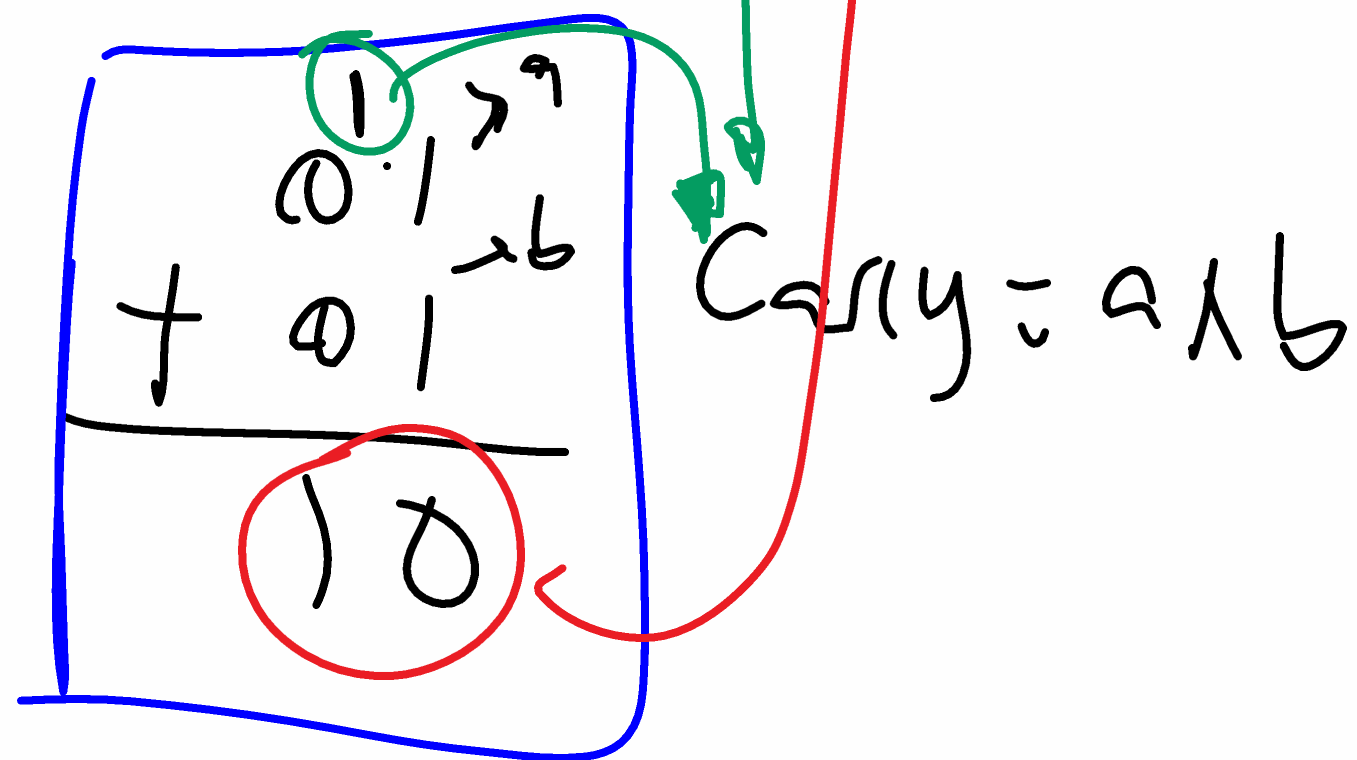
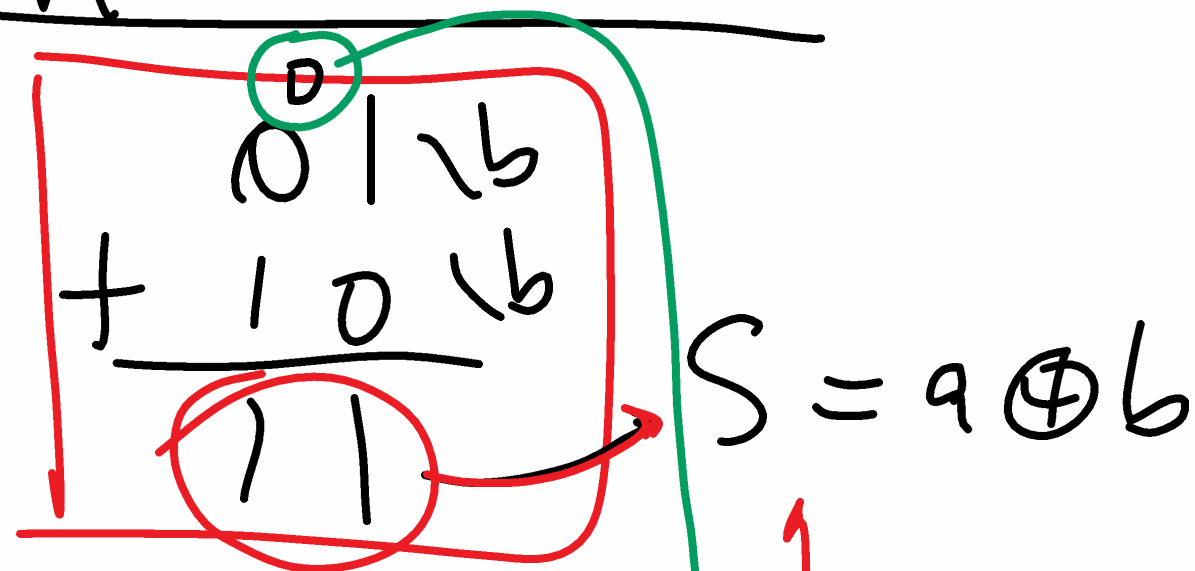
