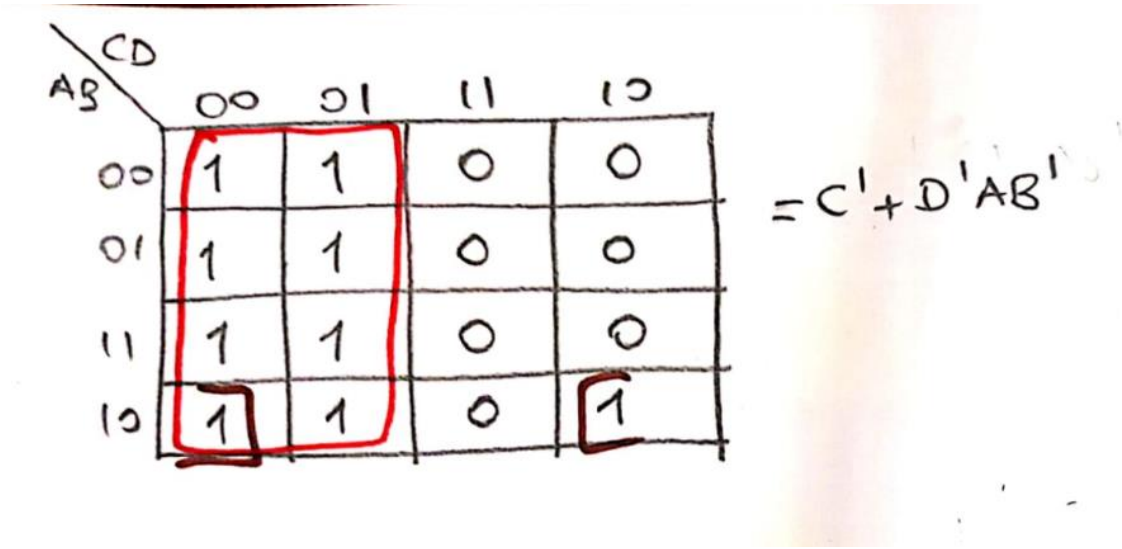
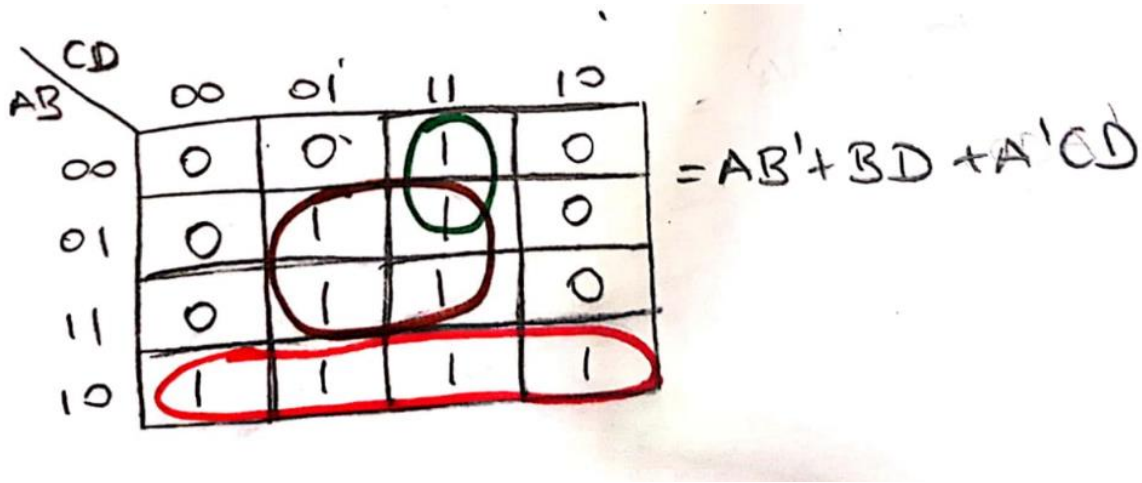
Barış Ayyıldız
1901042252

