10/8/2020

XOR

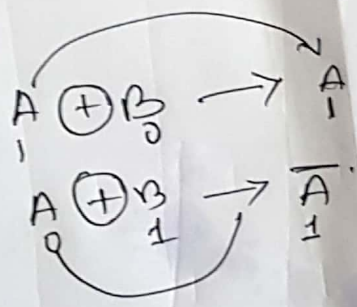
A ⊕ B

0 1 → 0

A ⊕ B

0 0 → 0

- if B is 0, whatever is in A then that will Return.
- If B is 1, whatever is in A its complement returns.



- For full Adder.

  → 2 bit additim.

0 0 0 1 0 0 1 0

0 0 0 0 0 1 0 0

$$\begin{array}{r} 10 \\ 10 \\ \hline (1)00 \end{array}$$

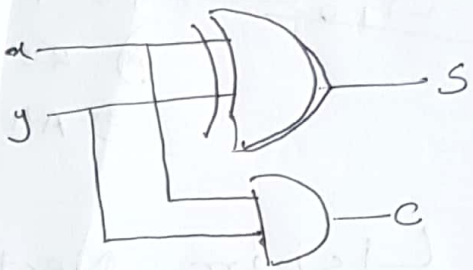
Carry

$$\begin{array}{r} {\scriptstyle 1\ 1\ 1} \\ 11 \\ 11 \\ 0 \\ \hline 110 \end{array}$$

Half Adder.

x	y	c	s
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

} XOR

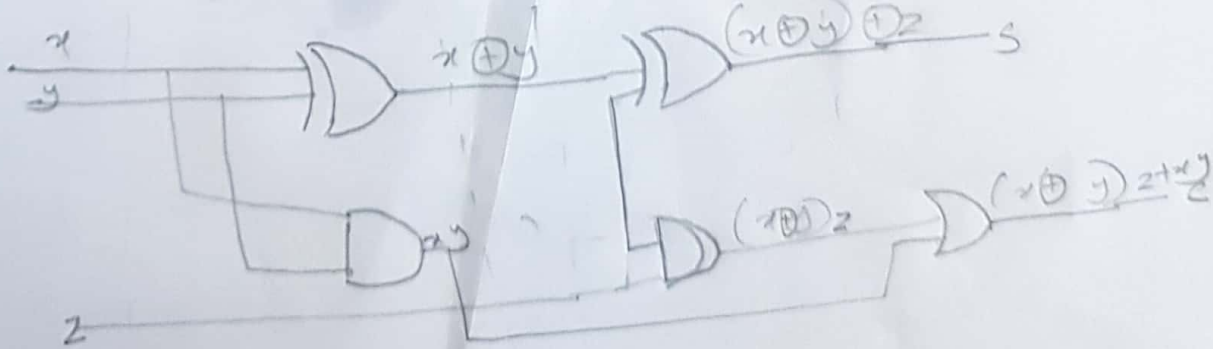


$S = x \oplus y$

$C = xy$

Full adder.

x	y	z	c	s
0	0	0	0	0
0	0	1	0	1



2 half adder with an OR gate.

1011

MID Sun.

Lab Lecture theoritical Syllabus - Lab 5

Subtraction

11 → As → Bs

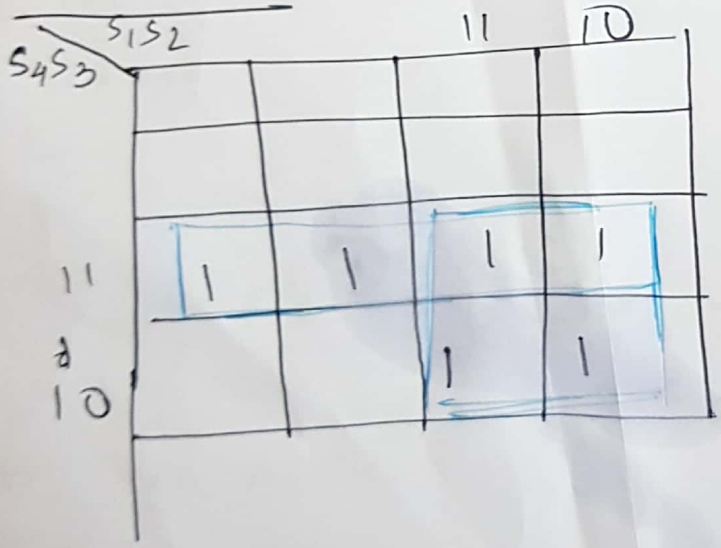
(-) 10 → 1) Compliment → 01

2) 2's comple → 1's + comple +1

3) A's + B's comple

Logisim Next Friday -

K-Map



$F = S_3S_4 + S_1S_4$