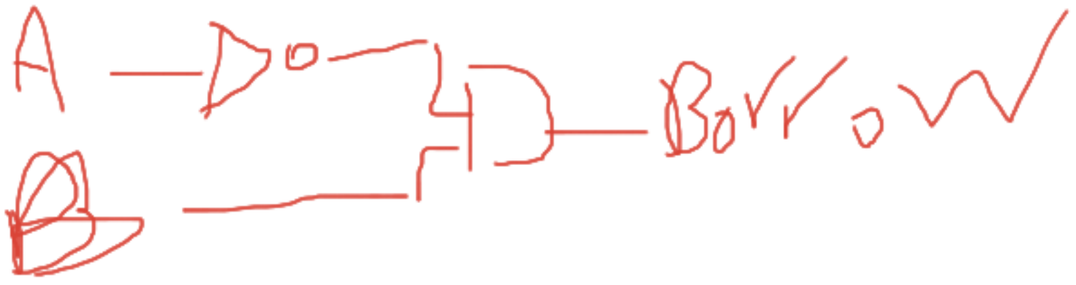
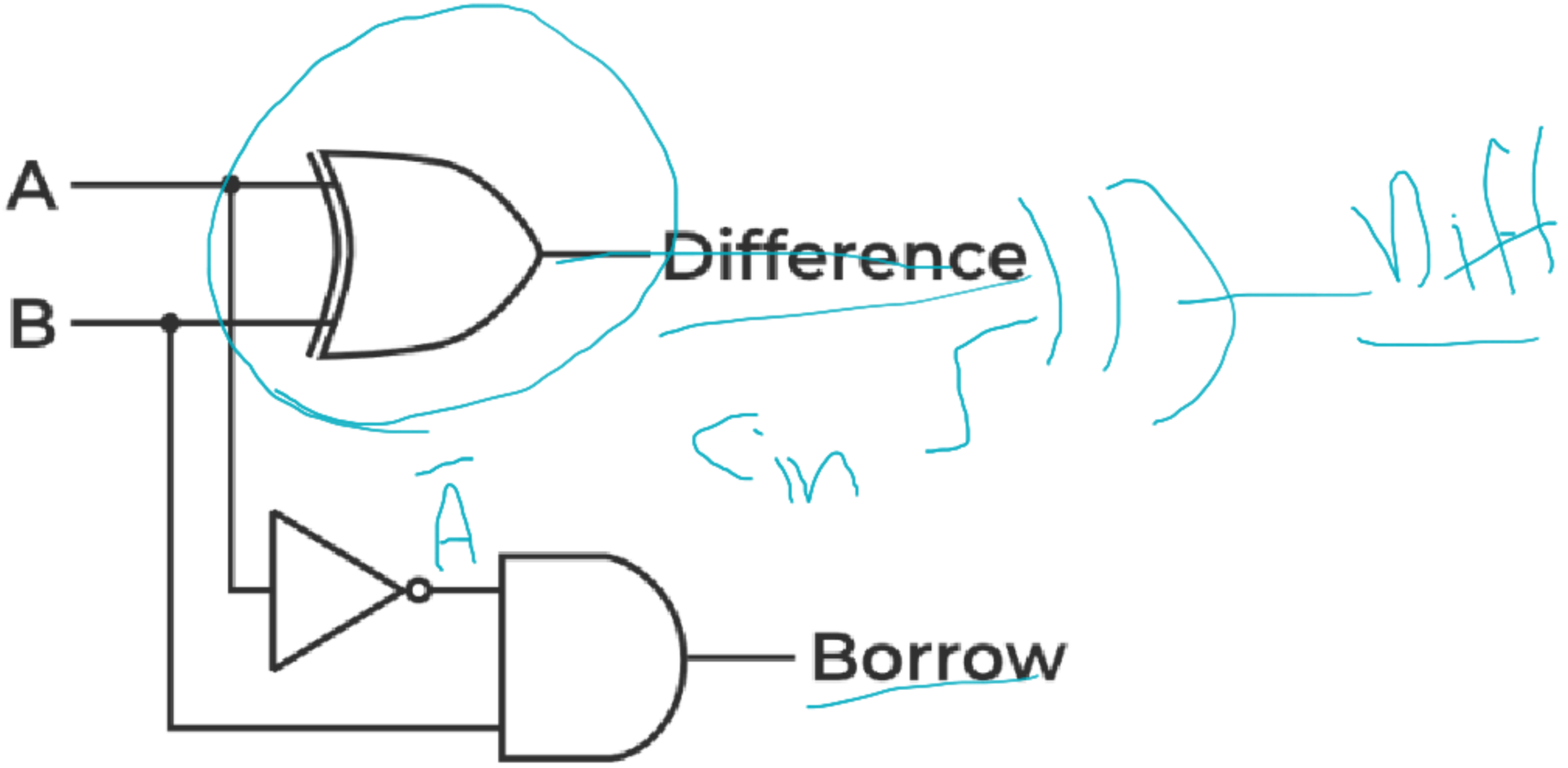
Half Subtractor

