Boolean algebra and logic gates

A and B can be equal 0 or 1.
$\bar{A}$ = not A, contradiction of A, A reversed

Statement 1. - Commutative Law
A+B = B+A
A*B = B*A

Statement 2. - Associative Law
(A+B)+C = A+(B+C)

Statement 3.
A*(B+C) = A*B+A*C
A+(B*C) = (A+B)*(A+C)

Statement 4. - Idempotent Law
A+A = A
A*A = A

Statement 5.
A*B+A*$\bar{B}$ = A
(A+B)*(A+B) = A

Statement 6. - Absorption Law
A+A*B = A
A*(A+B) = 1

Statement 7. - Identity Law
0+A = A
0*A = 0

Statement 8.
1+A = 1
1*A = A

Statement 9.
$\bar{A}$+A = 1
$\bar{A}$*A = 0

Statement 10.
A+$\bar{A}$*B = A+B
A*($\bar{A}$+B) = A*B

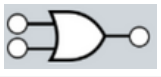
Statement 11. - De Morgan's Law
$\overline{A+B}$ = $\bar{A}$*$\bar{B}$
$\overline{A*B}$ = $\bar{A}$+$\bar{B}$

Y is the result of letting A and B through a given logic gate.

OR

Y = A+B

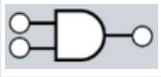
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1



AND

Y = A*B

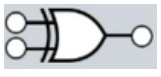
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1



XOR

Y = A*$\bar{B}$+$\bar{A}$*B

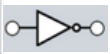
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0



NOT

Y = $\bar{A}$

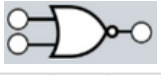
A	B
0	1
1	0



NOR

Y = $\overline{A+B}$

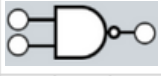
A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0



NAND

Y = $\overline{A*B}$

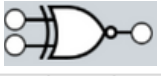
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0



XNOR

Y = A*B+$\bar{A}$*$\bar{B}$

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



A	B	$\overline{A*B}$	$\bar{A}$+$\bar{B}$
0	0	1	1
0	1	1	0
1	0	1	0
1	1	0	0