

Laborator nr. 4:

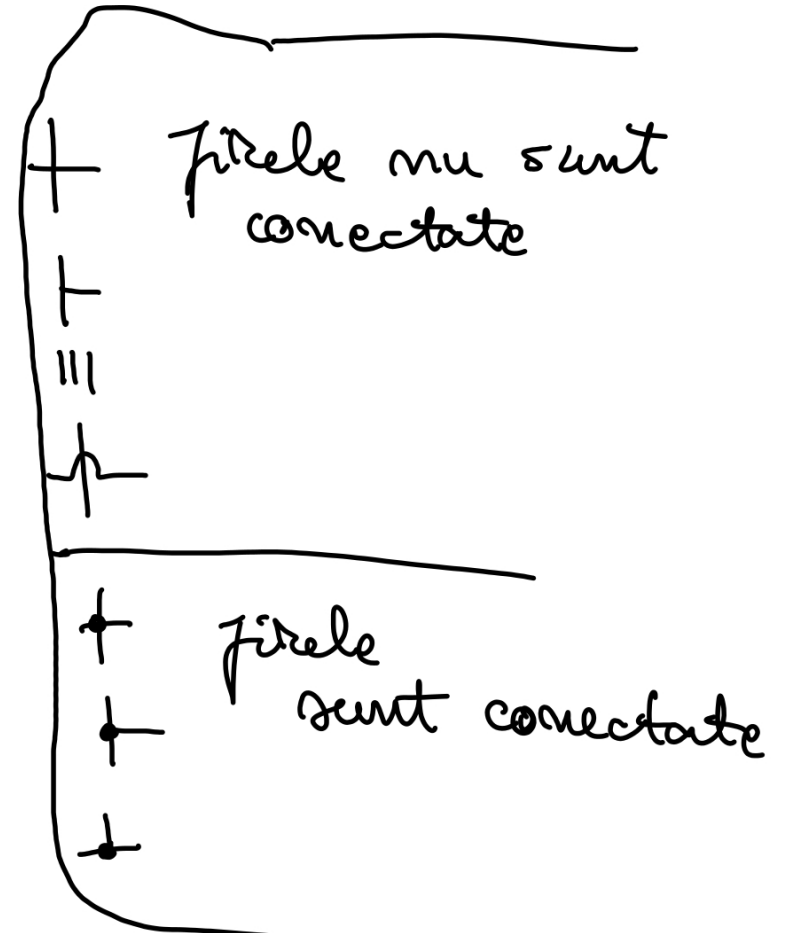
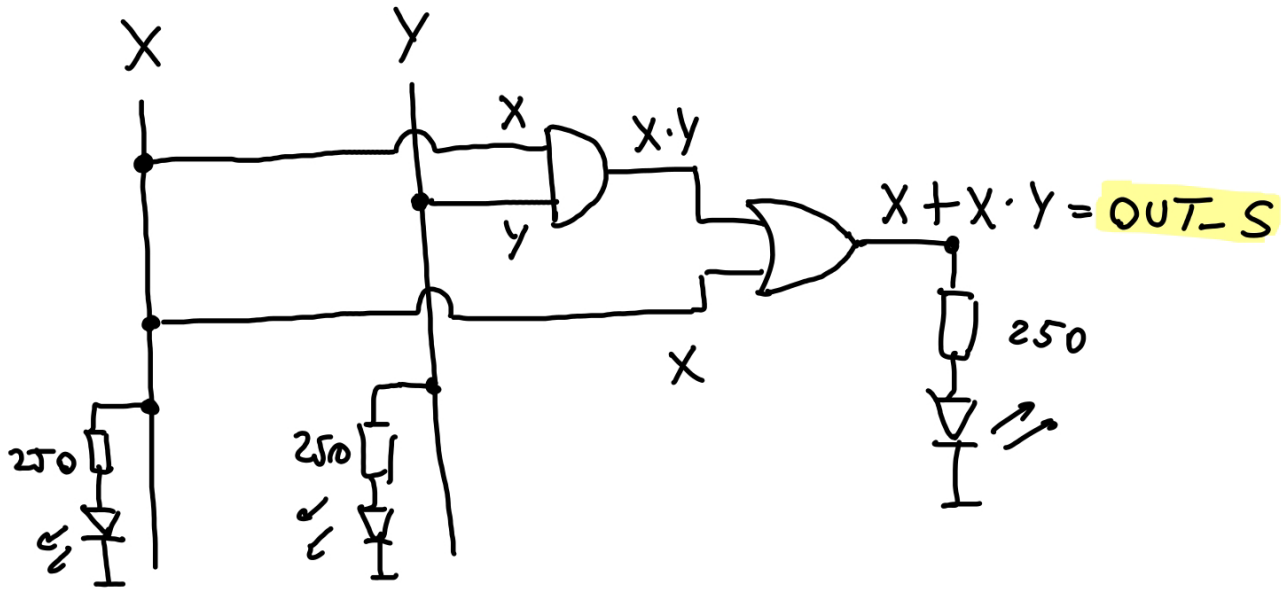
a) Verificati teorema conformei careia
↳ experimental