A - B

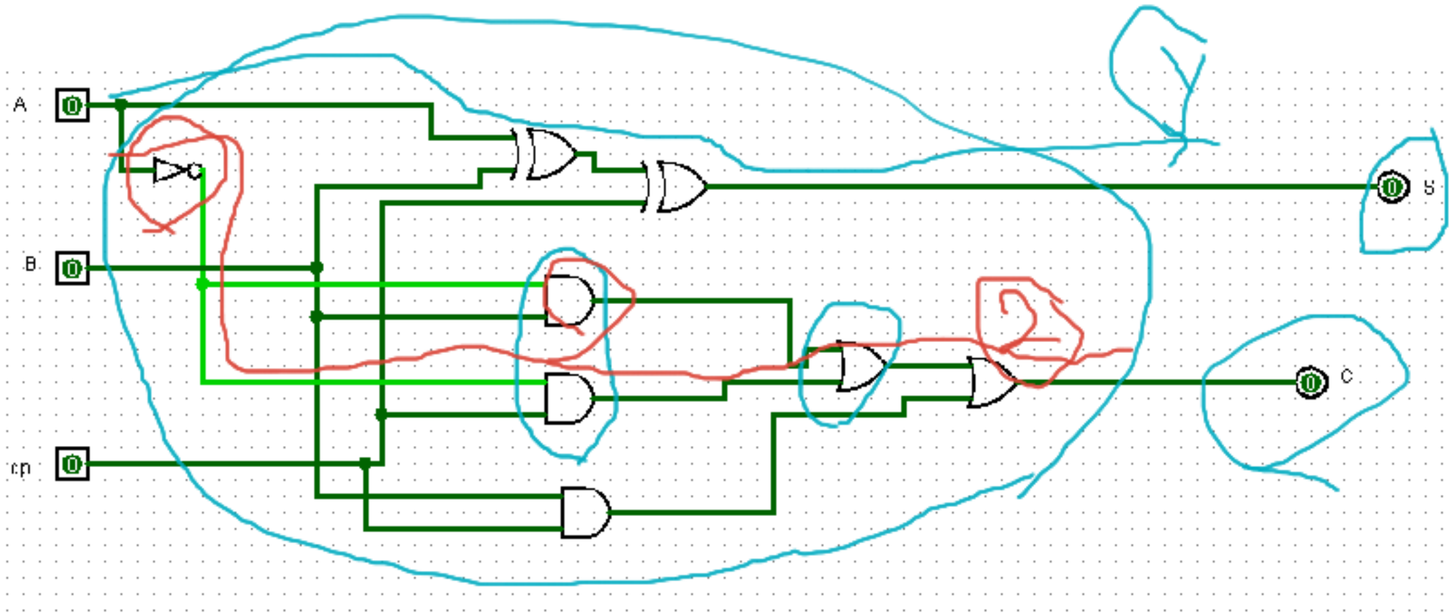
A	B	Diff	Borrow
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