Question 1

1.(a) K-map of F_1

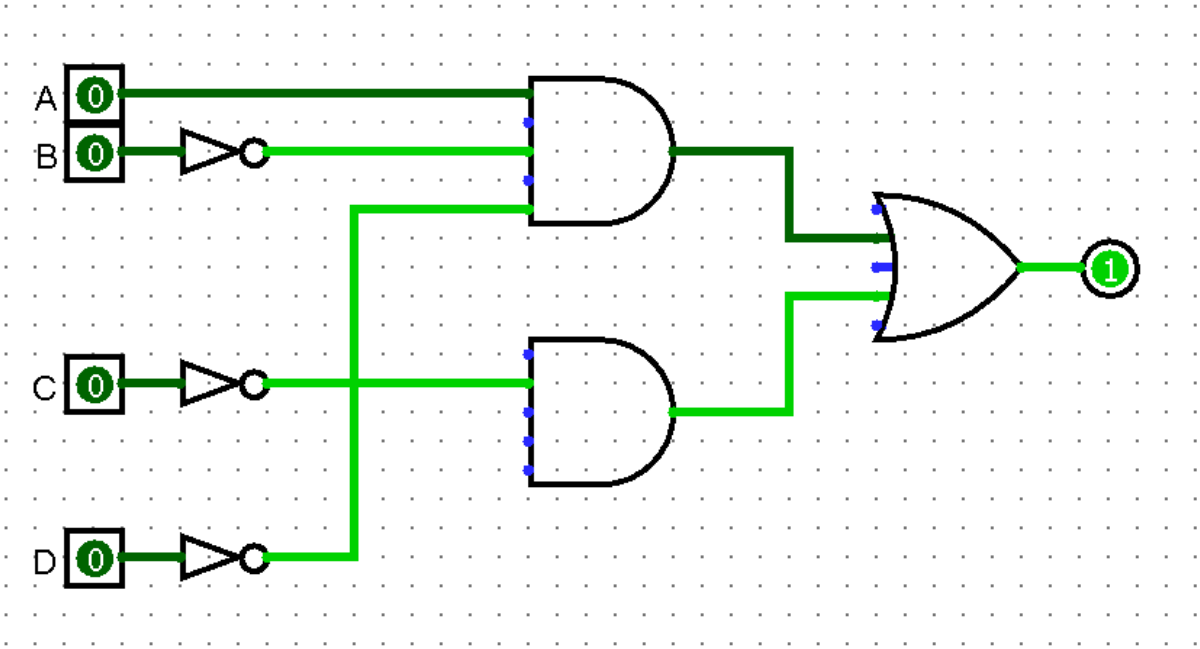


(b) K-map of F_2

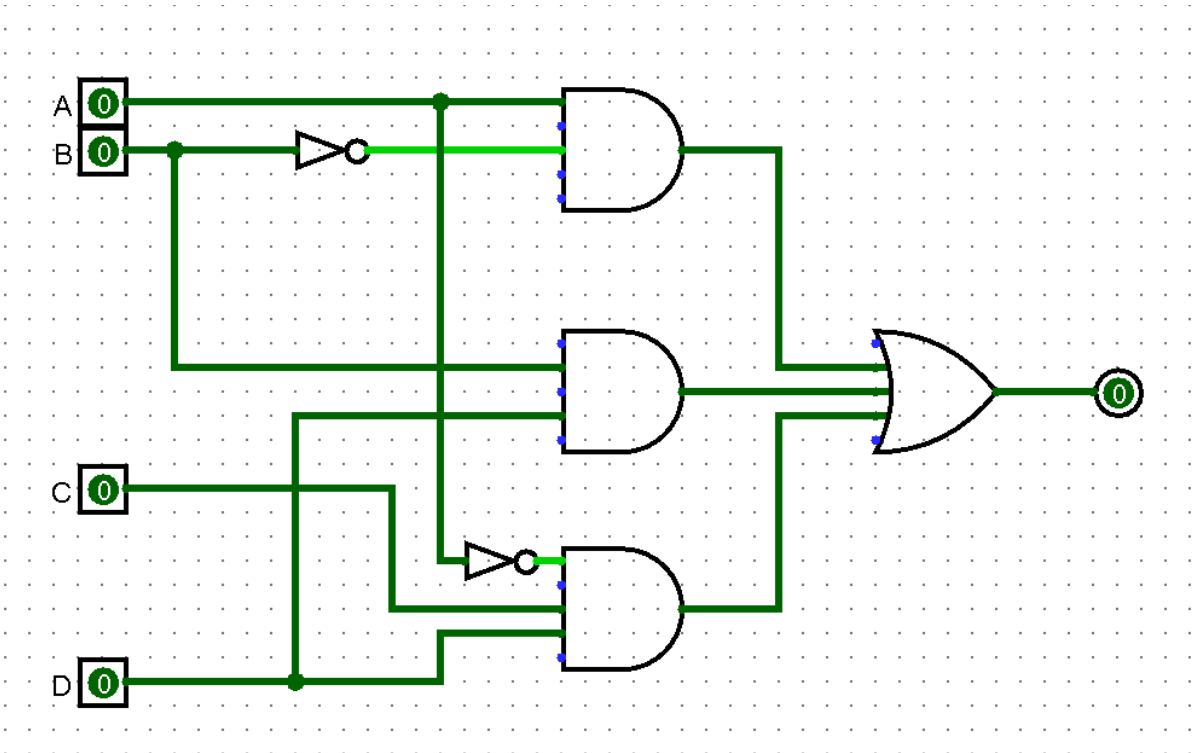


2.

