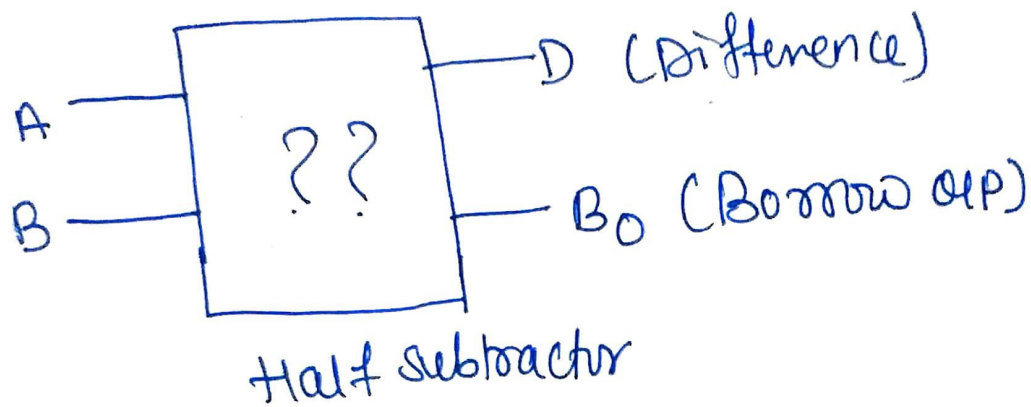


Subtractor

Half Subtractor



↳ Subtract two binary nos.

↳ Circuit for binary subtraction.

$$\begin{array}{r} 01 \\ + 01 \\ \hline 01 \text{ Ans} \end{array}$$

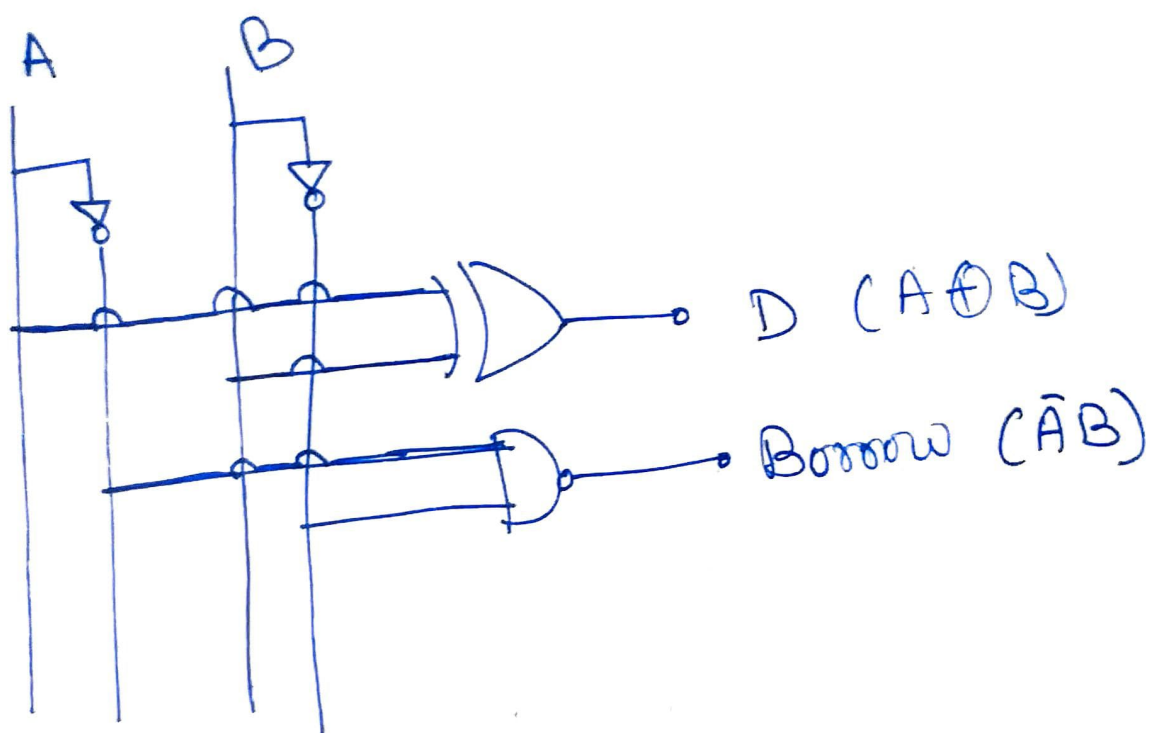
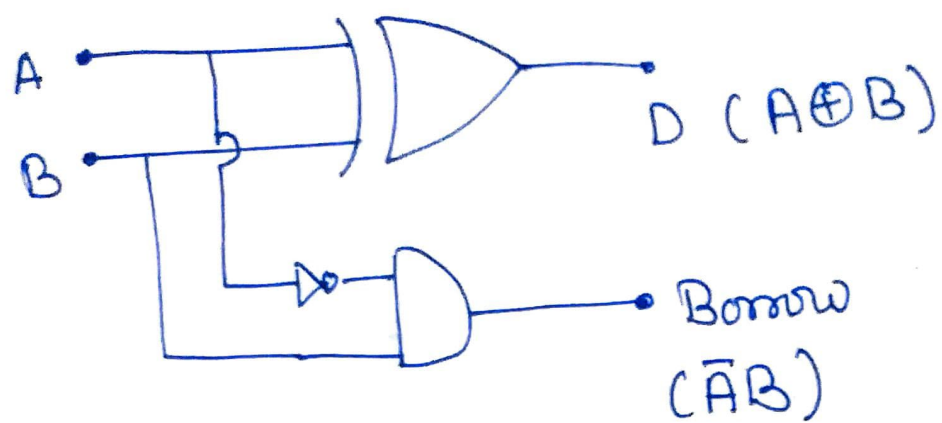
$$\begin{array}{r} 2 \\ + 0 \\ \hline = 1 \end{array}$$

