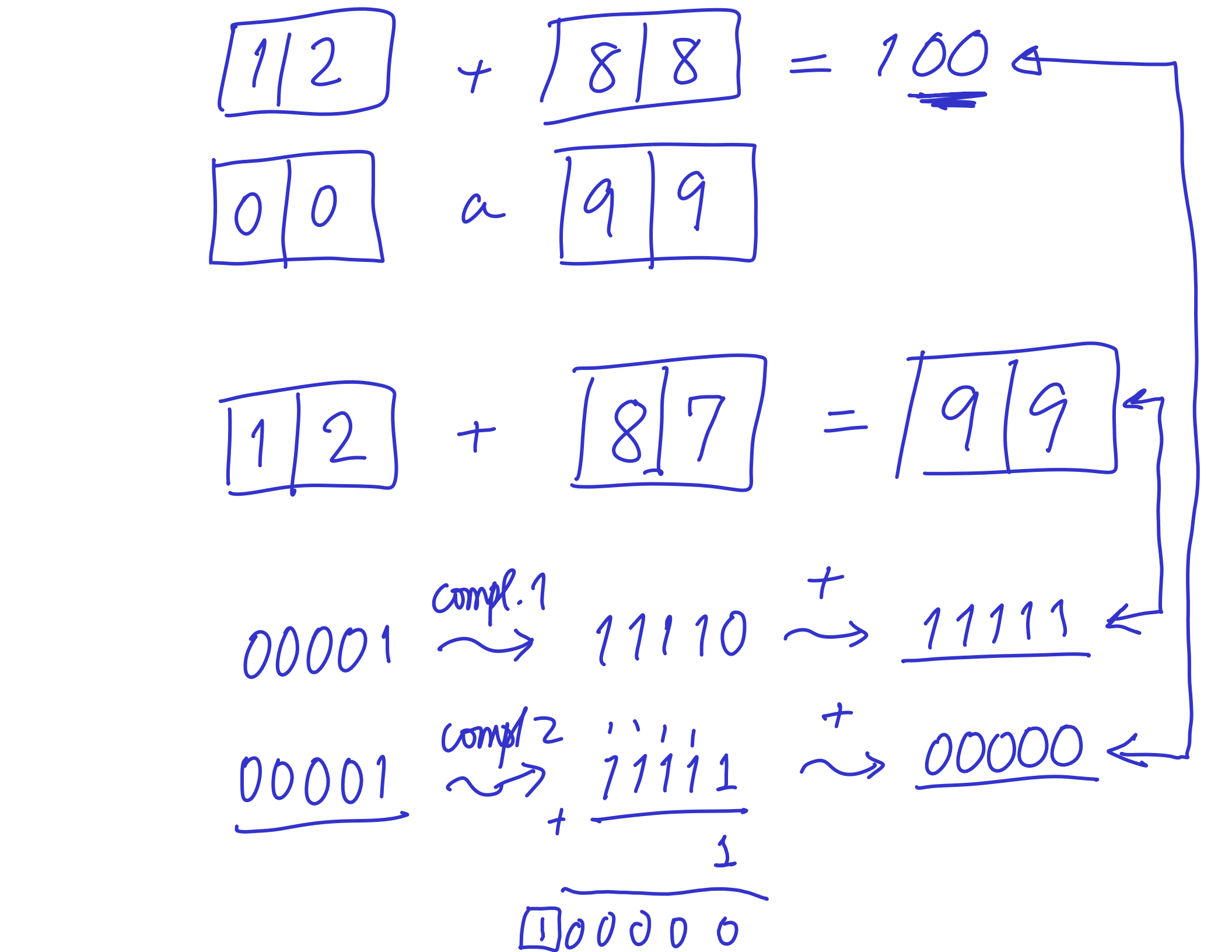
Exercício 7

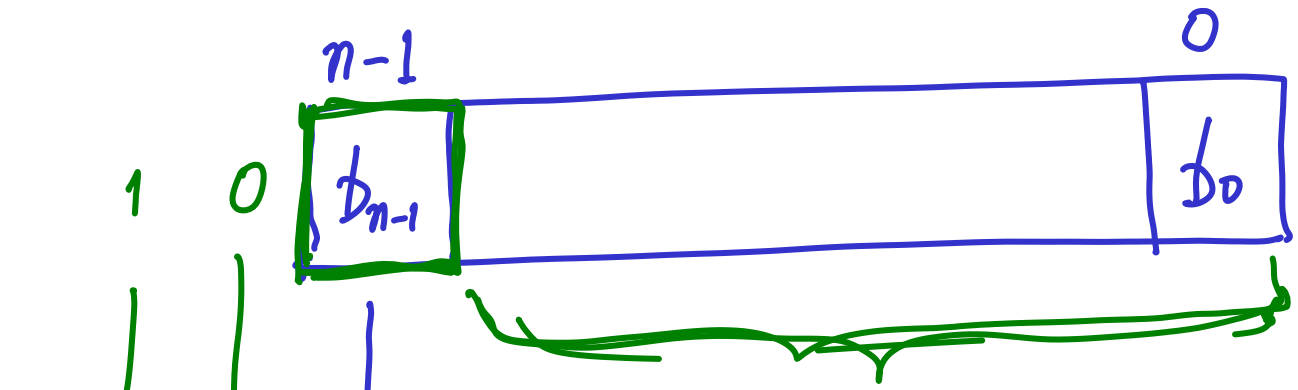
sem sinal → 0
compl. 1 → 0
compl. 2 → 0

} valor de acordo com as três interpretações

complemento de 1 = 11111 → −0

complemento de 2 = 00000 → 0


12 + 88 = 100
00 a 99
