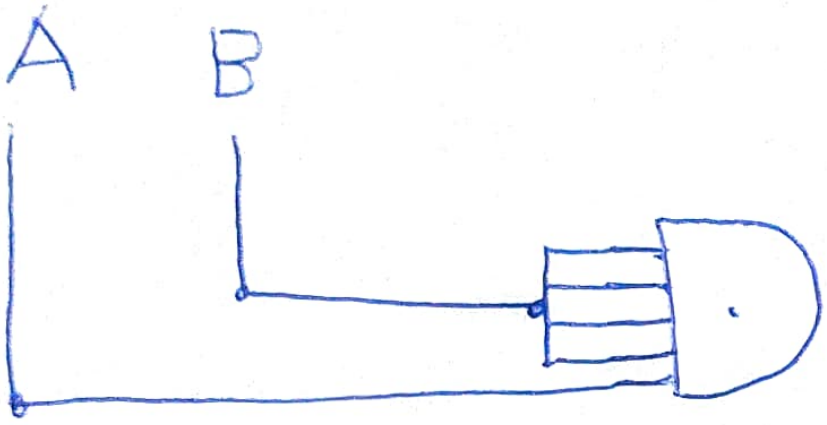
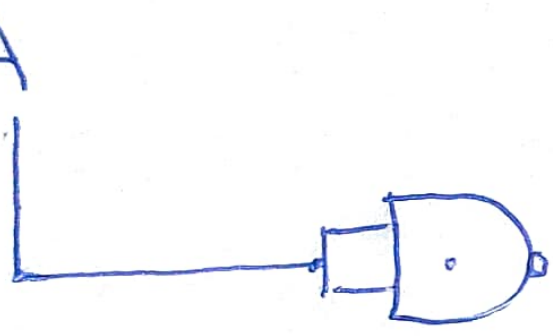
Lista Exercícios 1

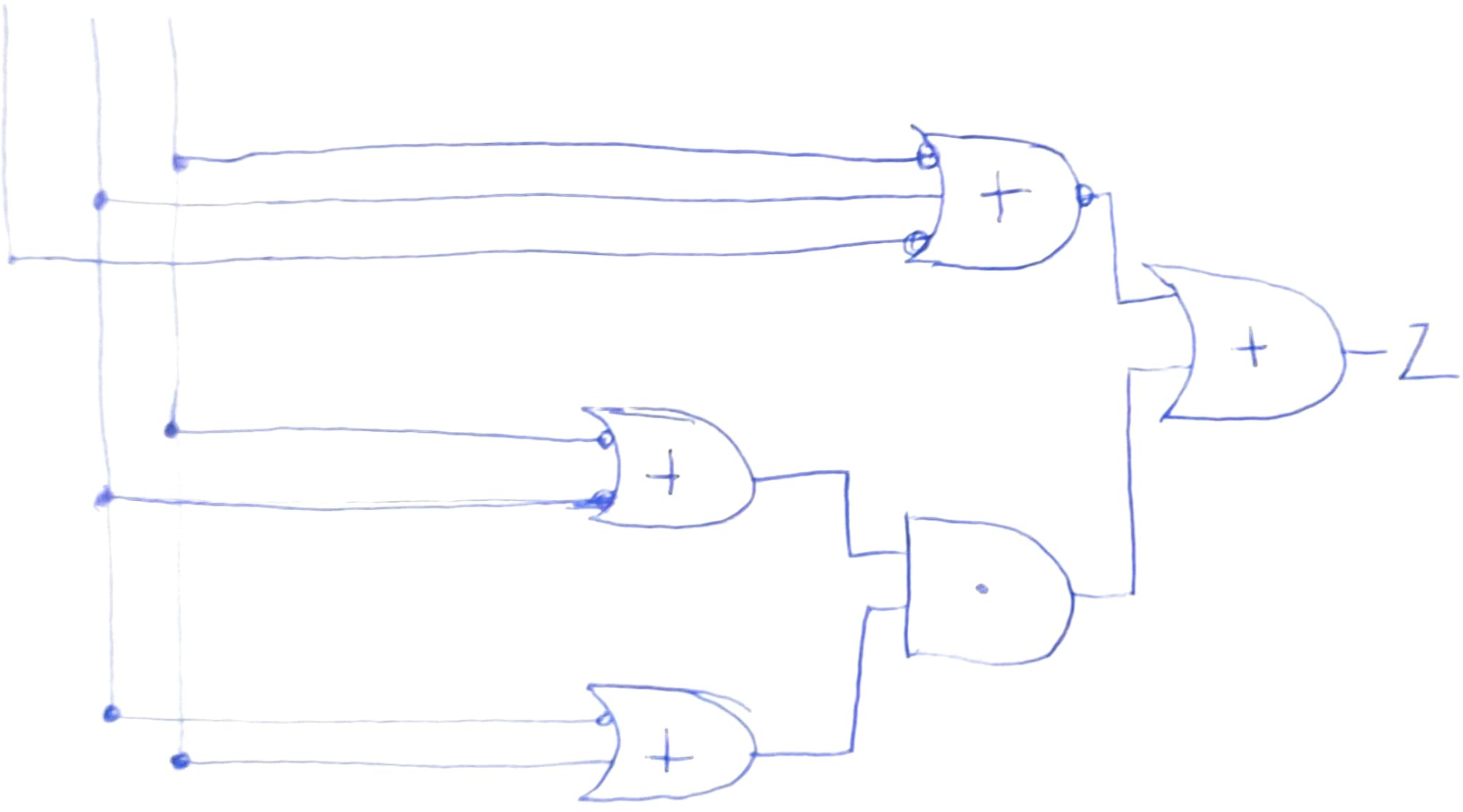
1)