A	B	D	B ₀
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

* Minimize the subtractor.

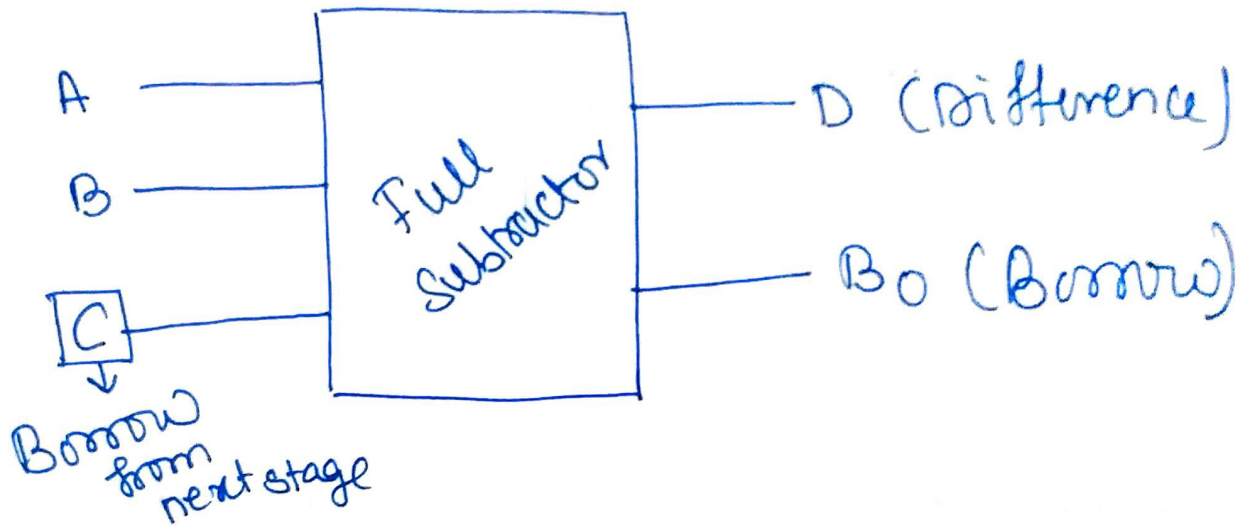
$$\text{Difference} = D = A \oplus B$$

$$\text{Borrow} = B = \bar{A}B$$



~~FULL SUBTRACTOR~~

Full Subtractor



A	B	C	D	Bo
0	0	0	0	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	1
1	0	0	1	0
1	0	1	0	0
1	1	0	0	0
1	1	1	1	1

Difference

A \ BC	00	01	11	10
0		1		1
1	1		1	

↓
check board

$$A \oplus B \oplus C$$

Borrow

A \ BC	00	01	11	10
0		1	1	1
1			1	

Borrow = $BC + \bar{A}B + \bar{A}C$