12 + 87 = 99
00001 compl.1 11110 + 11111
00001 compl.2 11111 + 1 00000
1 00000

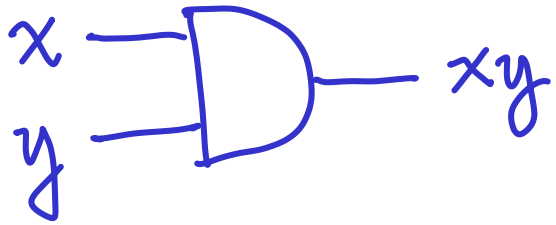


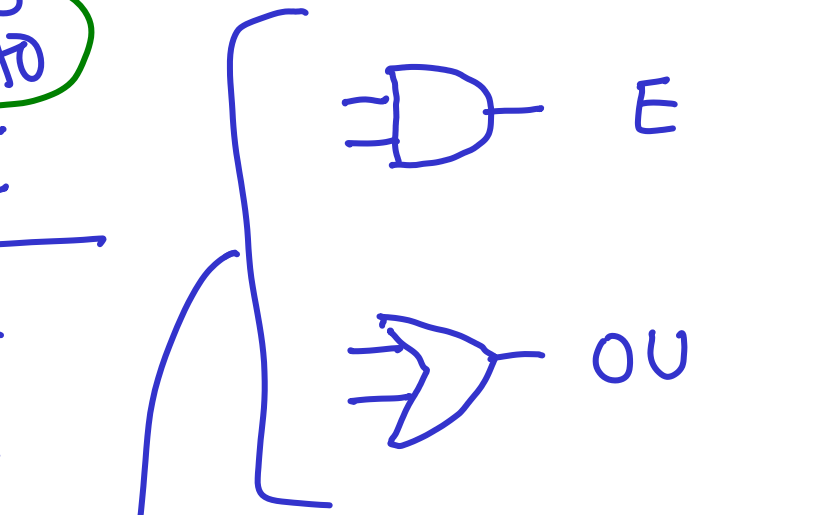
$$-b_{n-1}2^{n-1} + \underbrace{b_{n-2}2^{n-2} + \cdots + b_0 2^0}_{\sum_{i=0}^{n-2} b_i 2^i}$$

