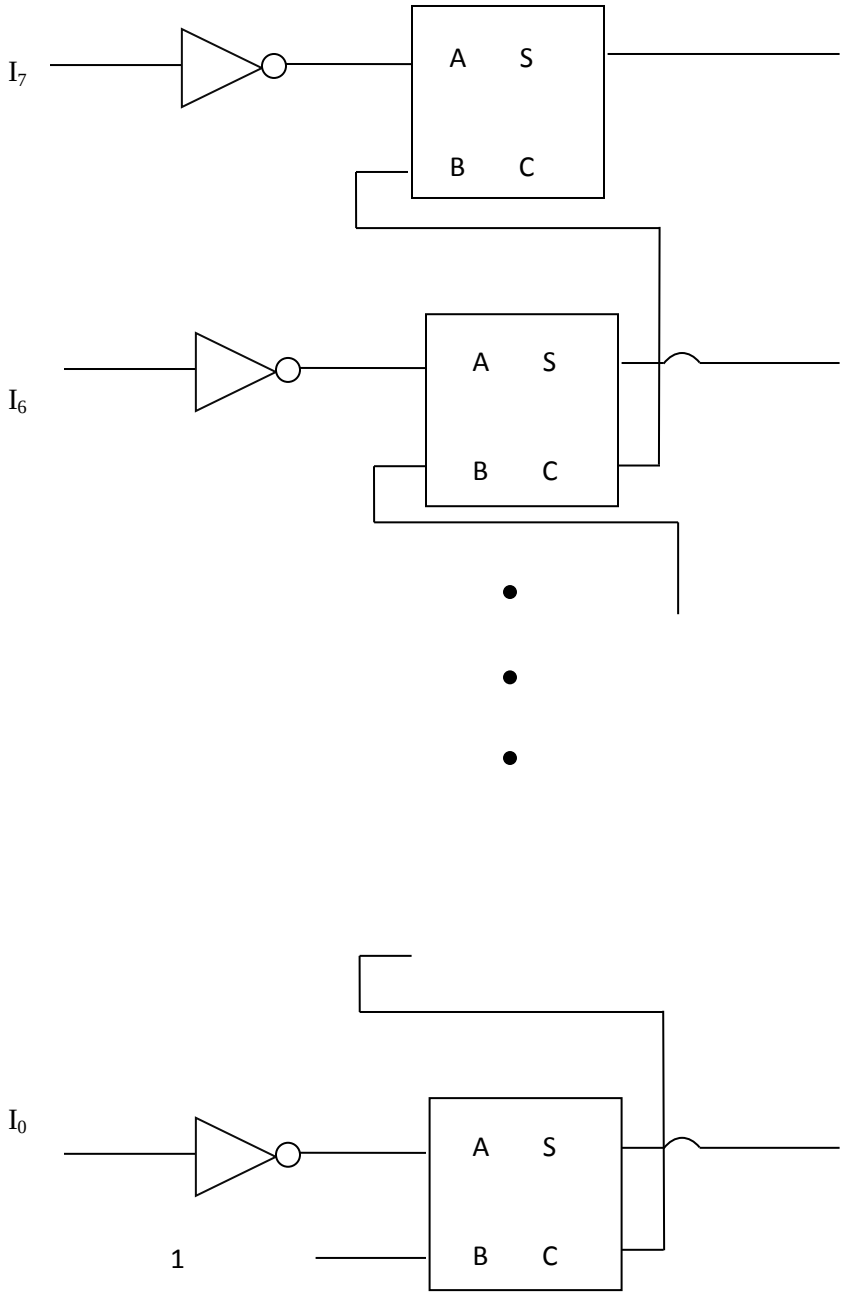
Homework #2-1



Homework 2-2

(a). Bollinger B-5

a. $\underbrace{11011}_{B}\ \underbrace{0111}_{7} = 1B7_{16}$

d. $\underbrace{1011}_{B} . \underbrace{0111}_{7} = B.7_{16}$

(b). Bollinger B-7

$-346_{10} = 1111111010100110_2$

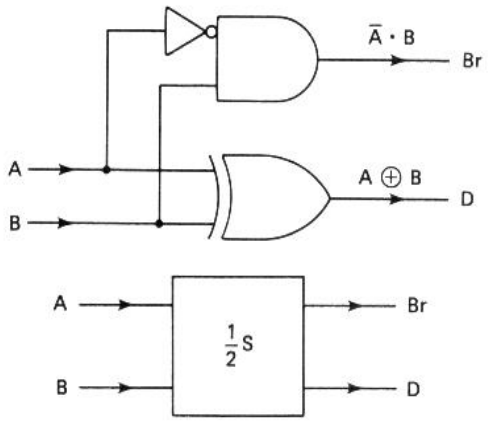
$2242_{10} = 0000100011000010_2$

$-3465_{10} = 1111001001110111_2$

3.