Logic circuit of F_1

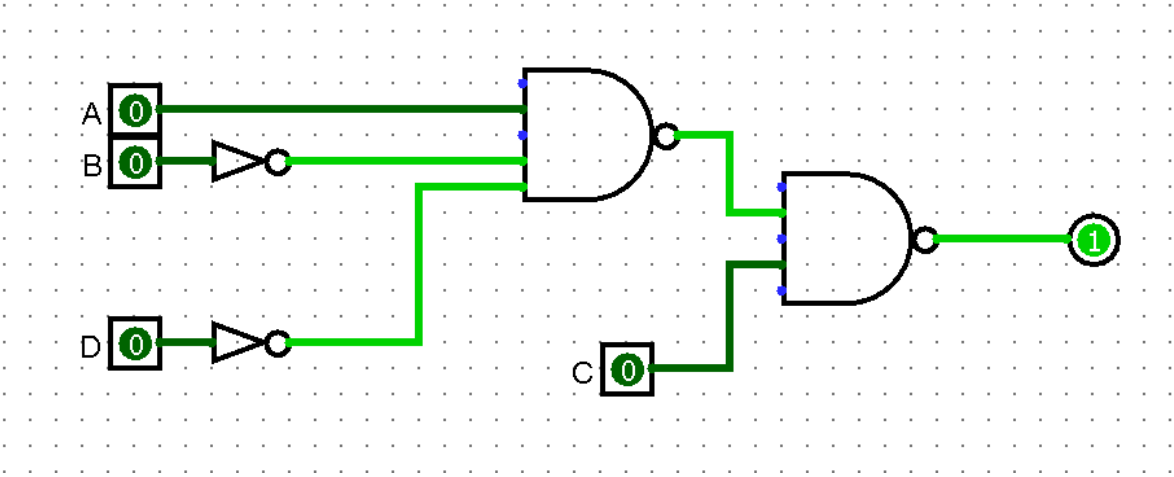


Logic circuit of F_2

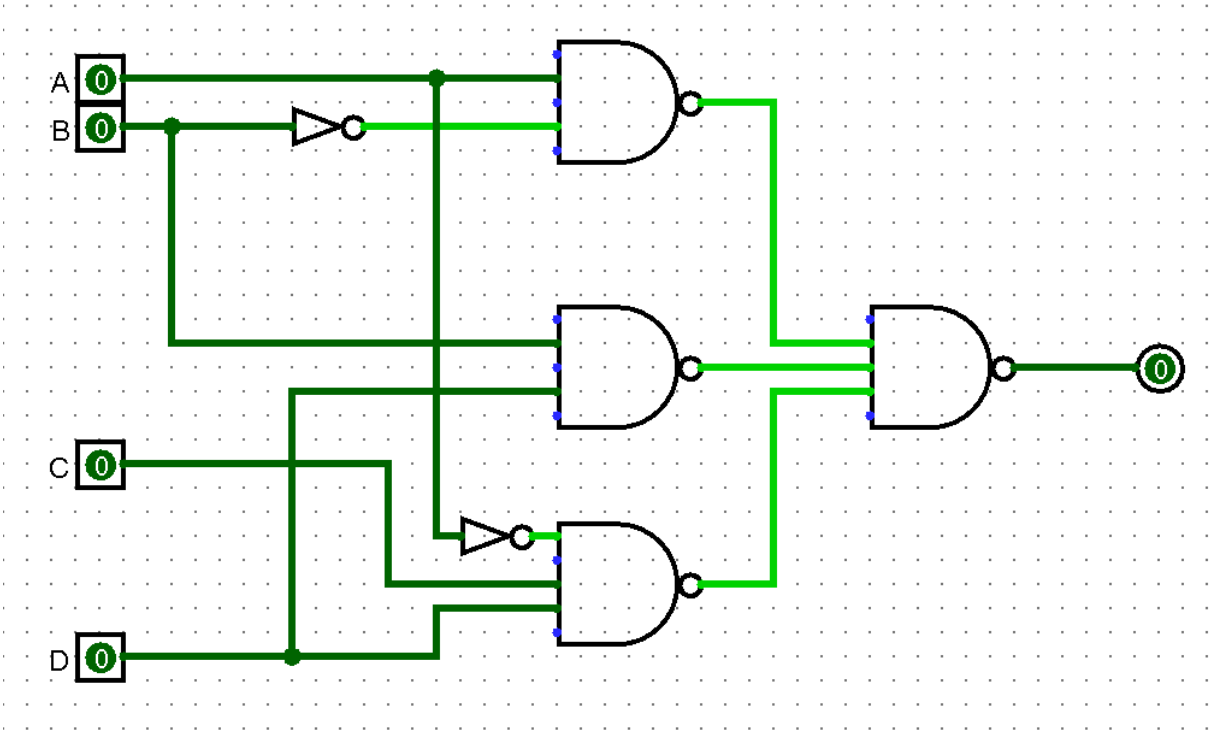


3.

