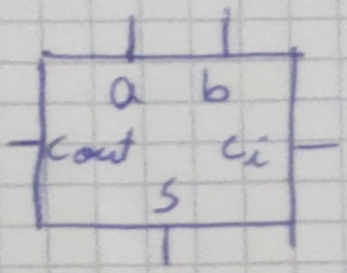
Parte 1



c_i	a	b	S	cout
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 →

c_i \ ab	00	01	11	10
0	0	1	0	1
1	1	0	1	0

Cout →

c_i \ ab	00	01	11	10
0	0	0	1	0
1	0	1	1	1

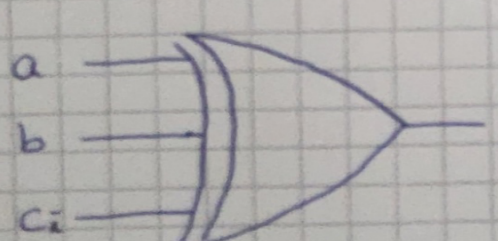
$$S = \bar{a}\bar{b}c_i + \bar{a}b\bar{c_i} + abc_i + a\bar{b}\bar{c_i}$$

$$= \bar{a}(\bar{b}c_i + b\bar{c_i}) + a(bc_i + \bar{b}\bar{c_i})$$

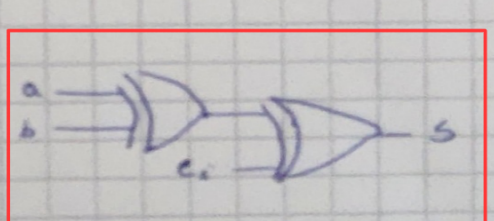
$$= \bar{a}(b \oplus c_i) + a\overline{(b \oplus c_i)}$$