2)



3) A B C



4) a) $S = X + Y \rightarrow S = \overline{(\overline{(A\,\bar{C})(B\,\bar{C})})} + \overline{(\overline{(A\,\bar{C})} + \bar{A})}$

$X = \overline{Z\,W} \rightarrow X = \overline{(A\,\bar{C})(B\,\bar{C})}$

$Y = \overline{Z + \bar{A}} \rightarrow Y = \overline{(A\,\bar{C})} + \bar{A}$

$Z = A\,\bar{C}$

$W = B\,\bar{C}$

A	B	C	S
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	1

4) b)

$S = X + Y + Z \rightarrow S = \left(\left(\overline{A+B}\right) + \left(\overline{A \cdot C}\right)\right) + \left(\overline{A \cdot C}\right) + \bar{A}$

$X = K + \ell \rightarrow X = \left(\overline{A+B}\right) + \left(\overline{A \cdot C}\right)$

$Y = \overline{A \cdot C}$

$Z = \bar{A}$

$K = \overline{A+B}$

$\ell = \overline{A \cdot C}$

A	B	C	S
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	0

5) a) $\bar{A} + \bar{B} + C$

b) $(\bar{A} + B + \bar{C}) \cdot (\bar{A} + \bar{B} + \bar{C})$

6)

a)

A	B	S
0	0	1
0	1	0
1	0	1
1	1	0

$$S(A,B) = \bar{A}\,\bar{B} + A\,\bar{B}$$

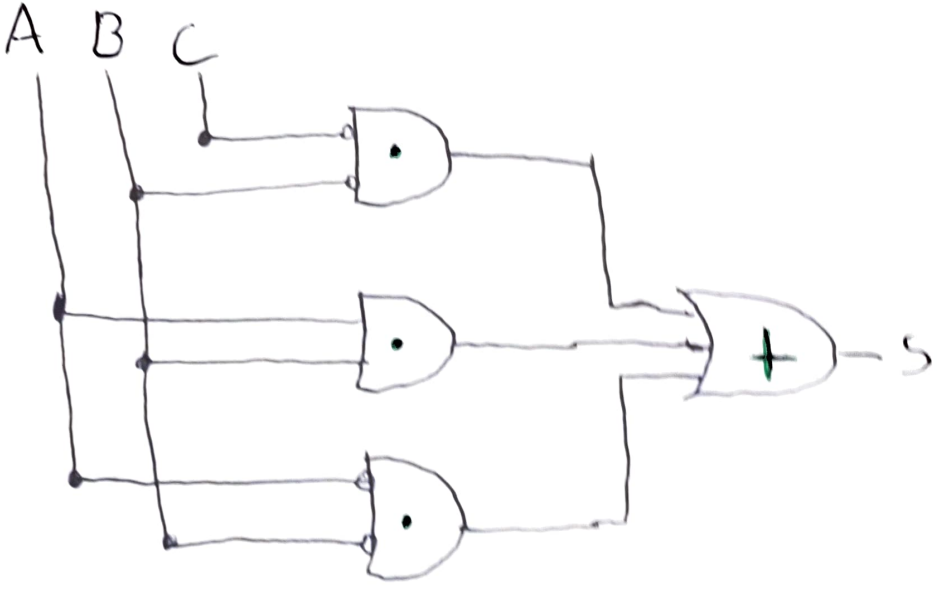
$$S(A,B) = \bar{B}(\bar{A} + A) = \bar{B}\,1 = \bar{B}$$