Logic circuit of F_1 with NAND gates



Logic circuit of F_2 with NAND gates



Question 2

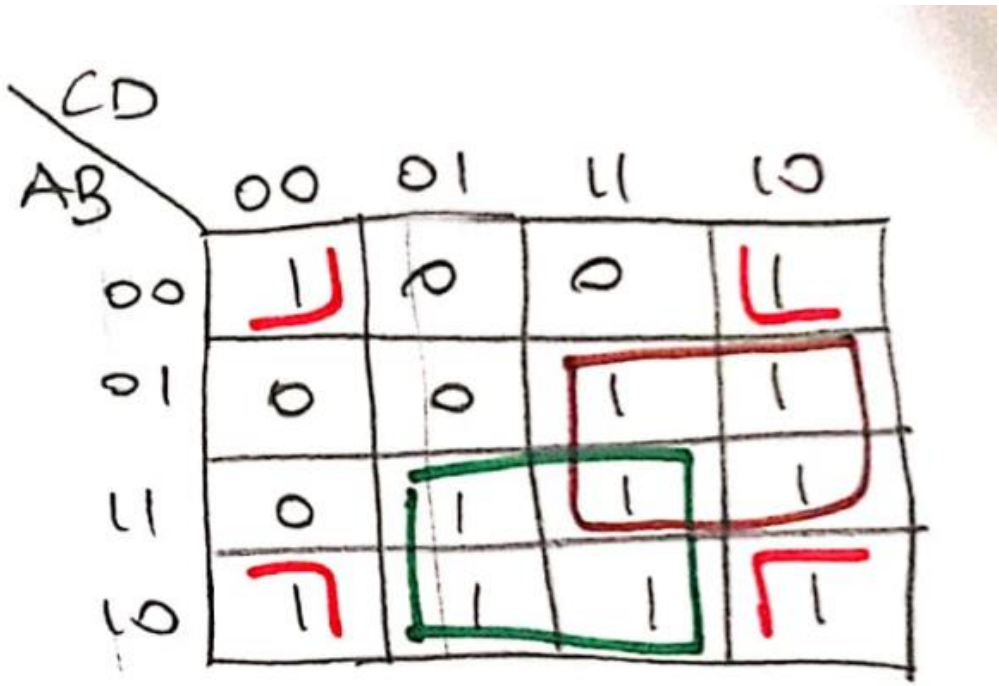
1.