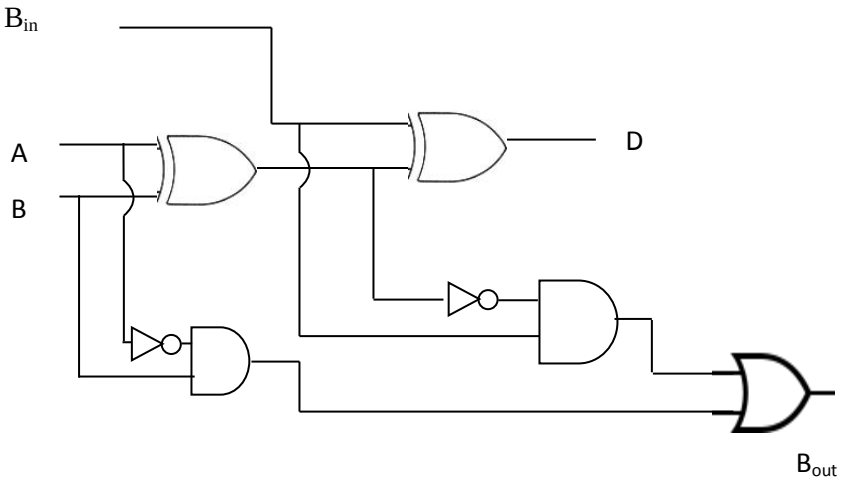
a) half subtractor

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



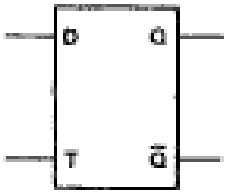
b) Full borrower

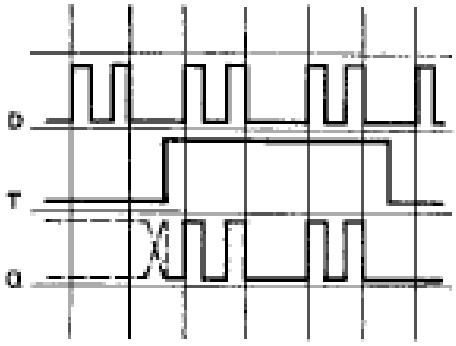
A	B	B_{in}	D	B_{out}
0	0	0	0	0
0	0	1	1	1
0	1	0	1	1
0	1	1	0	1
1	0	0	1	0
1	0	1	0	0
1	1	0	0	0
1	1	1	1	1

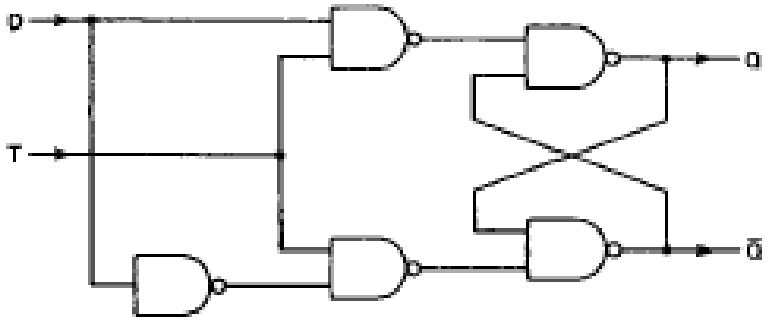


Type equation here.

