

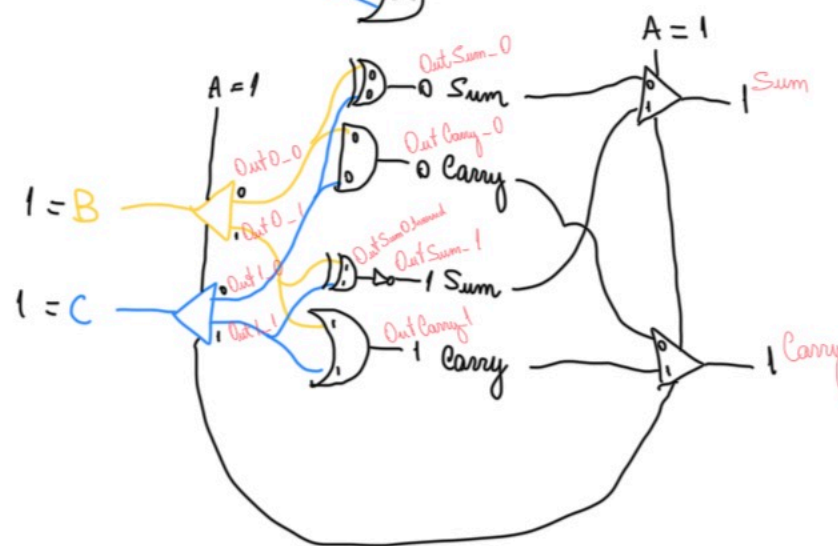
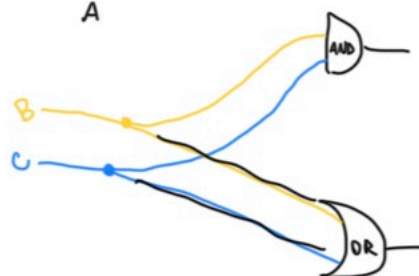
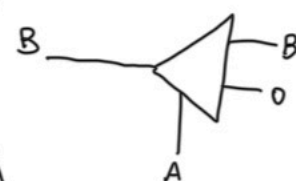
FULL-ADDER

A	B	C	Carry	Sum
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

Se $A=0$, $B \xrightarrow{\text{AND}} \text{Carry}$ e $B \xrightarrow{\text{XOR}} \text{Sum}$

Se $A=1$, $B \xrightarrow{\text{OR}} \text{Carry}$ e $B \xrightarrow{\text{XOR}} \text{Sum}$

A, B, C não intercalam!



$A[n]$
 $B[n]$
 $\text{Carry}[0]$
 \vdots
 $A[n]$
 $B[n]$
 $\text{Carry}[n-1]$

```

8 CHIP FullAdder {
9   IN a, b, c; // 1-bit inputs
10  OUT sum, // Right bit of a + b + c
11         carry; // Left bit of a + b + c
12
13  PARTS:
14  DMux(in= b, sel= a, a= Out00, b= Out01);
15  Xor(a= Out00, b= Out10, out= OutSum0);
16  And(a= Out00, b= Out10, out= OutCarry0);
17  DMux(in= c, sel= a, a= Out10, b= Out11);
18  Xor(a= Out01, b= Out11, out= OutSum0Inversed);
19  Not(in= OutSum0Inversed, out= OutSum1);
20  Or(a= Out01, b= Out11, out= OutCarry1);
21  Mux(a= OutSum0, b= OutSum1, sel= a, out= sum);
22  Mux(a= OutCarry0, b= OutCarry1, sel= a, out= carry);
23 }

```