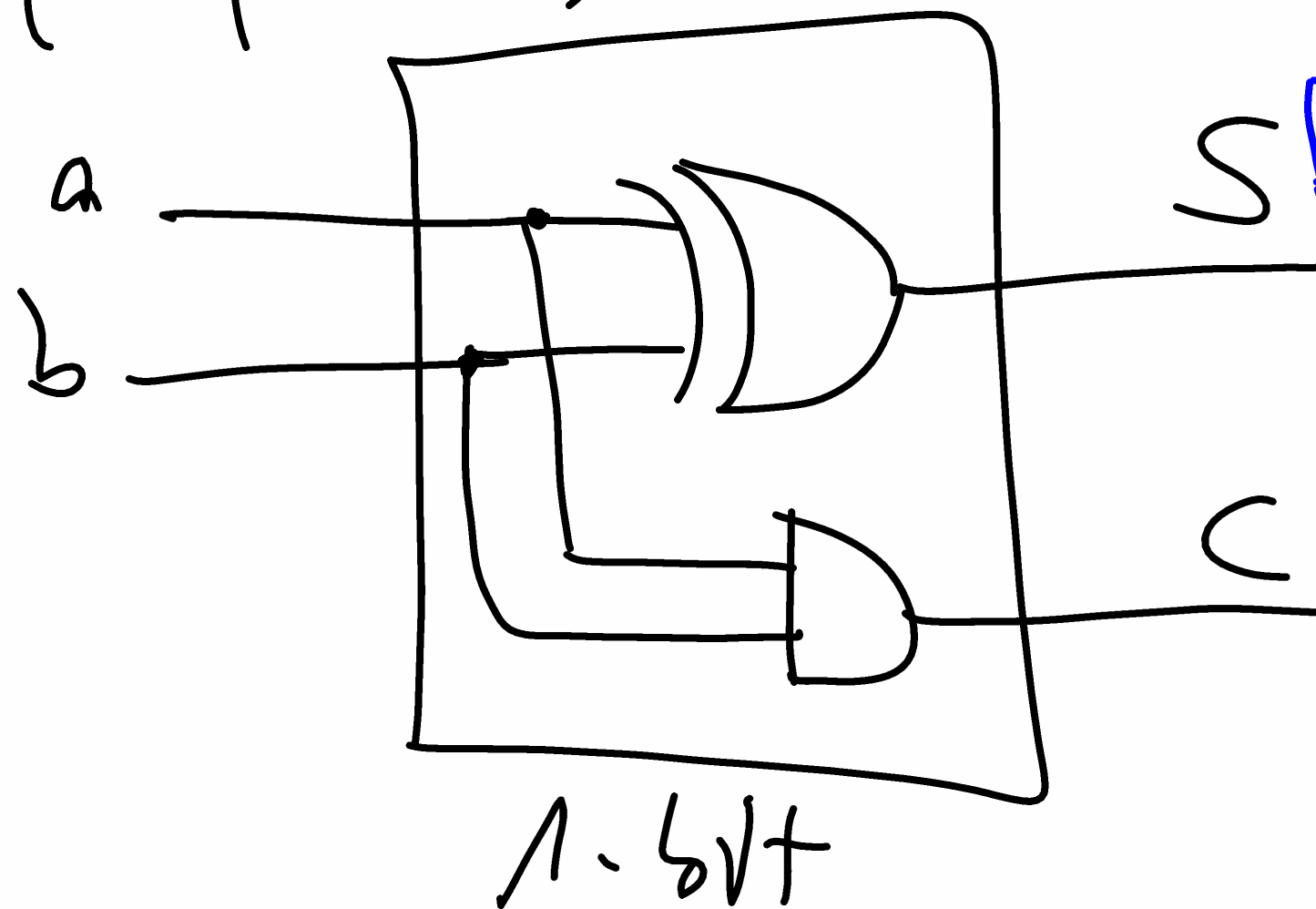