$$X + X \cdot Y = X$$

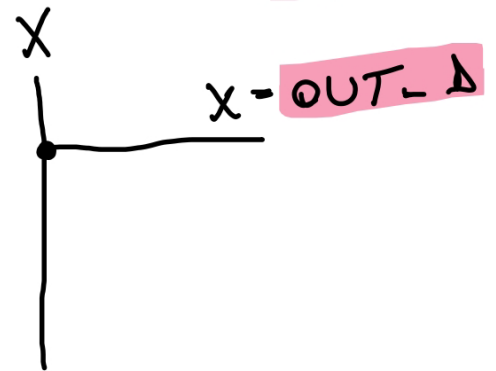
OUT_S OUT_D

Pașul 1: schema cu porți logice

Schema stânga:



Schema dreapta:



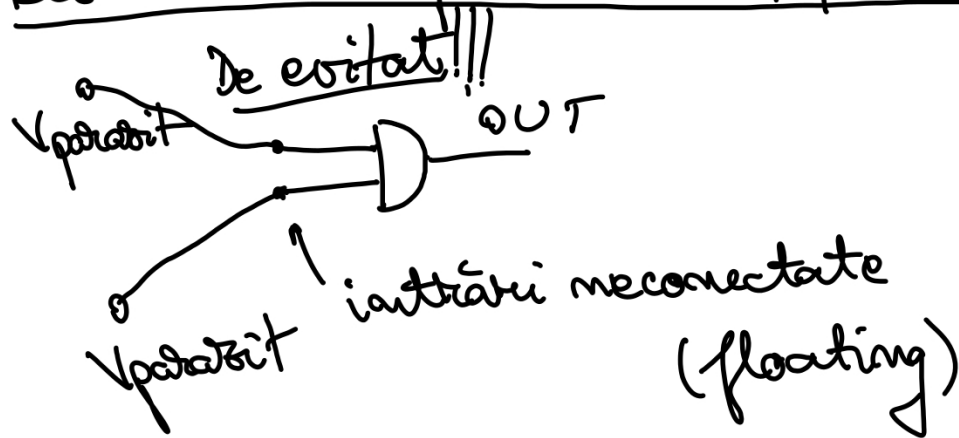
Passul 2: Tabelele de adevăr:

X	Y	OUT_S	OUT_D
0	0	0	0
0	1	0	0
1	0	1	1
1	1	1	1

$$\Rightarrow \text{OUT_S} = \text{OUT_D}$$

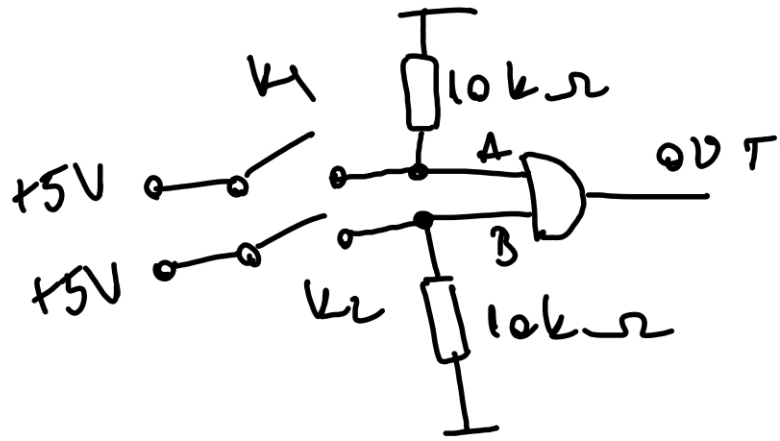
Teorema este validă

Resistori de pull-down / pull-up:



Soluția: atunci când nu avem 1 logic pe intrări, ele să fie legate la 0 logic (sau invers).

Rezistori de pull-down:

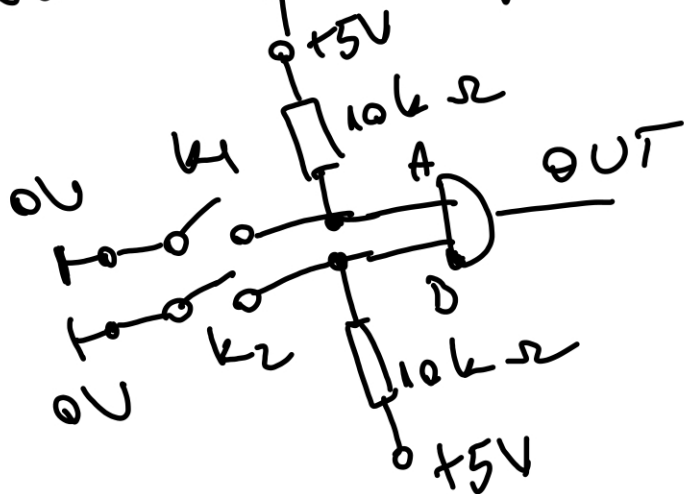


exemplu:

Dacă K_1 deschis $A = 0V \Rightarrow 0$ logic

Dacă K_1 închis $A = 5V \Rightarrow 1$ logic

Rezistori de pull-up: (complementaritate pull-down)



Dacă K_1 deschis: $A = 5V = 1$ logic

Dacă K_1 închis: $A = 0V = 0$ logic

Verificați teorema conform

căreia

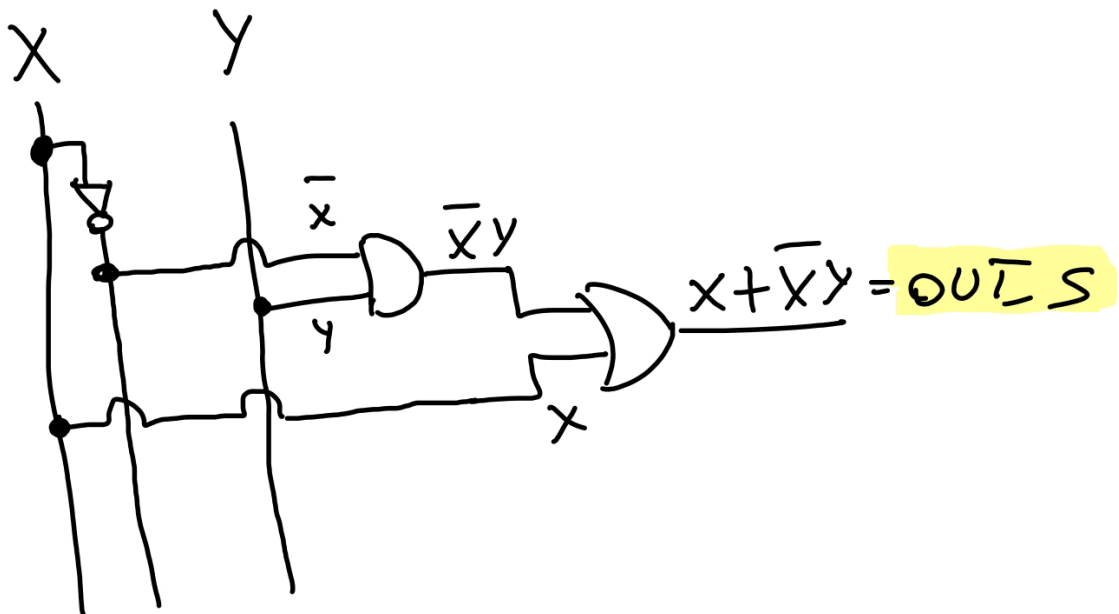
$$X + \bar{X}Y = X + Y$$

stânga
OUT-S

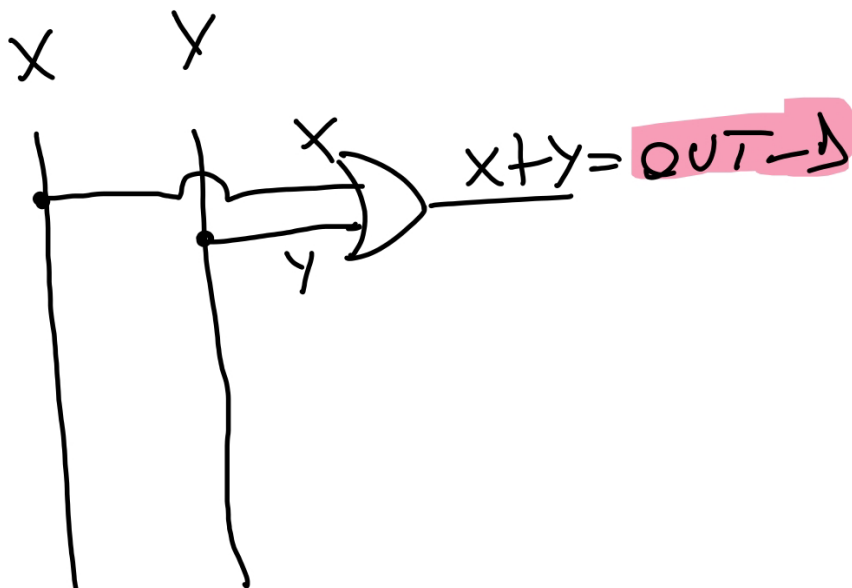
dreapta
OUT-D

Pașul 1: schema cu porți logice

schema stânga:



schema dreapta:



Pașul 2: Tabelul de adevăr

X	Y	OUT-S	OUT-Δ
0	0	0	0
0	1	1	1
1	0	1	1
1	1	1	1

⇔

$$\text{OUT-S} = \text{OUT-}\Delta \Rightarrow$$

⇒ Teorema este
validă