b)

A	B	C	S
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

A \ BC	00	01	11	10
0	1	1	0	0
1	1	0	1	ϕ

$$S(A,B,C) = \bar{A}\,\bar{B} + \bar{B}\,\bar{C} + A\,B$$

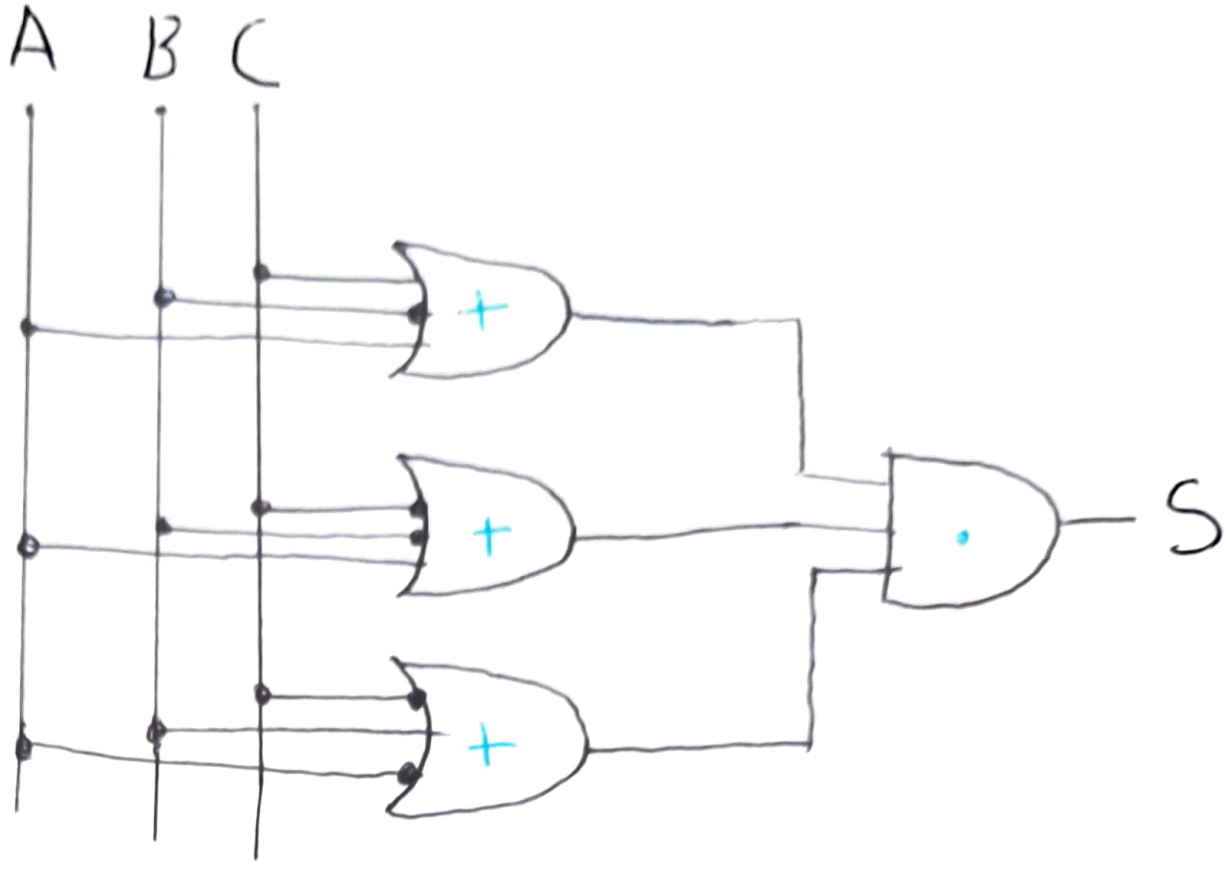


b)

c)

