

# K-maps for maxterm



Truth Table for  $F(A,B,C) = \sum_m(0,1,2,4,5,6)$

A	B	C	F
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

Map 1 (Red lines):

A \ BC	$\overline{B}\overline{C}$	$\overline{B}C$	$B\overline{C}$	$BC$
$\overline{A}$	1	1	0	1
A	1	1	0	1

Groupings:  $\overline{A}\overline{B}$ ,  $\overline{A}C$ ,  $A\overline{B}$ ,  $AC$ . Index 4 points to the  $\overline{A}C$  group.

Map 2 (Purple lines):

A \ BC	$\overline{B}\overline{C}$	$\overline{B}C$	$B\overline{C}$	$BC$
$\overline{A}$			1	
A			0	

Groupings:  $\overline{A}BC$ ,  $ABC$ . Index 4 points to the  $\overline{A}BC$  group.

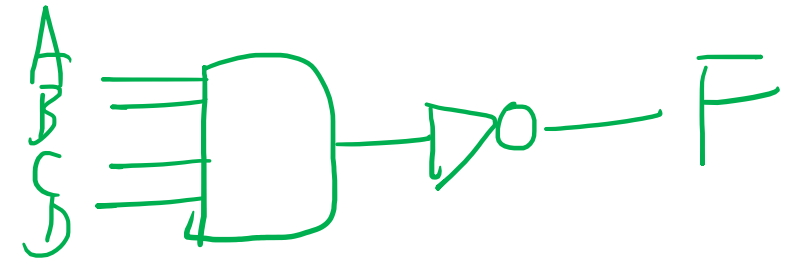
$$\overline{F} = BC$$

$$\overline{\overline{F}} = \overline{BC} \rightarrow \boxed{F = \overline{B} + \overline{C}}$$



$$F(A, B, C, D) = \sum_m \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13\}$$

	$CD$		$\bar{C}\bar{D}$		$\bar{C}D$		$CD$		$C\bar{D}$	
$AB$	$CD$		$\bar{C}\bar{D}$		$\bar{C}D$		$CD$		$C\bar{D}$	
$\bar{A}\bar{B}$	0	1	4	5	12	13	8	9	16	17
$\bar{A}B$	2	3	6	7	14	15	10	11	18	19
$A\bar{B}$	12	13	16	17	20	21	14	15	22	23
$AB$	14	15	18	19	22	23	10	11	24	25



$$F = \bar{A} + \bar{B} + \bar{C} + \bar{D}$$



$$\begin{aligned} \bar{F} &= ABCD \\ &= \underline{ABCD} \end{aligned} \leftarrow$$

$$\begin{aligned} L &= 4 \\ G &= 4 \\ G_N &= 6 \end{aligned}$$

$$\begin{aligned} L &= 4 \\ G &= 4 \\ G_N &= 8 \end{aligned}$$



$$F(A, B, C, D) = \sum_m(0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14)$$

	$\bar{C}\bar{D}$	$\bar{C}D$	$CD$	$C\bar{D}$
$\bar{A}\bar{B}$	1	1	1	1
$\bar{A}B$	1	1	1	1
$AB$	1	1	0	1
$A\bar{B}$	1	1	0	1

$$\begin{aligned}\bar{F} &= \frac{ACD}{ACD} \quad \checkmark\end{aligned}$$



Don't care

Age  $\rightarrow$  sign  $-ve$   $\leftarrow$   
unsig only +ve

