K Maps, Lab 9

From Truth Table To K Map

A	B	C	Y
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

Truth Table

K Map

	00	01	11	10
	$\bar{A}\bar{B}$	$\bar{A}\mathrm{B}$	AB	$A\bar{B}$
0 $\bar{C}$	1	1	1	0
1 C	0	1	1	1

$$\bar{A}\bar{C} + B + AC$$

Minimize the Boolean Expression Using K Map

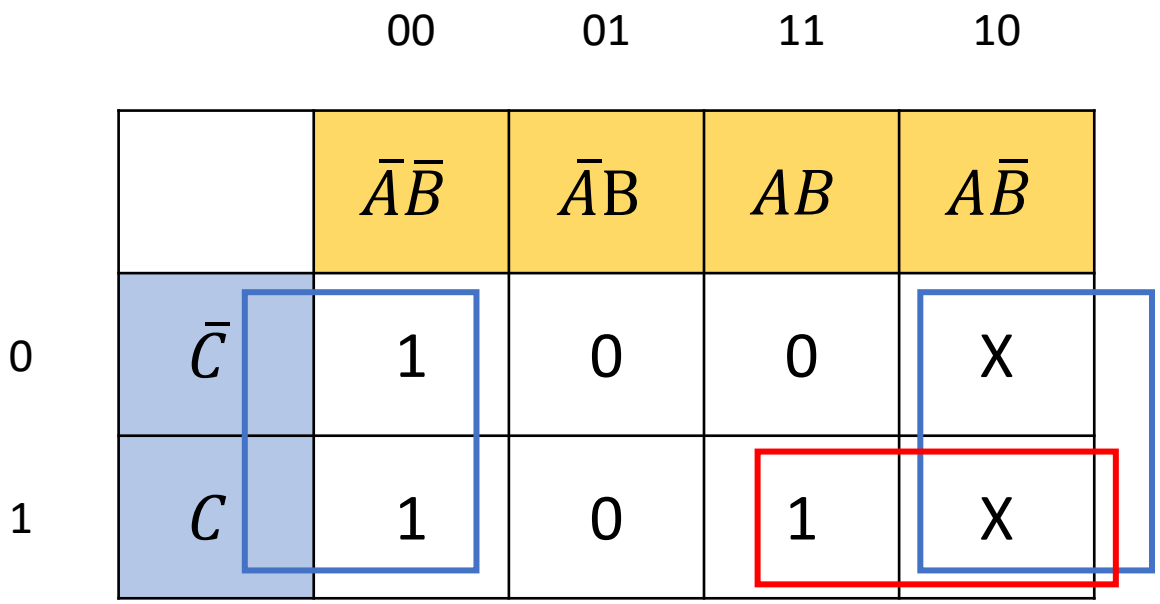
$$\bar{A}B + B\bar{C} + BC + A\bar{B}\bar{C}$$

		00	01	11	10
		$\bar{A}\bar{B}$	$\bar{A}$B	AB	$A\bar{B}$
0	$\bar{C}$	0	1	1	1
1	C	0	1	1	0

$$B + A\bar{C}$$

http://www.ee.surrey.ac.uk/Projects/Labview/minimisation/karanswers.html

Write the equivalent Minimized BE



Boolean Expression:

$$AC + \bar{B}$$

Write the equivalent Minimized BE

		00	01	11	10
		$\bar{A}\bar{B}$	$\bar{A}$B	AB	$A\bar{B}$
00	$\bar{C}\bar{D}$	0	1	1	0
01	$\bar{C}D$	0	1	1	0
11	CD	X	1	X	X
10	$C\bar{D}$	X	X	X	X

Boolean Expression:

$$B + C$$

Write the equivalent Minimized BE

		00	01	11	10
		$\bar{A}\bar{B}$	$\bar{A}$B	AB	$A\bar{B}$
00	$\bar{C}\bar{D}$	1	0	0	1
01	$\bar{C}D$	0	1	1	0
11	CD	0	X	X	0
10	$C\bar{D}$	X	0	0	X

Boolean Expression:

$$BD + \bar{B}\bar{D}$$

Write the equivalent Minimized BE

		00	01	11	10
		$\bar{A}\bar{B}$	$\bar{A}$B	AB	$A\bar{B}$
00	$\bar{C}\bar{D}$	X	0	0	X
01	$\bar{C}D$	0	1	0	0
11	CD	0	X	1	0
10	$C\bar{D}$	X	0	0	1

Boolean Expression:

$$\bar{A}BD + BCD + \bar{B}\bar{D}$$