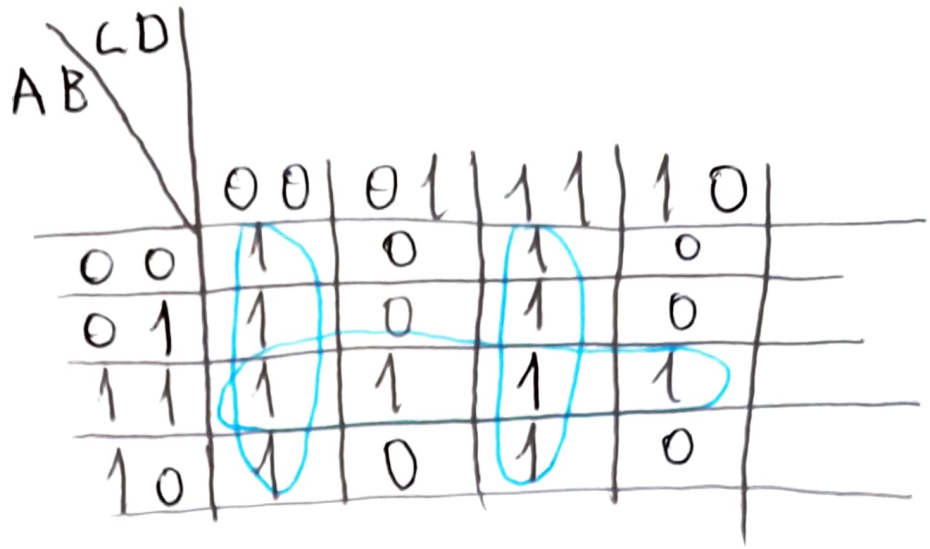
			m	M
A	B	C	S	S
0	0	0	0	1
0	0	1	0	1
0	1	0	1	0
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	0	1
1	1	1	0	1