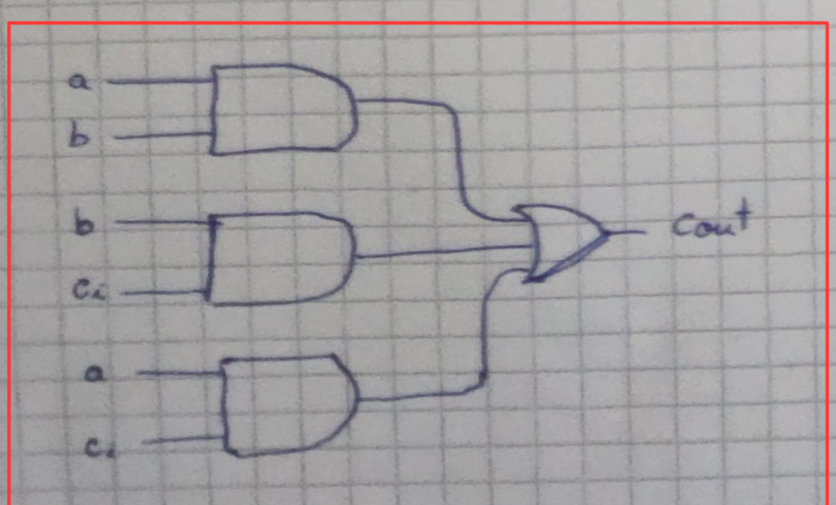
$$= \boxed{a \oplus b \oplus c_i}$$

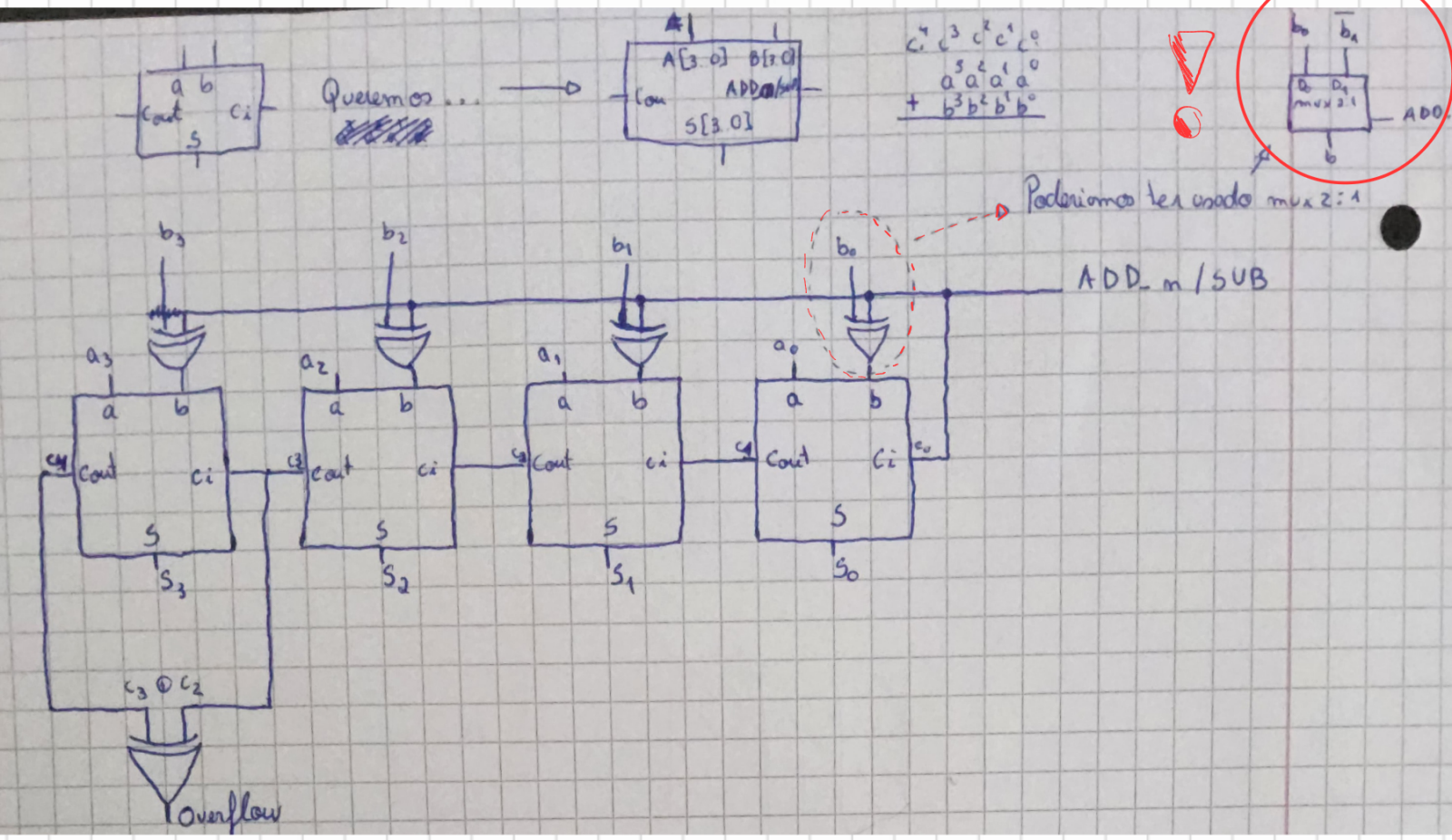
$$c_{out} = \boxed{ab + bc_i + ac_i}$$



ou







Parte 2

$$y_{out} = \overline{(a_i \oplus b_i)}\, y_{in}$$
$$x_{out} = a_i \bar{b}_i + \overline{(a \oplus b)}\, x_{in}$$
$$z_{out} = \bar{a}_i b_i + \overline{(a \oplus b)}\, z_{in}$$

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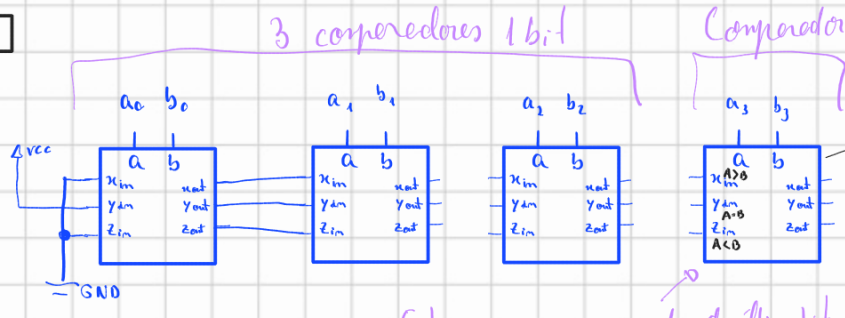

$$x_{out} = z_{in}\bar{a}b + y_{in}\bar{a}b + x_{in}(\bar{a}+b)$$
$$y_{out} = \overline{(a \oplus b_i)}\, y_{in}$$
$$z_{out} = z_{in}(a+\bar{b}) + y_{in}\, a\bar{b} + x_{in}\, \bar{a}b$$

x_{in}	y_{in}	z_{in}	a	b	x_{out}	y_{out}	z_{out}
0	0	1	0	0	0	0	1
0	0	1	0	1	1	0	0
0	0	1	1	0	0	0	1
0	0	1	1	1	0	0	1
0	1	0	0	0	0	1	0
0	1	0	0	1	1	0	0
0	1	0	1	0	0	0	1
0	1	0	1	1	0	1	0
1	0	0	0	0	1	0	0
1	0	0	0	1	1	0	0
1	0	0	1	0	0	0	1
1	0	0	1	1	1	0	0

É igual! →

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$$y_{out} = \overline{(a_i \oplus b_i)}\, y_{in}$$
$$x_{out} = a_i \bar{b}_i \overline{z_{in}} + x_{in}$$
$$z_{out} = \bar{a}_i b_i \overline{x_{in}} + z_{in}$$