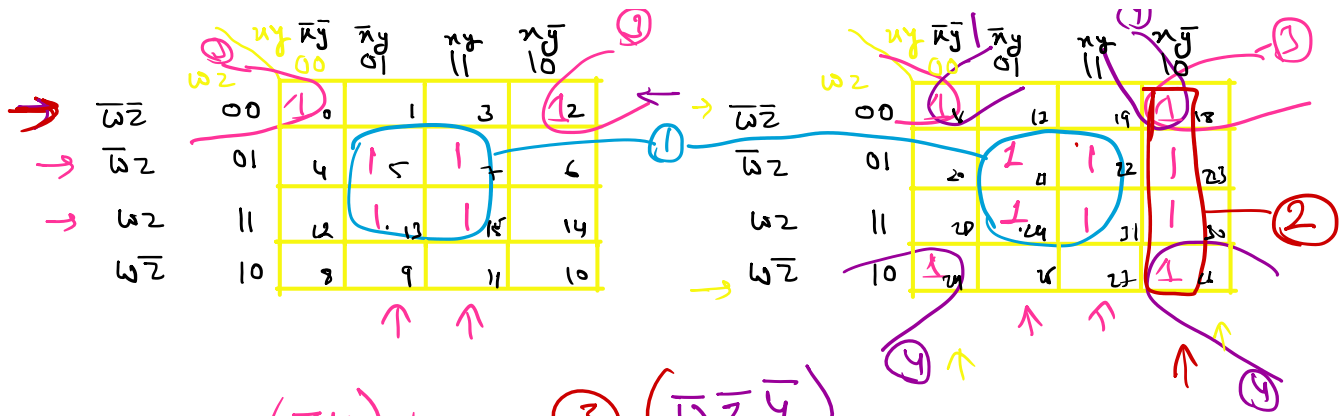
$xyzp$

$\bar{p} = 0$

$p = 1$

5 Variable K-MAP ($xyzp$)

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



(1) $\Rightarrow (zy) +$ (3) $(\bar{w}\bar{z}\bar{y})$
 (2) $\Rightarrow (x\bar{y}) +$ (4) $(x\bar{z}\bar{y})$

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

K-MAP Example Class

$\leftarrow f(x, y, \bar{w}, z)$

$\leftarrow f(w, z, x, y) \Rightarrow$

	xy	xy	x̄y	x̄y
wz	00	01	11	10
wz	00	0	1	3
wz	01	4	5	7
wz	11	12	13	14
wz	10	8	9	11

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

$f(x, y, w, z) \Rightarrow$
SOP
POS



	xy	xy	x̄y	x̄y
wz	00	01	11	10
wz	00	0	1	3
wz	01	4	5	7
wz	11	12	13	14
wz	10	8	9	11



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

	xy	xy	x̄y	x̄y
wz	00	01	11	10
wz	00	1	12	13
wz	01	4	5	7
wz	11	12	13	14
wz	10	8	9	11

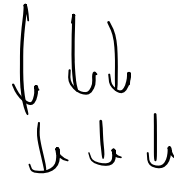


$wz =$

$xyz = 000 \rightarrow 0$

→ w_2

→ 00	→ 0	4	12	8
→ 01	①	5	13	9
→ 11	3	7	⑬	11
→ 10	②	6	14	10



$\underline{xyw_2}$

$$\begin{array}{r} 000 \rightarrow 0 \\ 000 \rightarrow 1 \\ \hline 0010 + 2 \\ 1111 \end{array}$$

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

w_2

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

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

x, y, w, z

$$\underline{1001} \rightarrow 10$$

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

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

w_2

	00	01	11	10
→ 00	0	1	12	8
→ 01	1	5	13	9
11	3	7	15	11
10	2	6	14	10

4 Variables

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

w_2

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

$f(x, y, z)$

y_2

	0	1	3	2
→ x	1	5	7	6

\underline{Row}

Kolom

w_2

	00	01	11	⑩
→ 0	0	2	6	④
→ 1	1	5	7	6

$\underline{xyw_2}$

$$\begin{array}{r} 10135 \\ 10014 \end{array}$$

→

2	0	0	2	6	4
→	1	1	3	7	5

10011