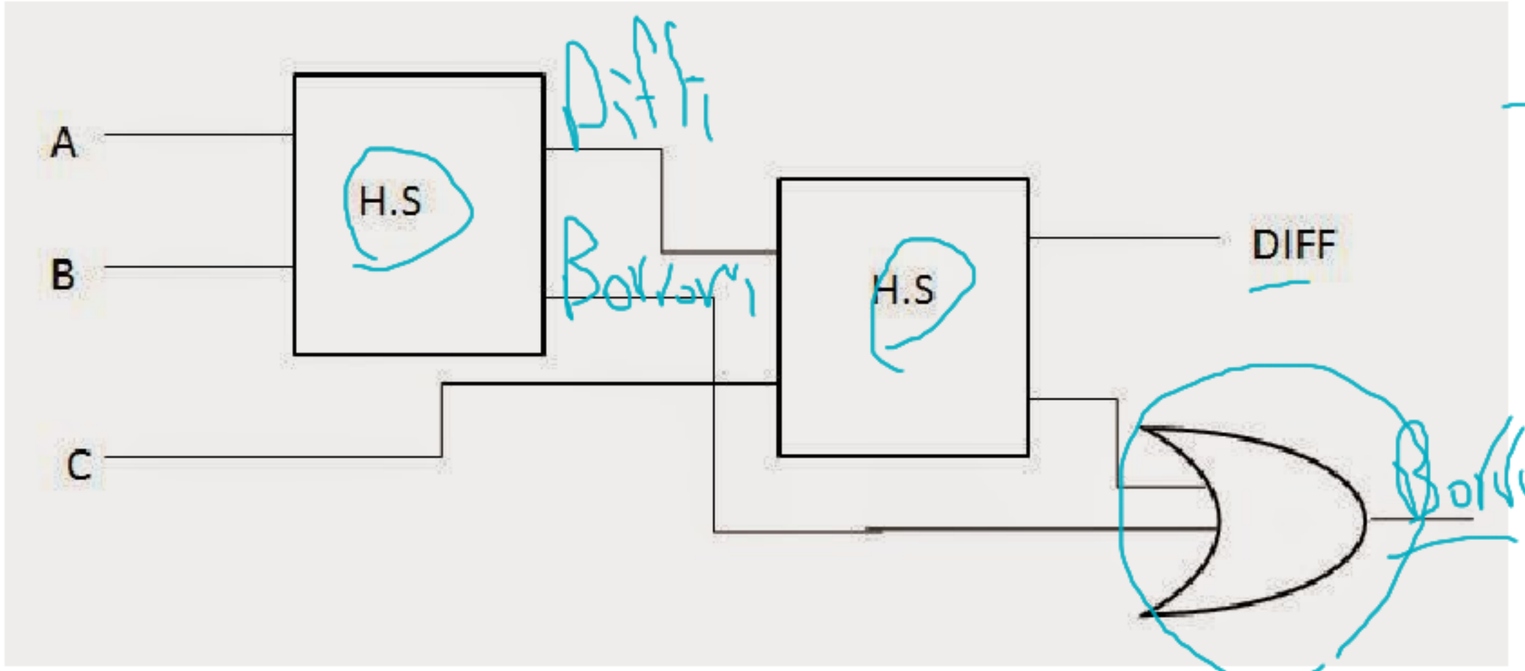


0 2
X 0
1 -
1
0


A
B
Difference
Borrow

