



# Schakelproef: opdracht 1

Ontwerp van een 4-input NOR poort in CMOS

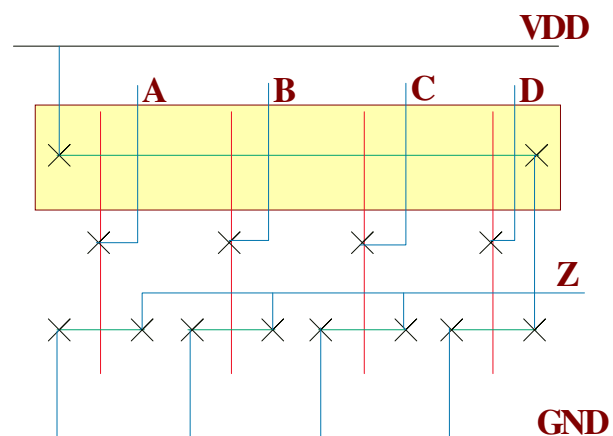
Logische functie:

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

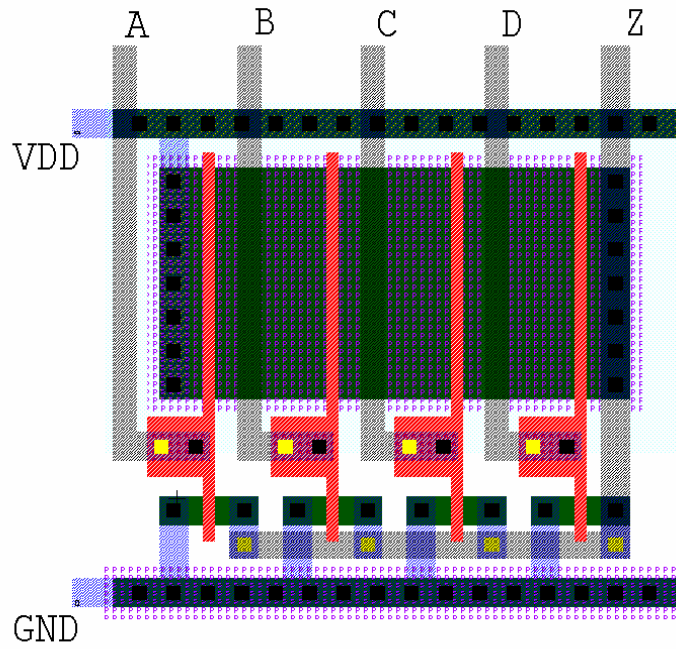
Waarheidstabel:

A	B	C	D	Z
0	0	0	0	1
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	0
1	0	1	1	0
1	1	0	0	0
1	1	0	1	0
1	1	1	0	0
1	1	1	1	0

Stick diagramma:

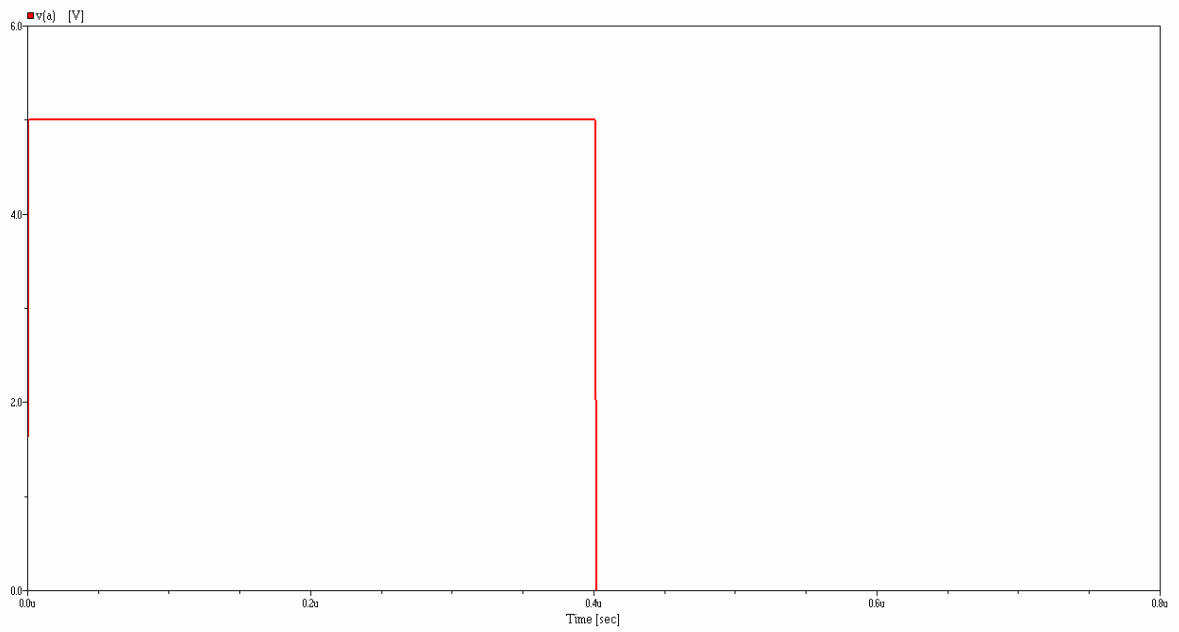


**CMOS lay-out:**

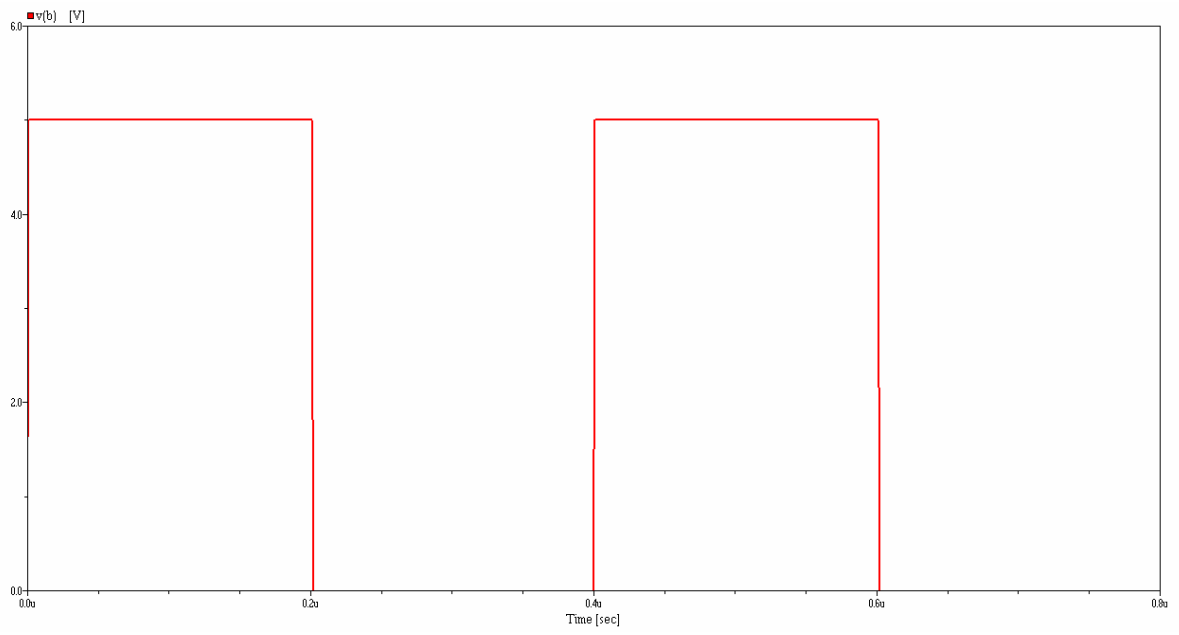


**Simulatie:**