$$S(A,B,C) = (A+\bar{B}+C)\cdot(A+\bar{B}+\bar{C})\cdot(\bar{A}+B+\bar{C})$$

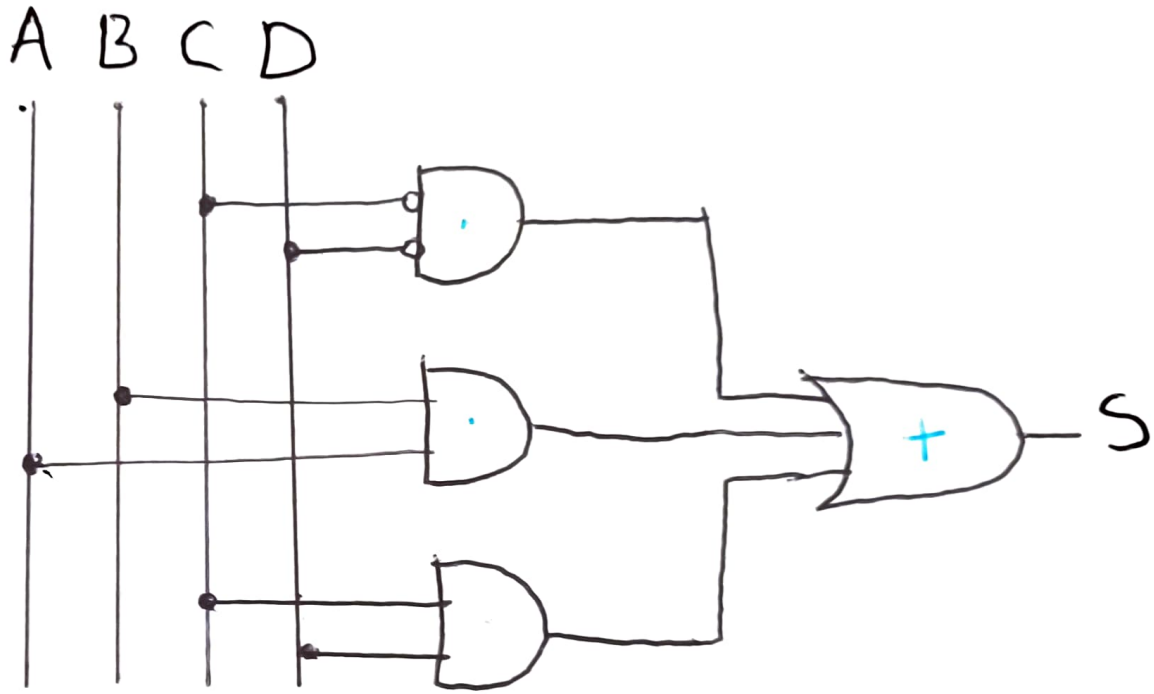


7)

A	B	C	D	S
0	0	0	0	1
0	0	0	1	0
0	0	1	0	0
0	0	1	1	1
0	1	0	0	1
0	1	0	1	0
0	1	1	0	0
0	1	1	1	1
1	0	0	0	1
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1



$$S = \bar{C}\bar{D} + AB + CD$$

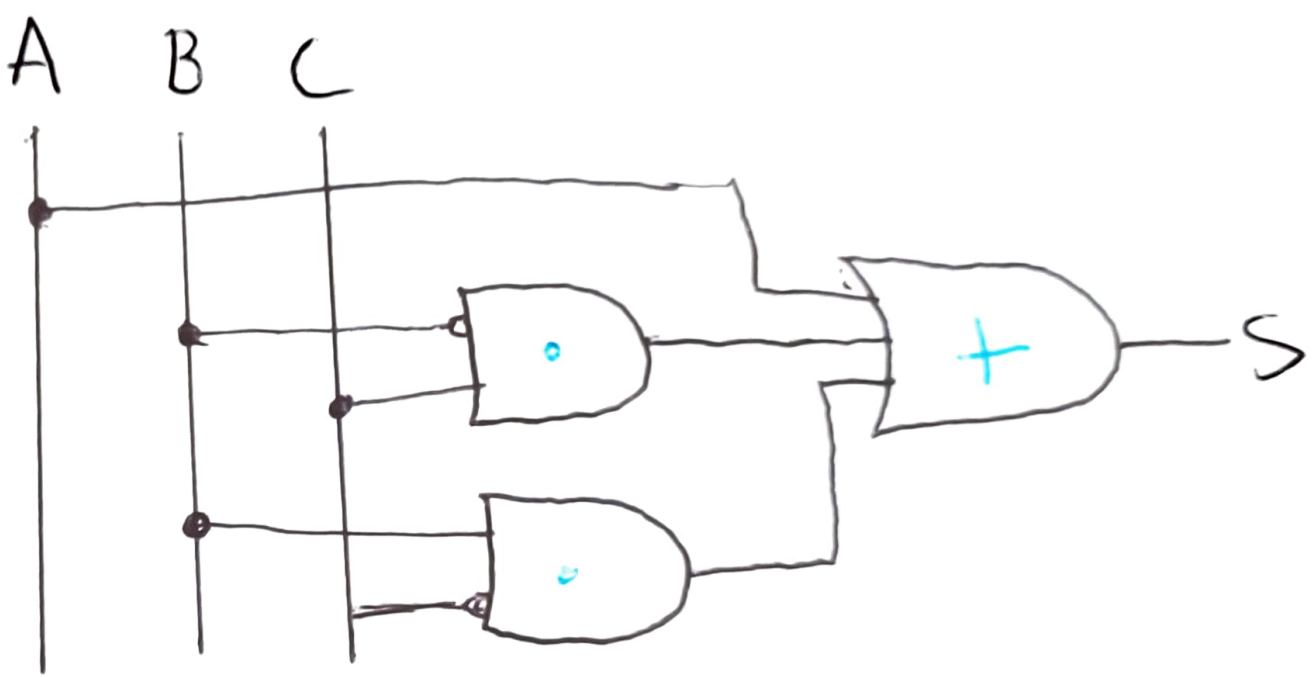


8)

A	B	C	X
0	0	0	0
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	1

A \ BC	00	01	11	10
0	0	1	0	1
1	1	1	1	1

$$A + \overline{B}\,C + B\cdot\overline{C}$$



9) $(A\bar{B}C)+(\bar{A}\cdot\bar{C})+(\bar{A}\cdot B)$