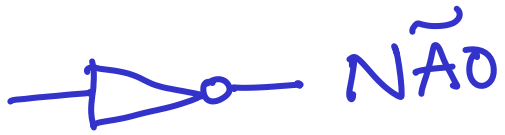
↖ complemento de 2

Operações lógicas

	x	y	E xy	OU $x+y$	NÃO $\bar{x}$
→	0	0	0	0	1
→	0	1	0	1	1
→	1	0	0	1	0
→	1	1	1	1	0







portas lógica

inversor

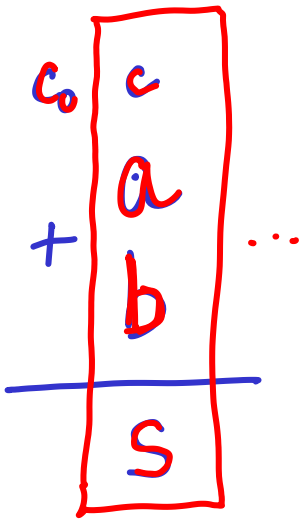


Tabela-verdade ⇒

a	b	c	S	C_{out}
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1

entradas

2 saídas

Função binária

a b c	S	C_{out}
0 0 0	0	0
0 0 1	1	0
0 1 0	1	0
0 1 1	0	1
1 0 0	1	0
1 0 1	0	1
1 1 0	0	1
1 1 1	1	1

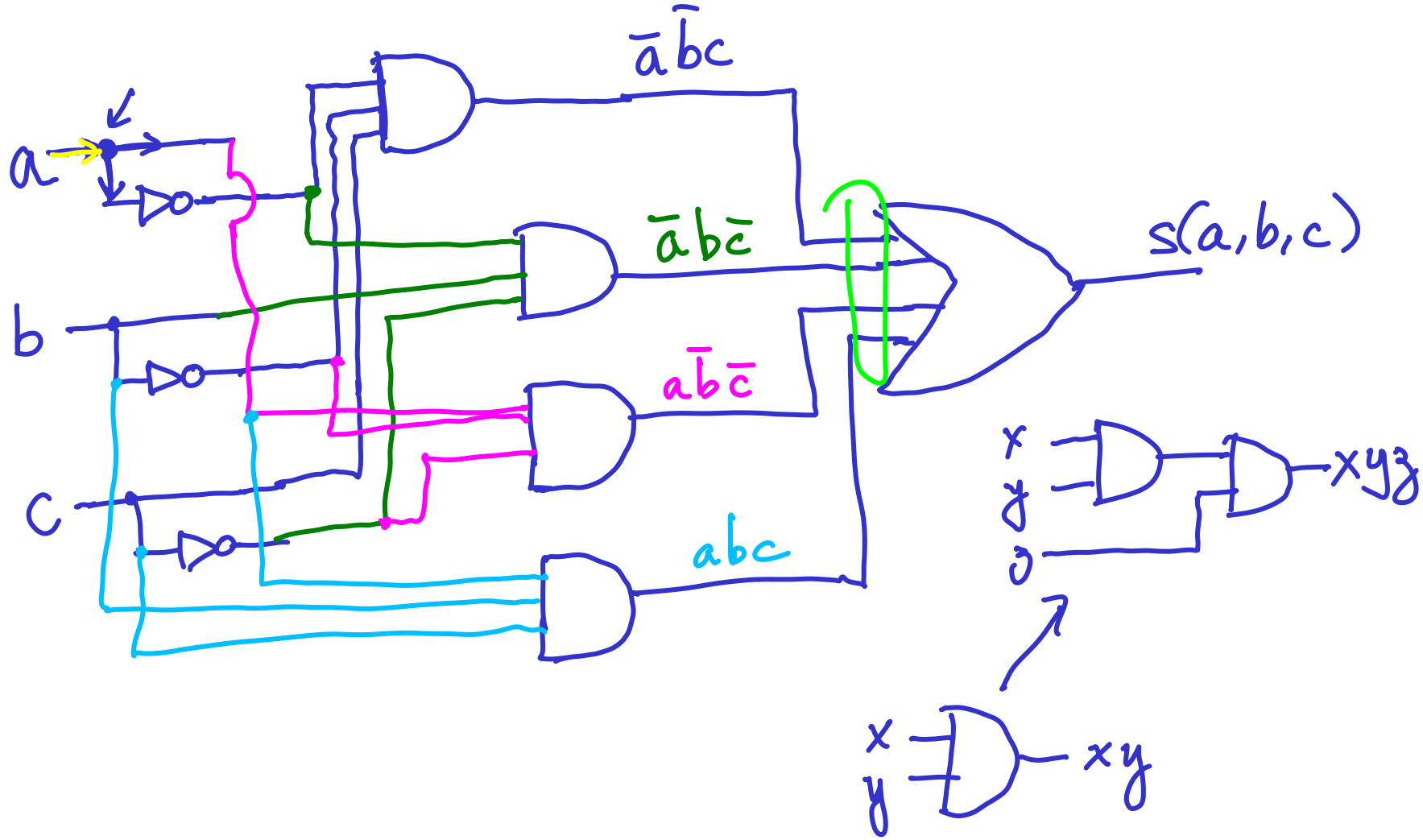
$S(a,b,c) = \bar{a}\bar{b}c + \bar{a}b\bar{c} + a\bar{b}\bar{c} + abc$

