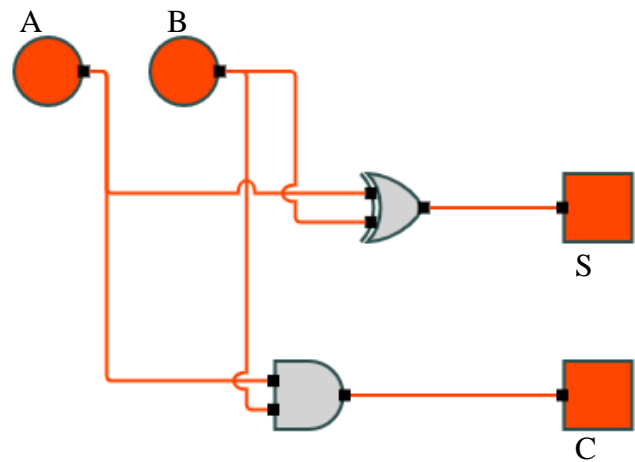


## Adding two numbers

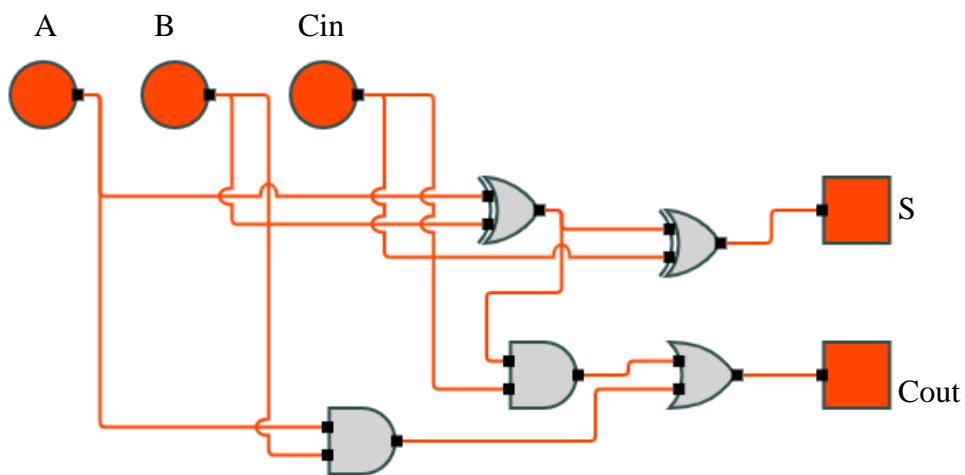
A Half-adder, with a 4-row truth table and showing inputs  $A_0$ ,  $B_0$  and outputs  $C_1, S_1$

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



Full-Adder, with an 8-row truth table and showing inputs  $A_0$ ,  $B_0$ ,  $C_0$  and outputs  $C_1$ ,  $S_1$

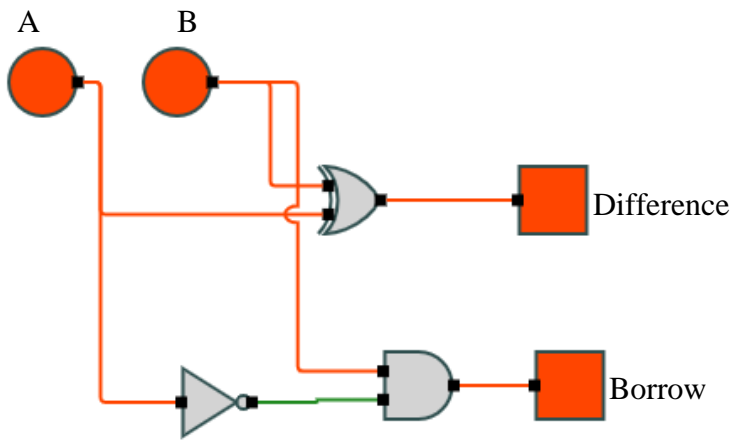
A	B	$C_0$	$C_1$	S
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1



## Subtracting two numbers

A Half-subtractor, with a 4-row truth table and showing inputs  $A_0$ ,  $B_0$  and outputs  $D_1, B_1$

A	B	Difference	Borrow
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0



Full-Subtractor, with an 8-row truth table and showing inputs  $A_0$ ,  $B_0$ ,  $B_{in}$  and outputs  $D_1$ ,  $B_{out}$

A	B	Bin	D	Bout
0	0	0	0	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	1
1	0	0	1	0
1	0	1	0	0
1	1	0	0	0
1	1	1	1	1