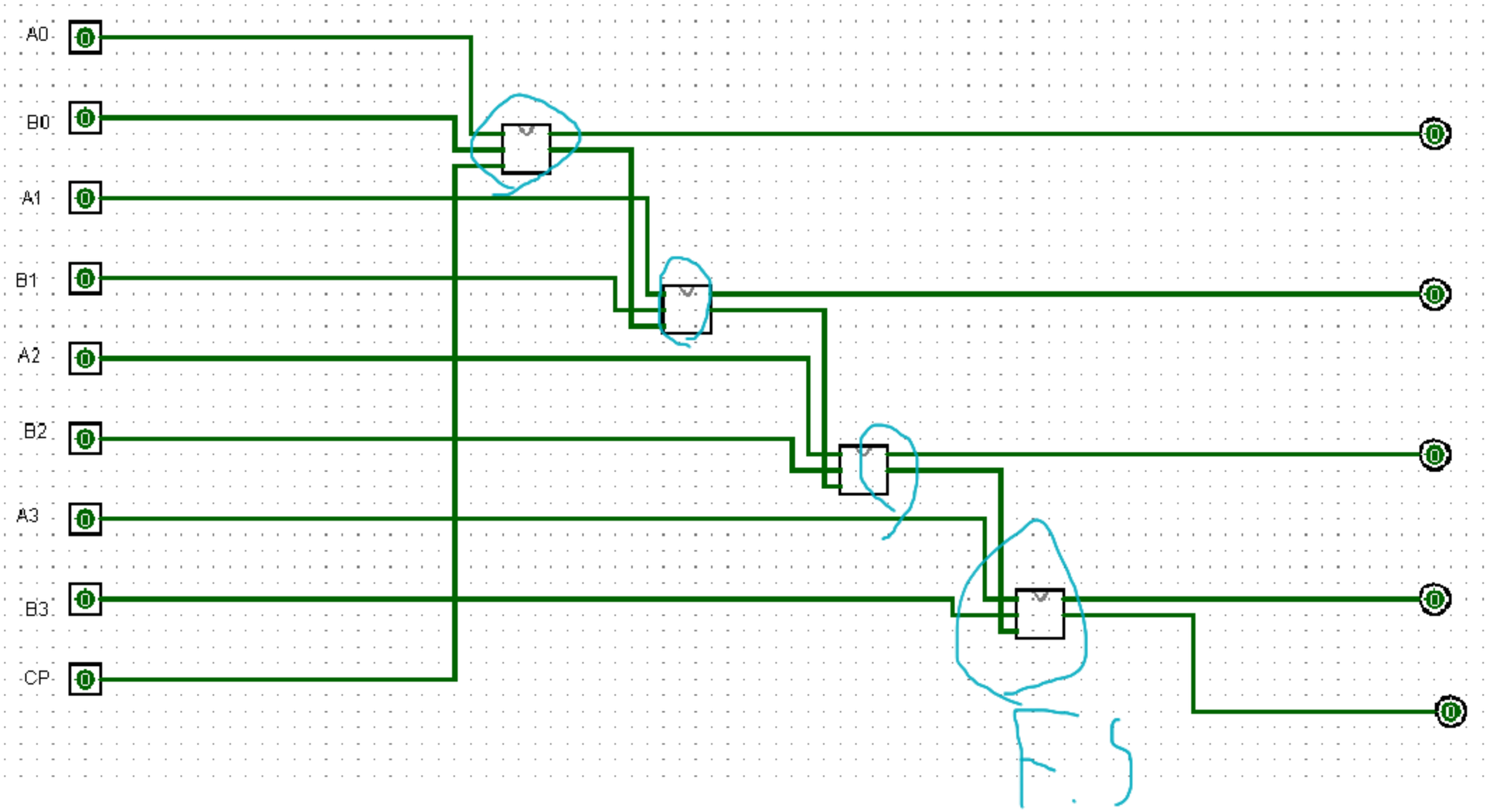
Full Subtractor



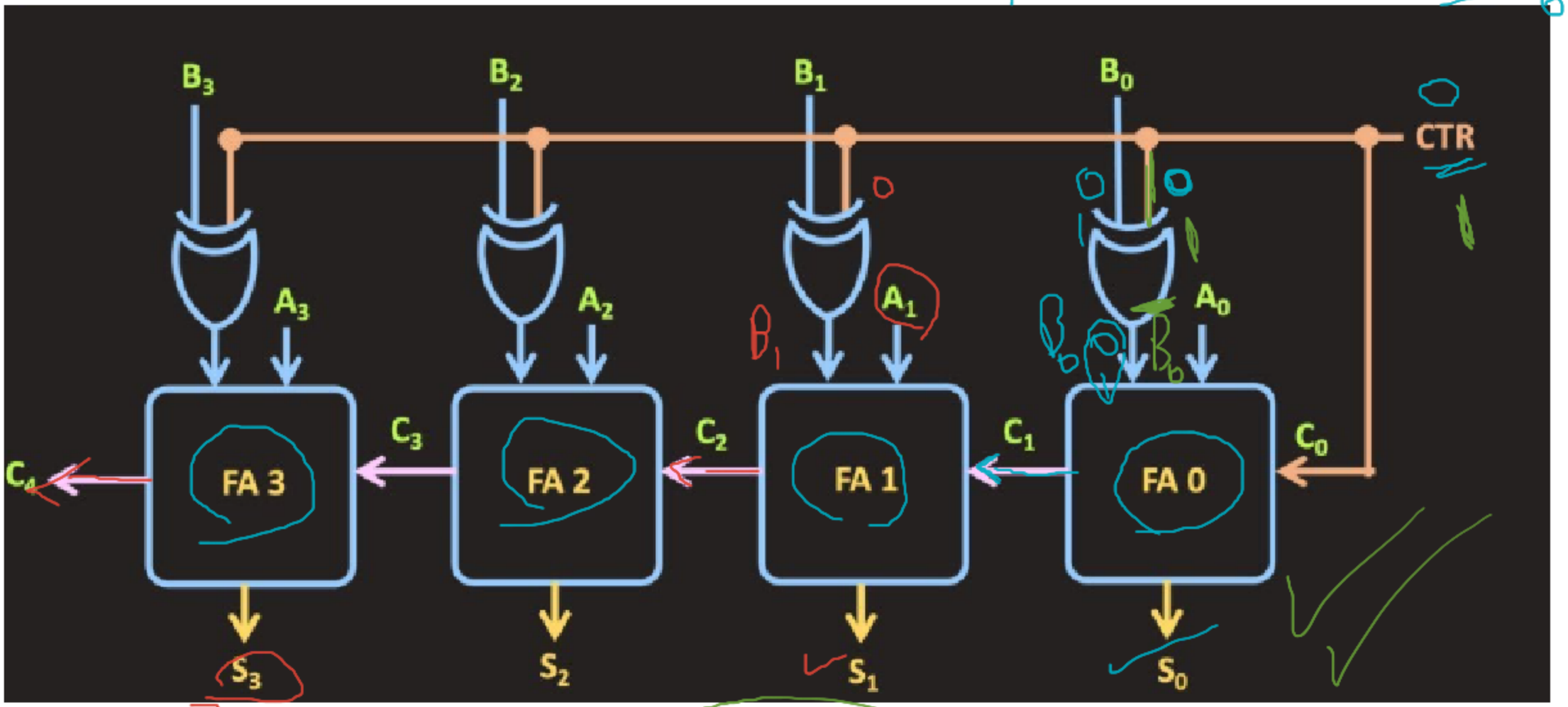


Cin	A	B	Diff	Bor