0 0 0 — 0+0+0+0=0

$C_{out}(a,b,c) = \bar{a}bc + a\bar{b}c + ab\bar{c} + abc$

$$S(a,b,c) = \bar{a}\bar{b}c + \bar{a}b\bar{c} + a\bar{b}\bar{c} + abc$$

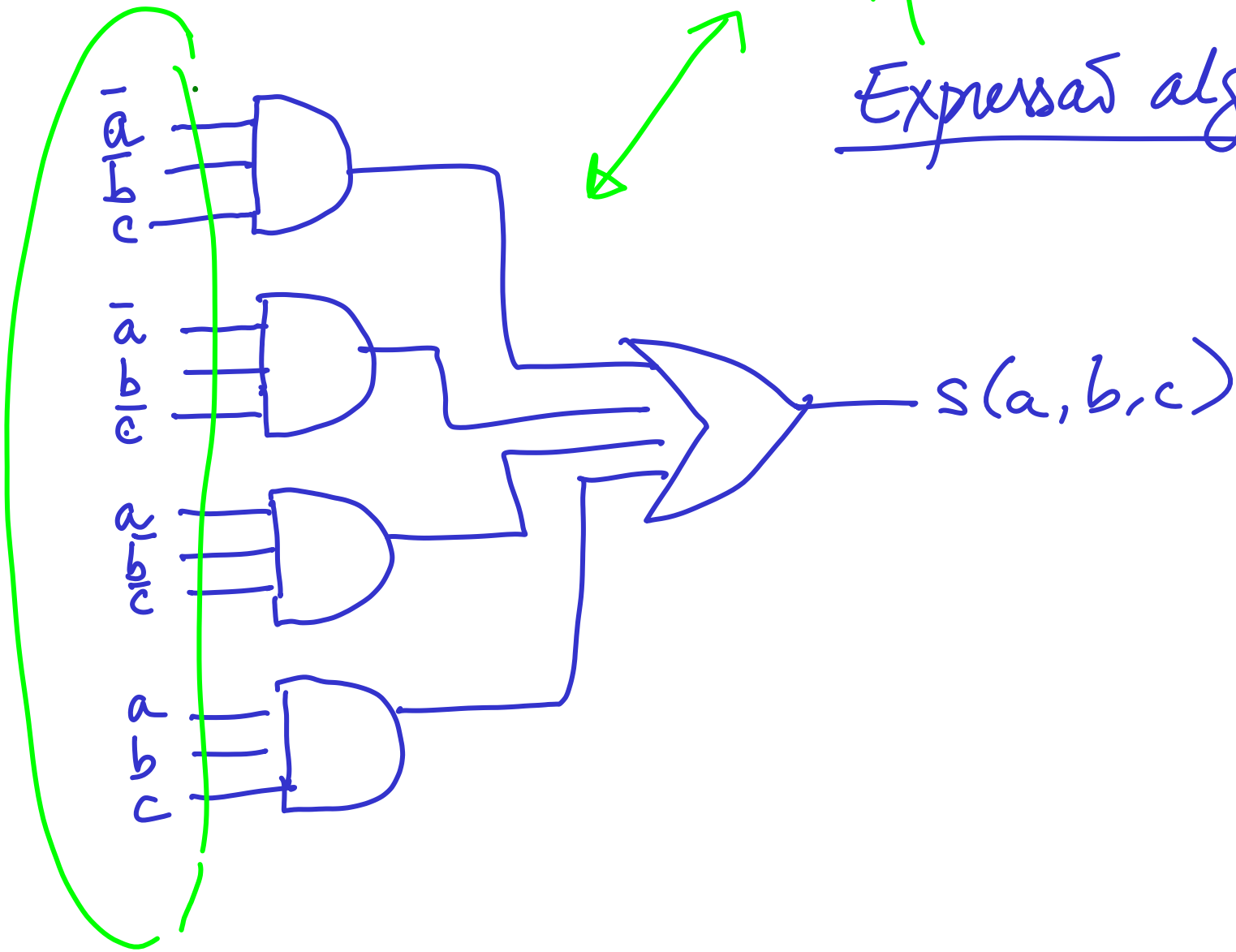
001 010 100 111



$$S(a,b,c) = \bar{a}\bar{b}c + \bar{a}b\bar{c} + a\bar{b}\bar{c} + abc$$

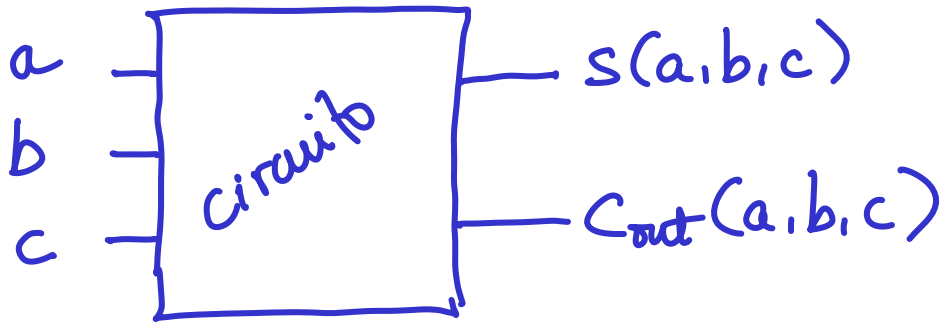
001 010 100 111

Expressão algébrica



$s(a, b, c) =$ _____

$C_{out}(a, b, c) =$ _____



módulo somador de bits.