$$F = AB' + AD + BC + CD' + A'B'C'D'$$

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

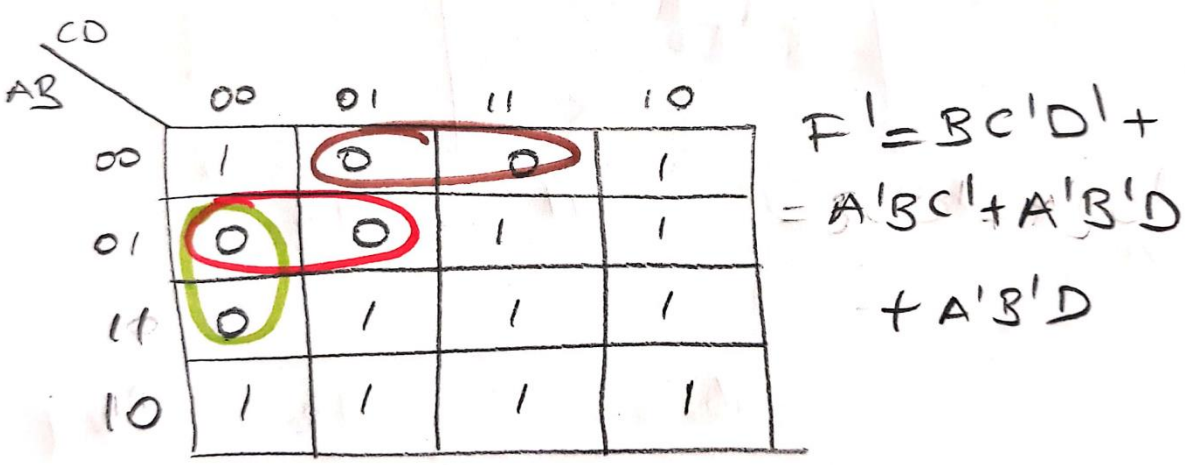
2. K-maps for F and F’

F:



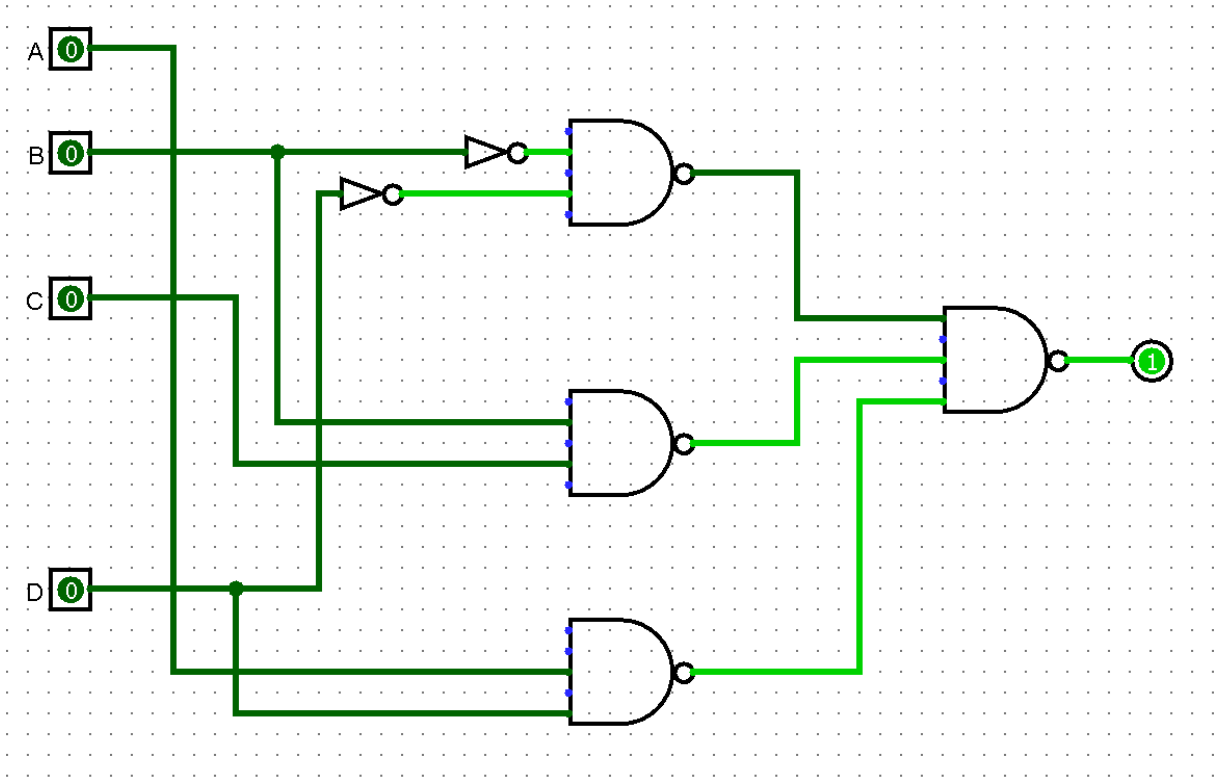
$$= B'D' + BC + AD$$

F’:



Circuits of F and F’ with NAND gates

F:



F’: