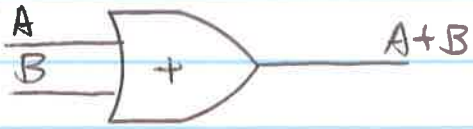
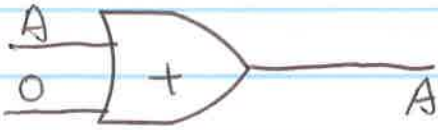
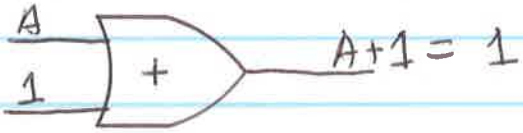


but if B is $\emptyset$

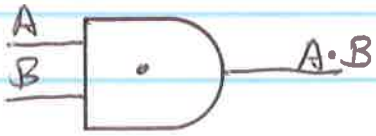


$A + 0 = A$ rule 1

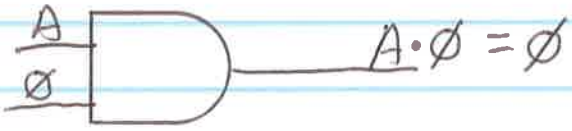
if B = 1



rule 2

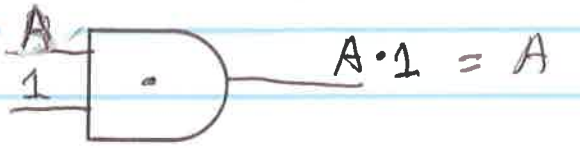


but if B is $\emptyset$

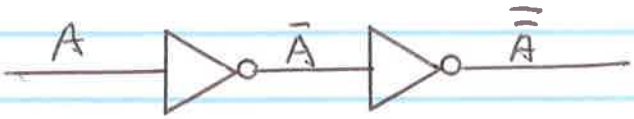


rule 3

if B is 1



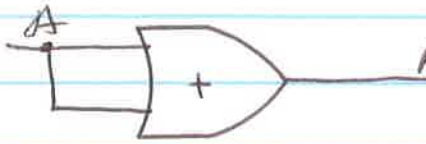
rule 4



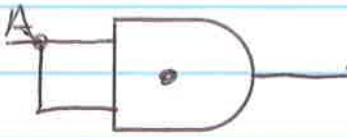
A	$\bar{A}$	$\bar{\bar{A}}$
0	1	0
1	0	1

$\bar{\bar{A}} = A$ rule 9

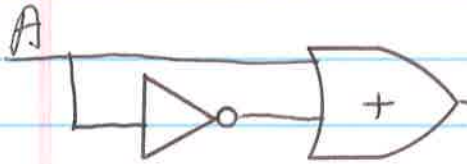
=



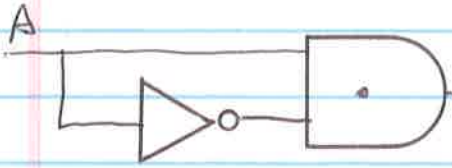
$A + A = A$ rule 5



$A \cdot A = A$ rule 7

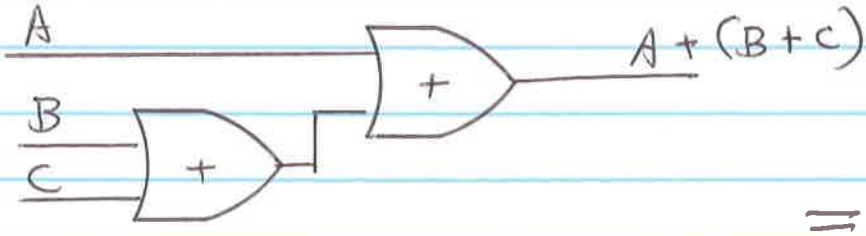


$A + \bar{A} = 1$ rule 6



$A \cdot \bar{A} = 0$ rule 8

Does it matter what order

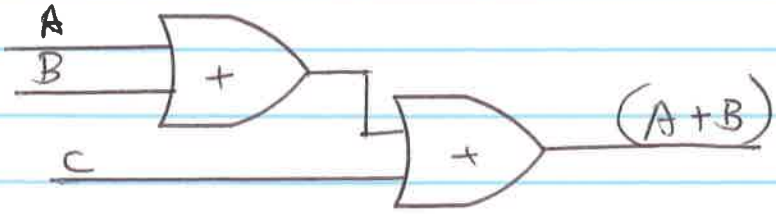


$A + (B + C)$

$= A + B + C$

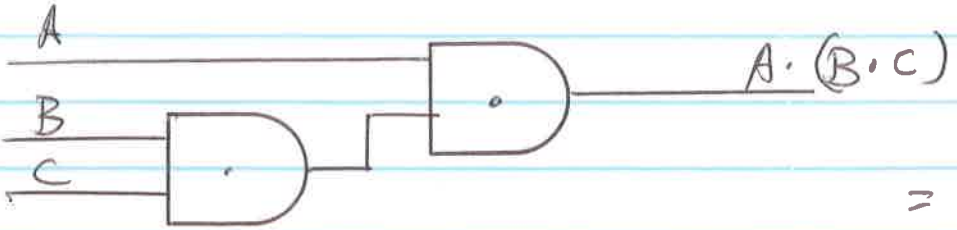
$= C + A + B$

ex 6...



$(A + B) + C$

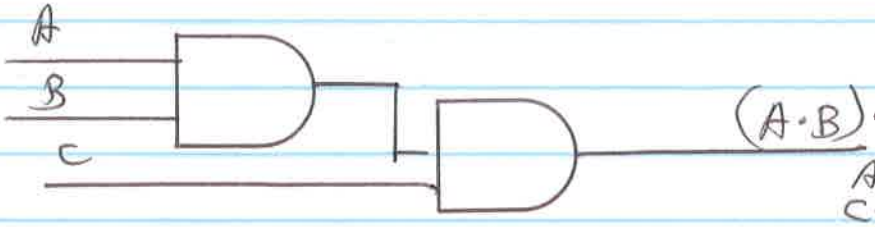
associative and commutative law for or



$= ABC$

$= BCA$

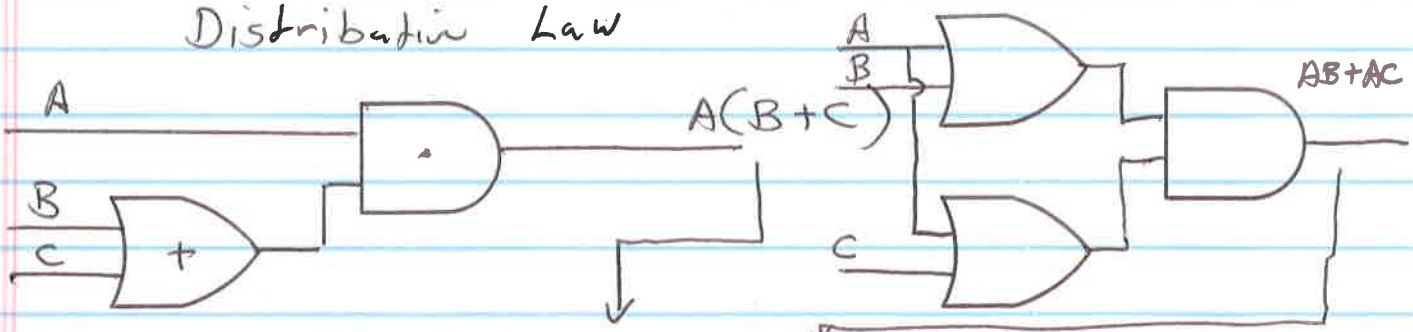
$= BAC$



Associative and cummutative law

and

Distribution Law



A	B	C	out	out
0	0	0	0	0
0	0	1	0	0
0	1	0	0	0
0	1	1	0	0
1	0	0	0	0
1	0	1	1	1
1	1	0	1	1
1	1	1	1	1

They are the same so

$A(B+C) = AB + AC$

rule 10 proof

$A + AB = A$

$A(1 + B)$

rule 2

$A(1)$

rule 4

A

=

rule 12 proof

$(A+B)(A+C) = A + BC$

$AA + AC + AB + BC$

rule 7

A

$(A + AC + AB) + BC$

$A(1 + C + B) + BC$

rule 2

$A(1) + BC$

$A + BC$

=