0	0	0	0	0
	0	1		
	1	0		
	1	1		

4-bit Subtractor



Adder / Sub



MSB

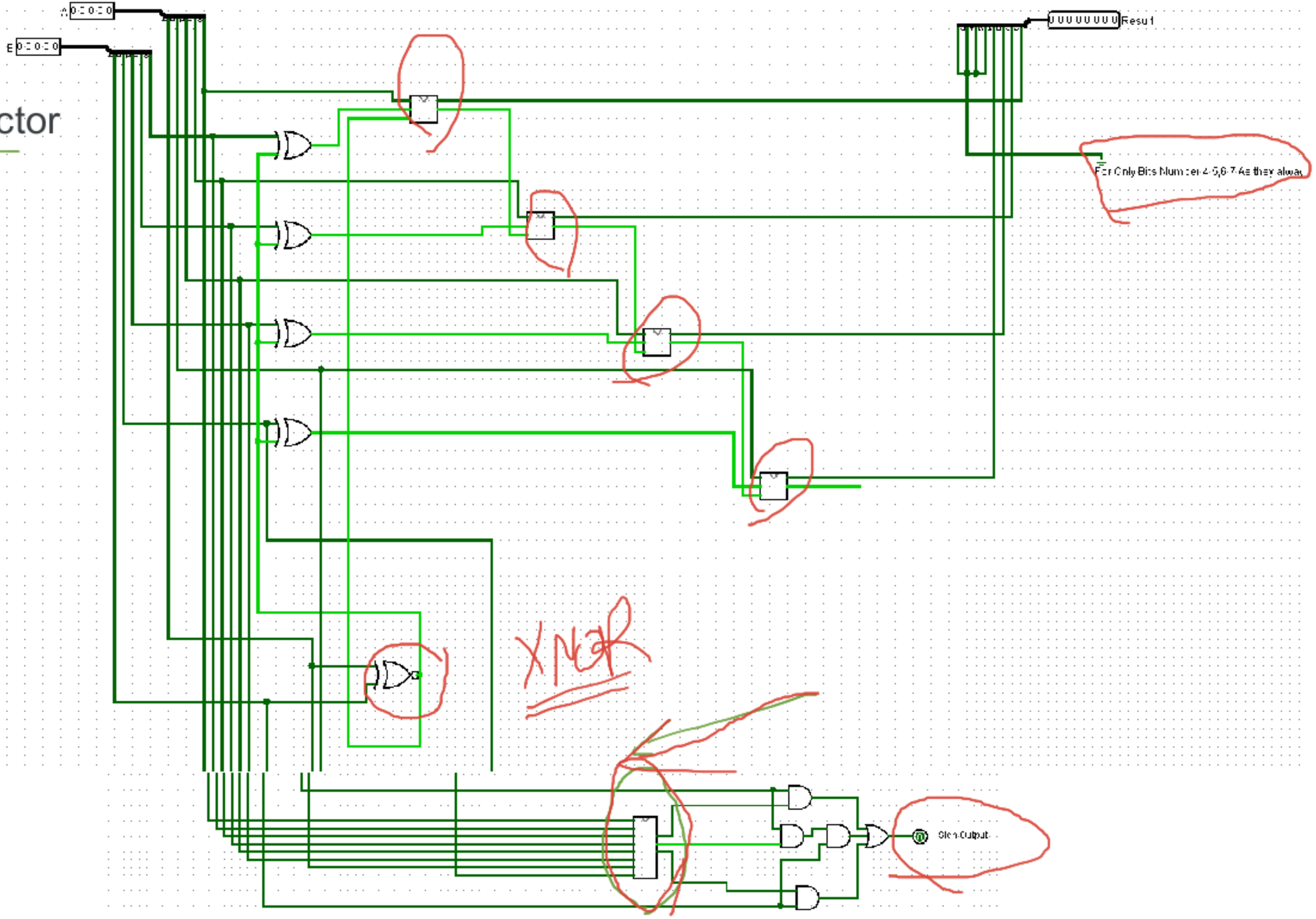
