

Lösningförslag till dugga 2 i TMEL53 Digitalteknik M 2013-02-01

1a) $F = AC + \overline{(A+B)} + BC$

A	B	C	AC	$\overline{A+B}$	BC	F
0	0	0	0	0	0	1
0	0	1	0	0	0	1
0	1	0	0	1	0	0
0	1	1	0	1	1	0
1	0	0	0	0	0	1
1	0	1	1	0	0	0
1	1	0	0	0	0	1
1	1	1	1	0	1	0

1b) $F = AC + \overline{(A+B)} + BC =$

DE MORGAN $\rightarrow = AC + \overline{A+B} + BC =$

CONSENSUS $\rightarrow = AC + \overline{A+B}$

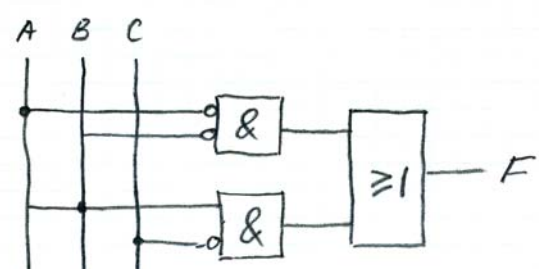
DE MORGAN $\rightarrow = AC \cdot \overline{A+B}$

DE MORGAN $\rightarrow = (\overline{A+C})(\overline{A+B}) =$

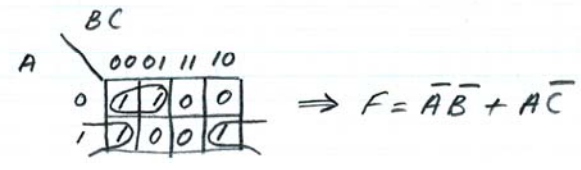
$= \overline{A}A + \overline{A}\overline{B} + \overline{C}A + \overline{C}\overline{B} =$

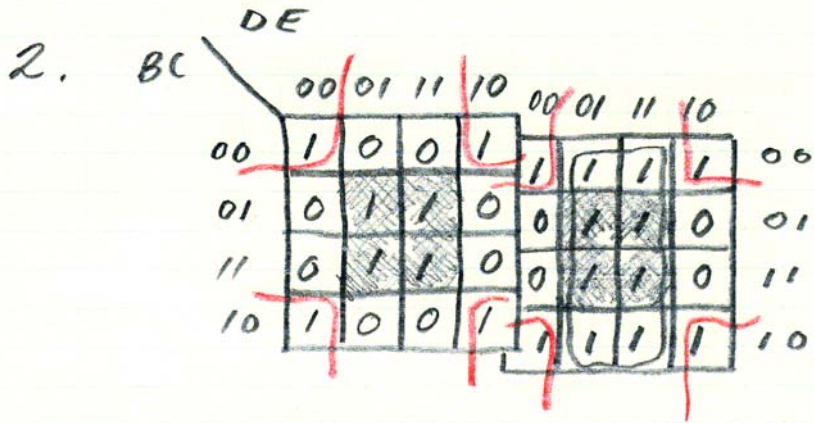
$= \overline{A}\overline{B} + \overline{C}A + \overline{C}\overline{B} =$

CONSENSUS $\rightarrow = \overline{A}\overline{B} + \overline{C}$



ALTERNATIVT, ANVÄND KARNAUGHDIAGRAM





A=0 A=1

$$F = AE + CE + \overline{C}\overline{E} =$$

$$= AE + \overline{C \oplus E}$$

A B C D E