LOGIC CIRCUITS

ADDITION



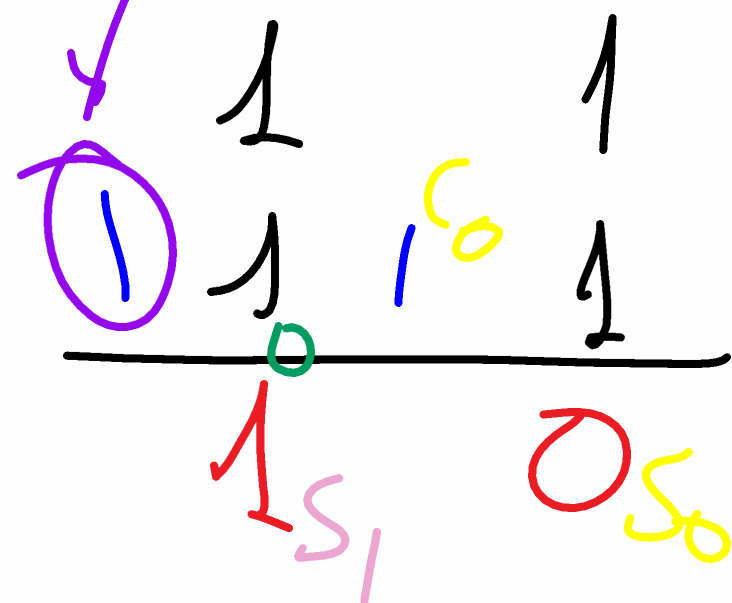
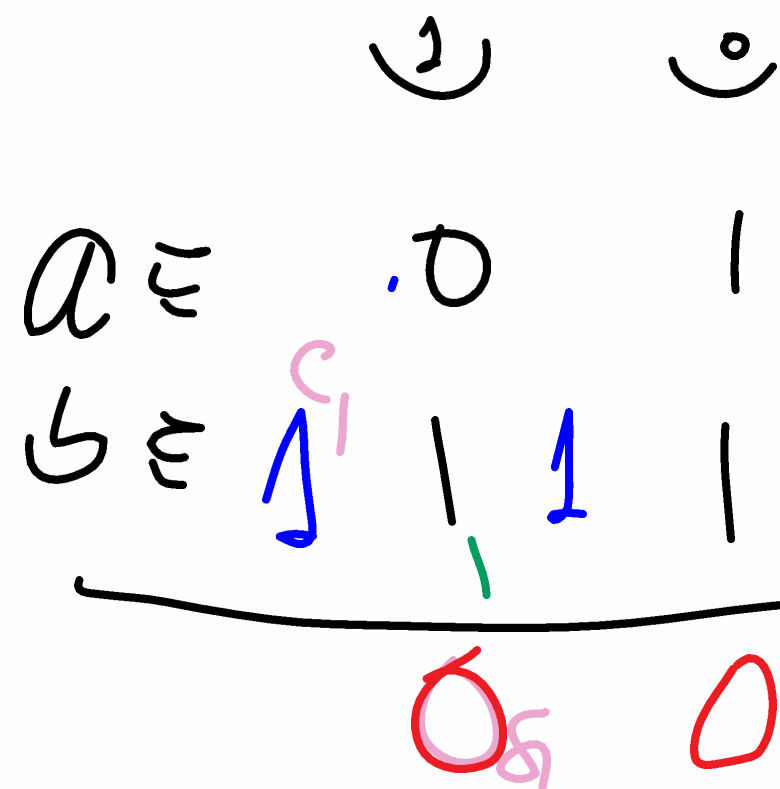
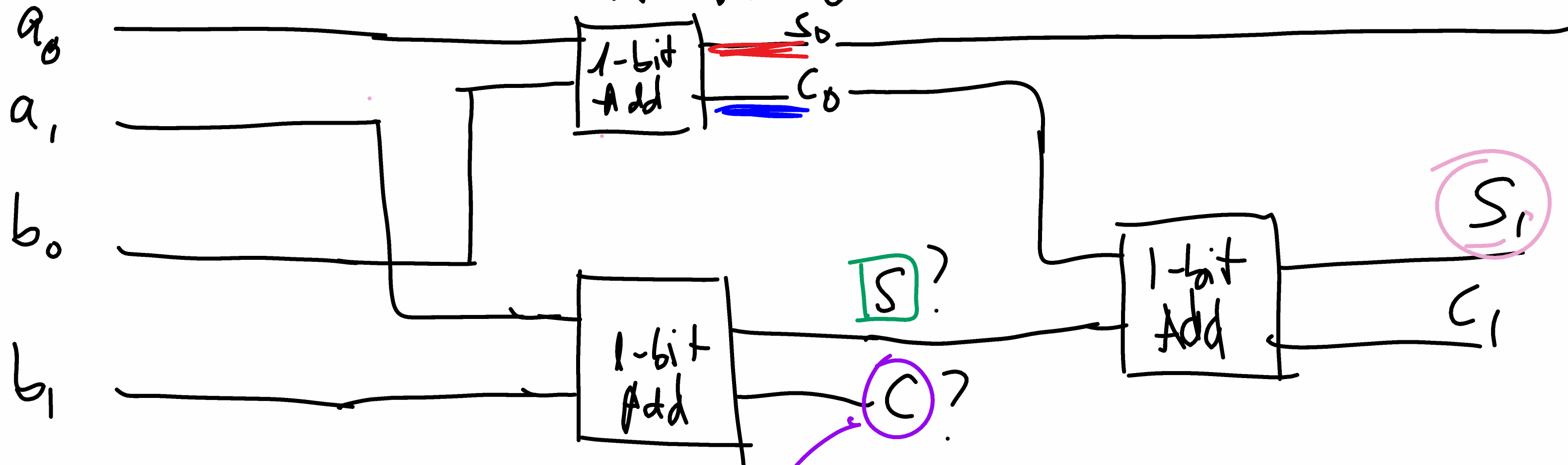
1 bit adder
(half adder)



Tue 12 Oct 2018

a	b	S	C
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

2-bit Adder



1-bit Full Adder

a _____
b _____
c _____

$$S = (a \oplus b) \oplus c$$

$$C' = (a \wedge b) \oplus c$$

a	b	c	a ⊕ b	S	C'
0	0	0	0	0	0
0	0	1	0	1	0
0	1	0	1	1	0
0	1	1	1	0	1
1	0	0	1	1	0
1	0	1	1	0	1
1	1	0	0	0	1
1	1	1	0	1	1

$$\begin{array}{r} 0' \\ 11 \\ \hline 0 \end{array} \quad \begin{array}{r} 1' \\ 11 \\ \hline 1 \end{array}$$