$A_0 + B_0 + 1$

LSB

4-bit signed Subtractor

A+B

A-B



Multiplier

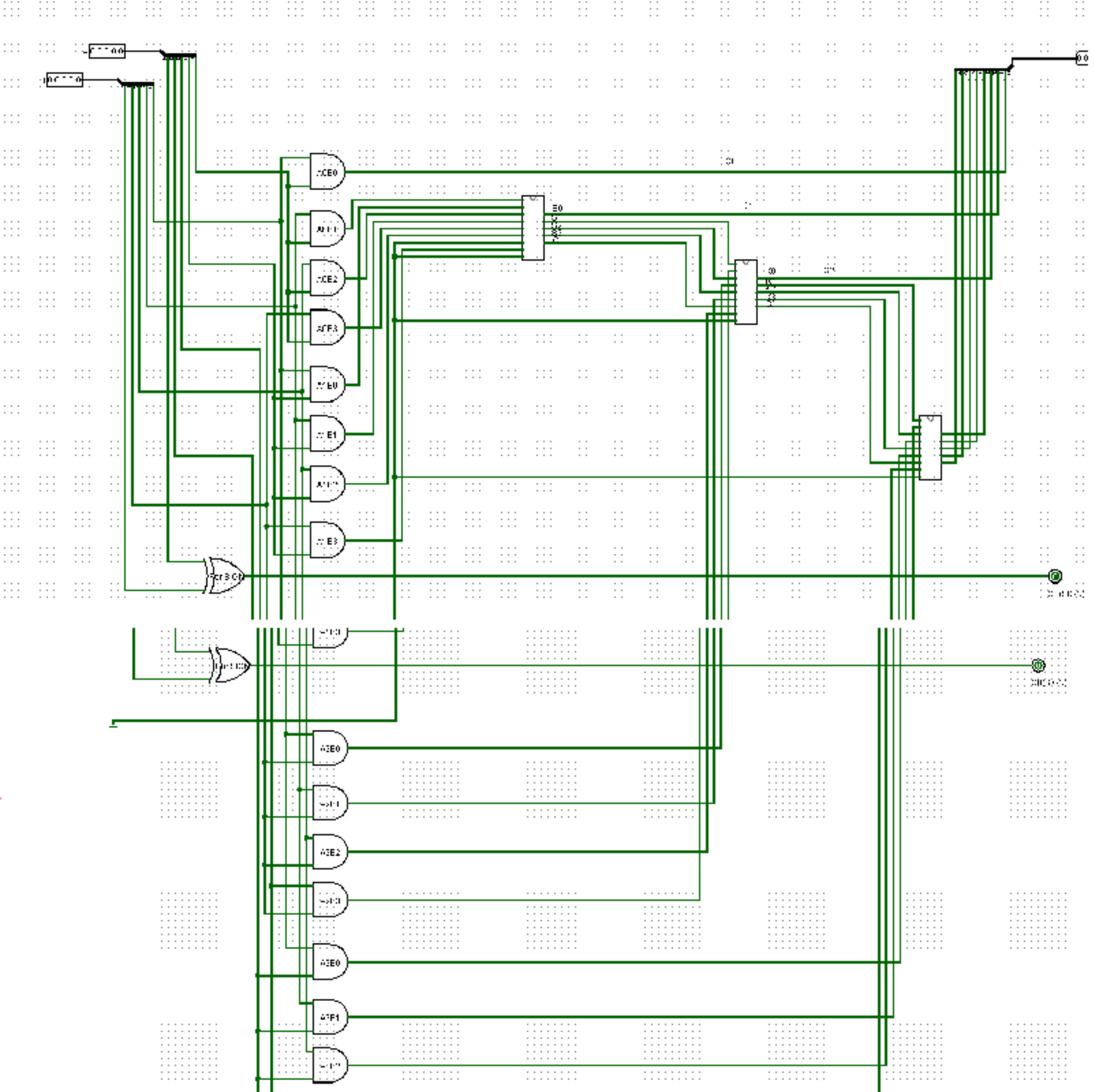