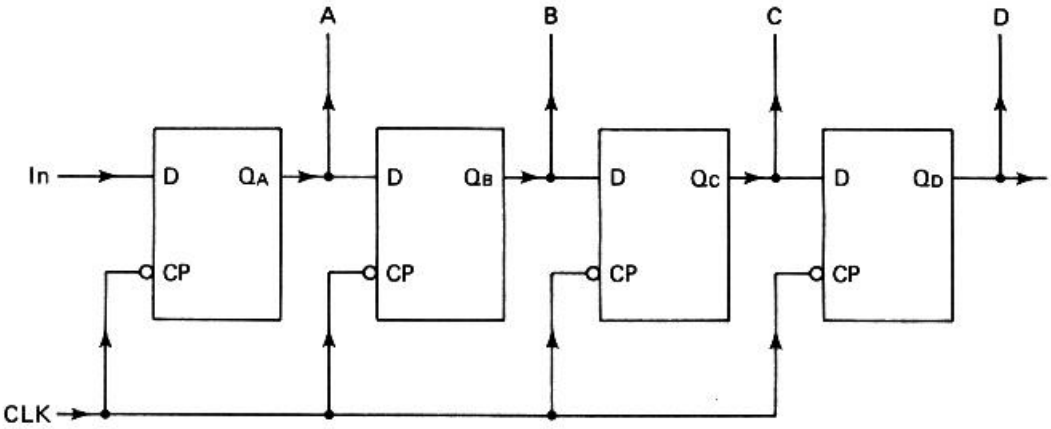
#2-4

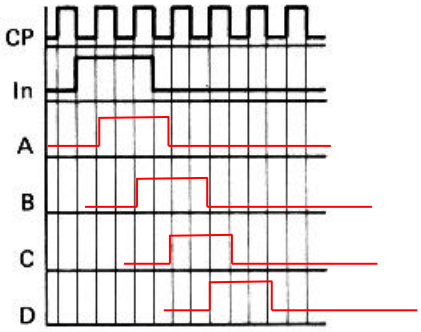






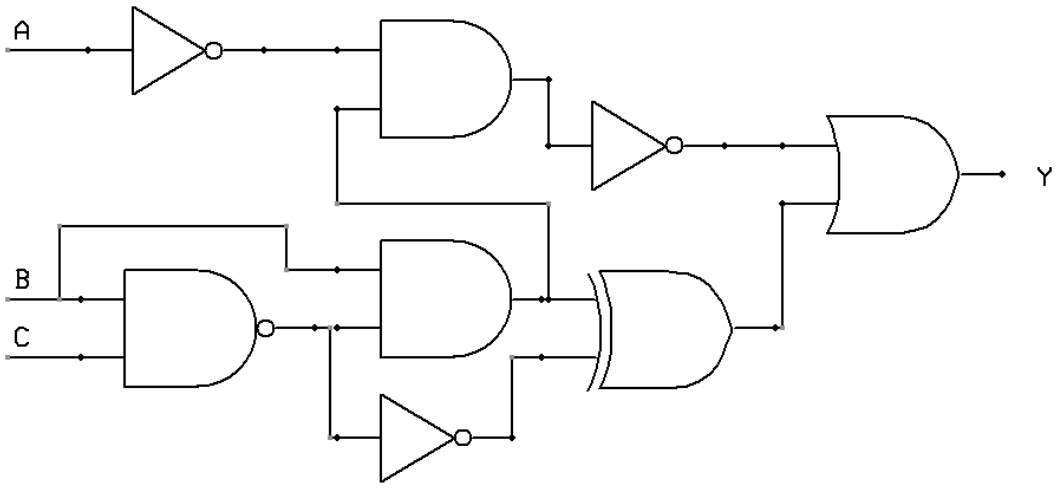
(b)





(a) Complete the truth table for the following circuit

A	B	C	Y
0	0	0	
0	0	1	
0	1	0	
0	1	1	
1	0	0	
1	0	1	
1	1	0	
1	1	1	



$$y = \overline{\left(\overline{A}\cdot B\cdot\overline{(B\cdot C)}\right)} + B\cdot C \oplus B\cdot\overline{(B\cdot C)}$$

$$= A + \overline{B} + B\cdot C + \left(\overline{B\cdot C}\right)\cdot B\cdot\overline{(B\cdot C)} + B\cdot C\cdot\left(\overline{B\cdot\overline{(B\cdot C)}}\right)$$

$$= A + \overline{B}(1+C) + B\cdot C + B\left(\overline{B}+\overline{C}\right) + B\cdot C\cdot\left(\overline{B}+B\cdot C\right)$$

$$= A + \overline{B} + C + B\cdot\overline{C} + B\cdot C$$

$$= A + \overline{B} + C + B$$

$$= A + 1 + C = 1$$