$n = 3$

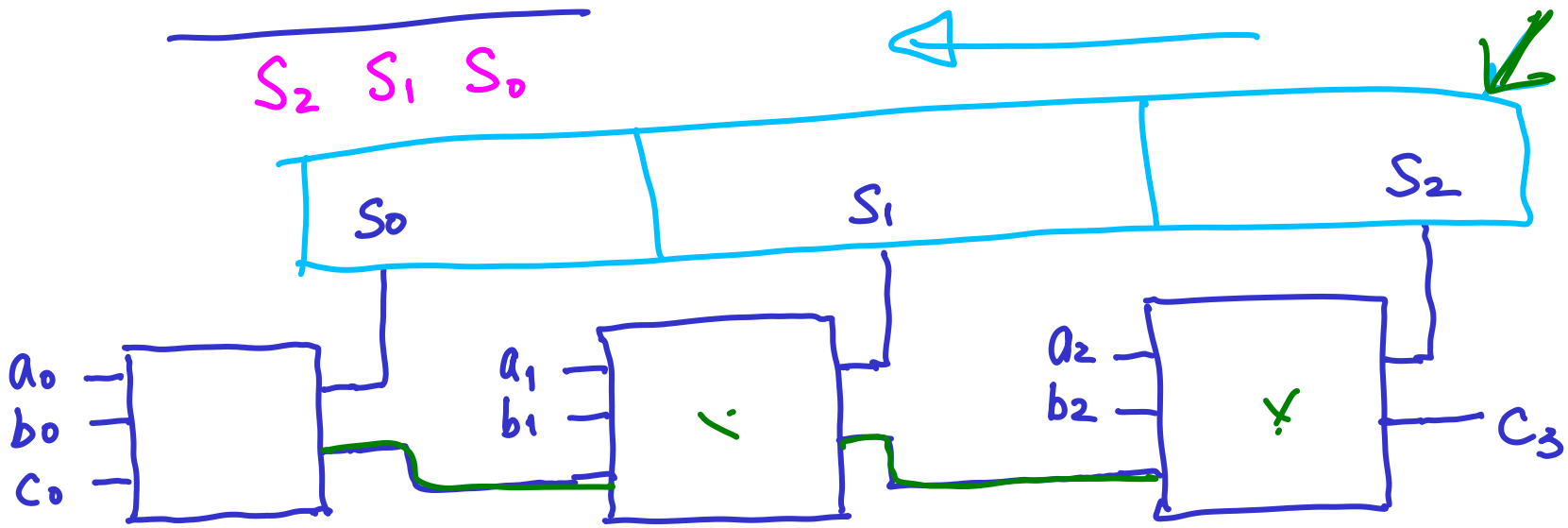
$A = a_2 a_1 a_0$

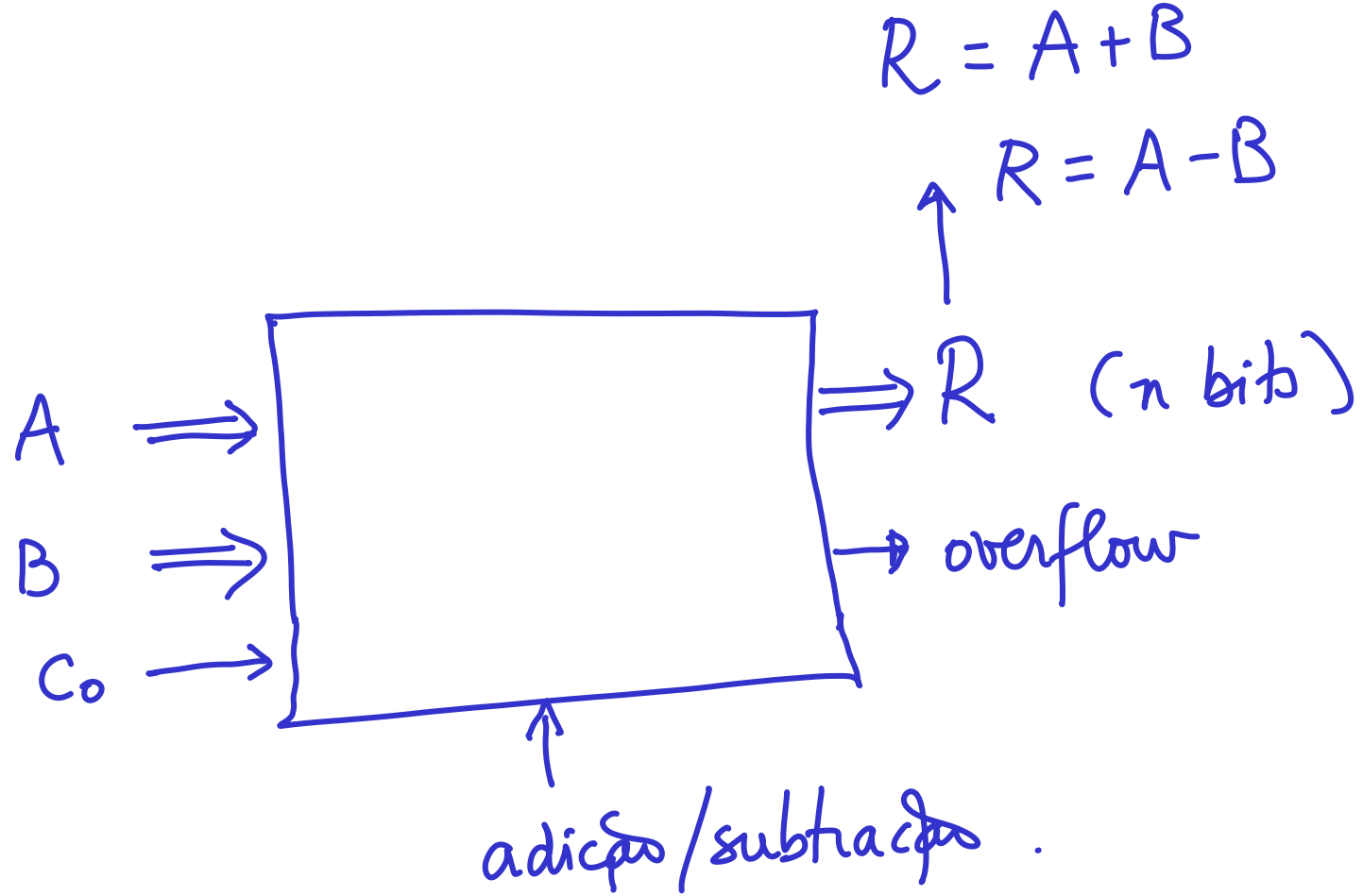
$B = b_2 b_1 b_0$

$S = A + B \Rightarrow$

$$\begin{array}{r} c_3\ c_2\ c_1\ c_0 \\ a_2\ a_1\ a_0 \\ + \quad b_2\ b_1\ b_0 \\ \hline s_2\ s_1\ s_0 \end{array}$$

$S = S_2 S_1 S_0$





A, B → n bits

S(a, b, c)

Cout (a, b, c)

Flip-flop