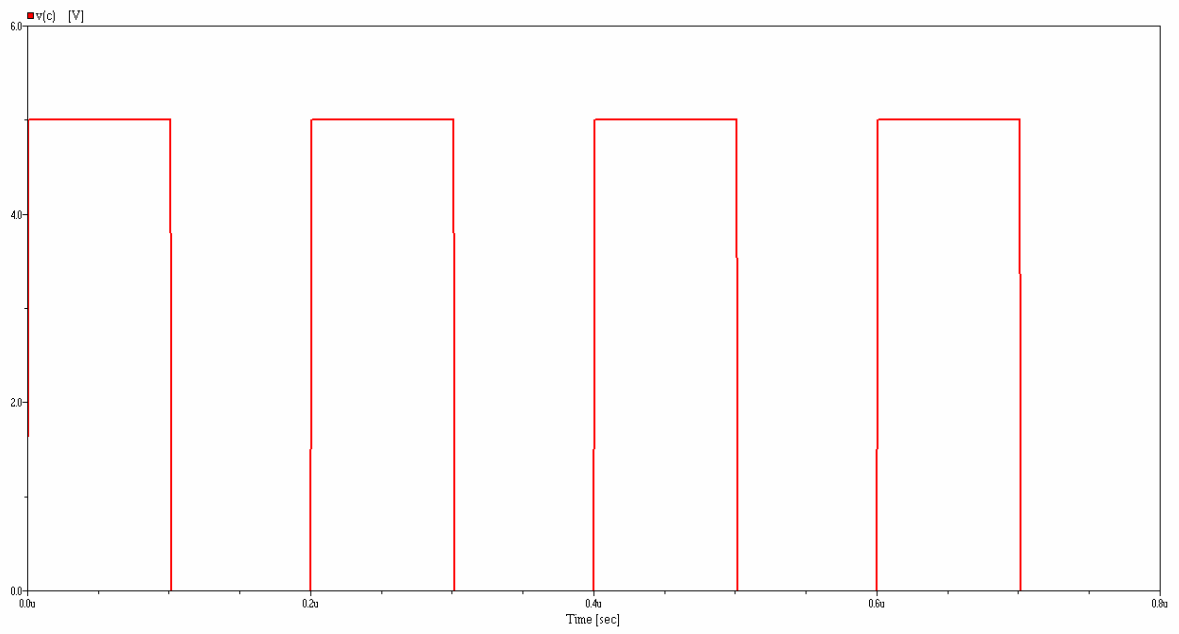
*Input A*



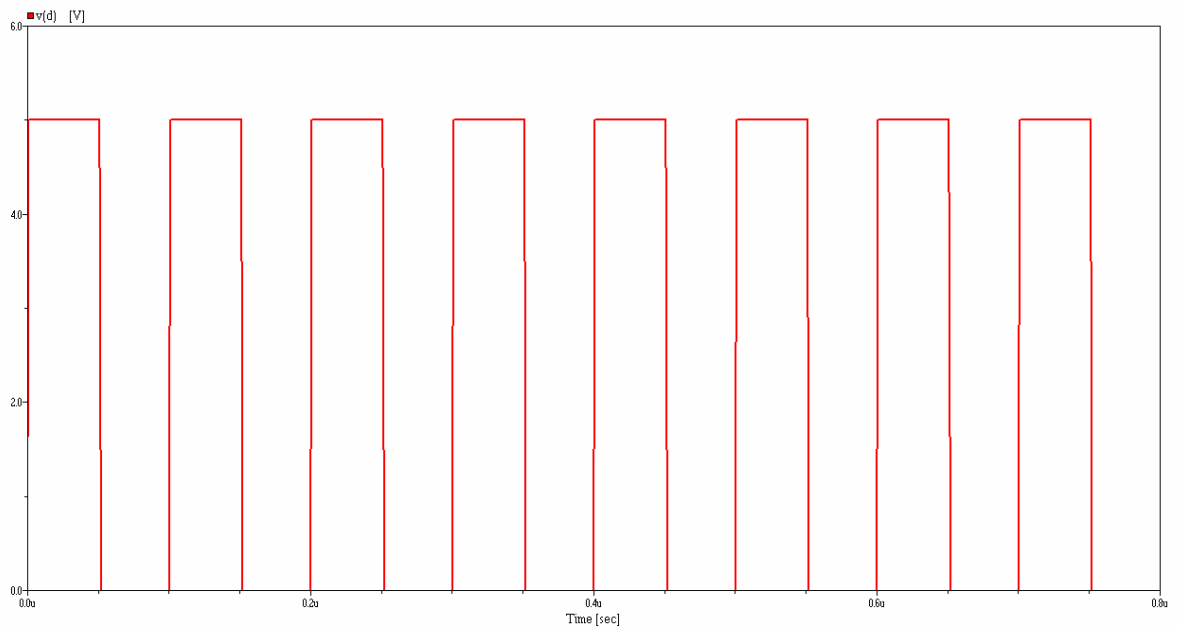
### Input B



### Input C



### Input D



### Output Z