$A_1 A_0$ *

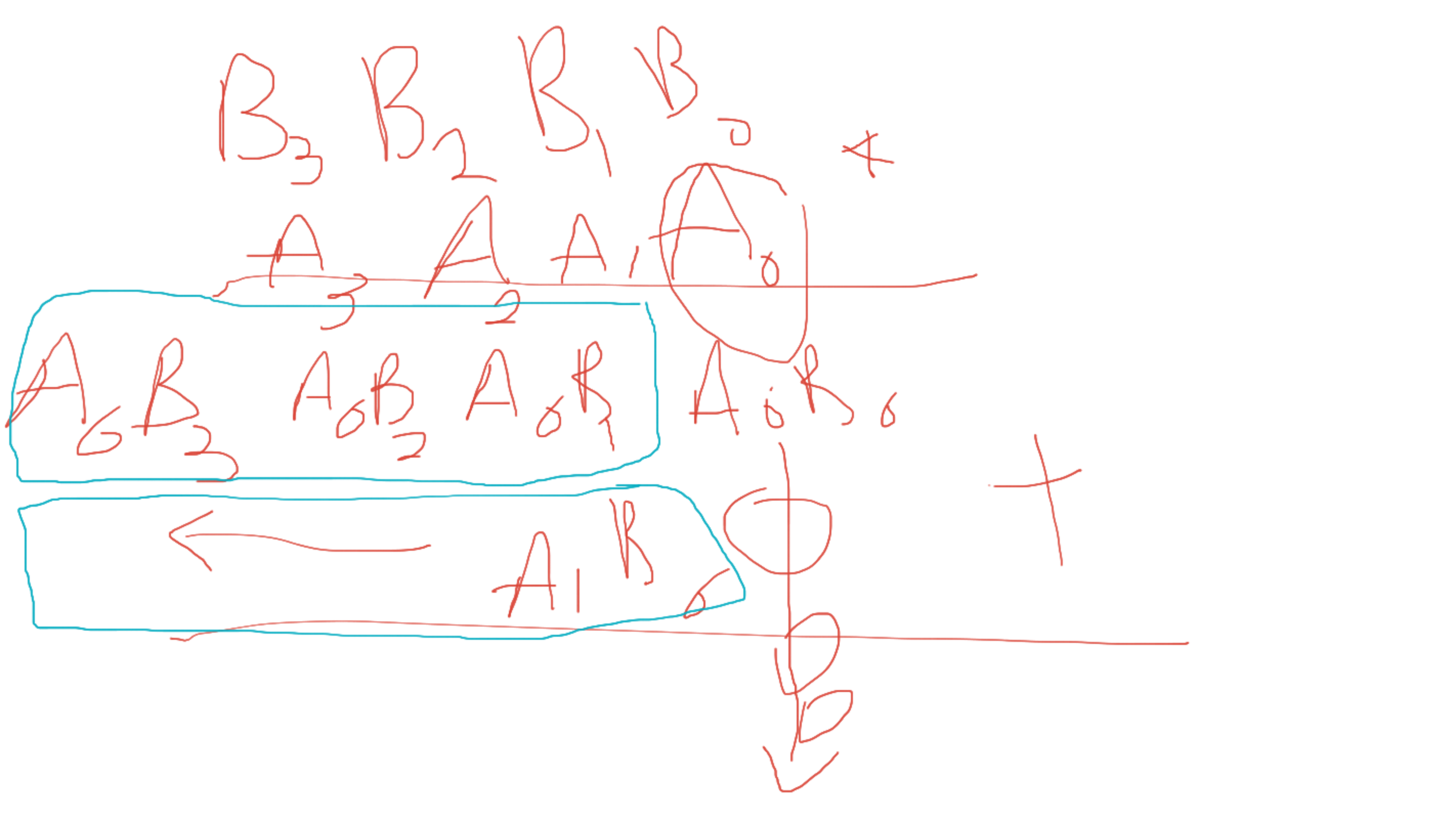
$B_1 B_0$

$A_1 B_0$ $A_0 B_0$ +

$A_1 B_1$ $A_0 B_1$ 0 +

exercise: Divider




B3 B2 B1 B0
A3 A2 A1 A0
A3B3 A2B2 A1B1 A0B0
A1 B1