

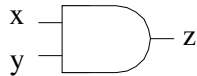
Lógica Booleana

AND * (E) - Conjunção

$$Z = X \text{ AND } Y$$

$$Z = X * Y$$

$$Z = X \text{ e } Y$$



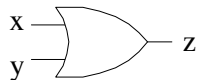
X	Y	Z = X AND Y
0	0	0
0	1	0
1	0	0
1	1	1

OR + (ou) - Disjunção

$$Z = X \text{ OR } Y$$

$$Z = X + Y$$

$$Z = X \text{ ou } Y$$



X	Y	Z = X OR Y
0	0	0
0	1	1
1	0	1
1	1	1

NOT ~ (não) - Negação

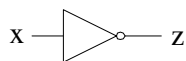
$$Z = \text{NOT } X$$

$$Z = \sim X$$

$$Z = \text{ não } X$$

$$Z = /X$$

$$Z = \bar{X}$$



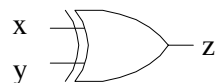
X	Z = NOT X
0	1
1	0

XOR ⊕ (ou ... ou) - Exclusão

$$Z = X \text{ XOR } Y$$

$$Z = X \oplus Y$$

$$Z = \text{ ou } X \text{ ou } Y$$

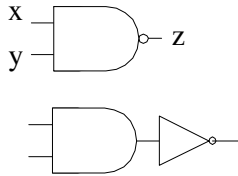


X	Y	Z = X XOR Y
0	0	0
0	1	1
1	0	1
1	1	0

NAND

$$Z = X \text{ NAND } Y$$

$$Z = \overline{X * Y}$$

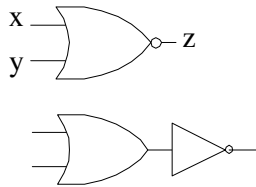


X	Y	Z = X NAND Y
0	0	1
0	1	1
1	0	1
1	1	0

NOR

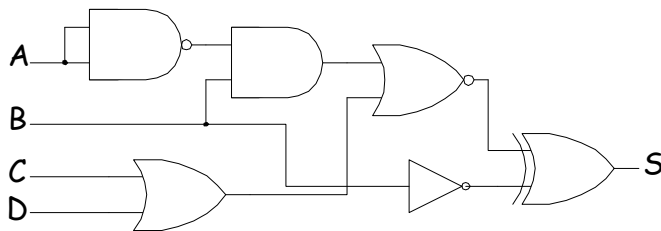
$$Z = X \text{ OR } Y$$

$$Z = \overline{X + Y}$$



X	Y	Z = X NOR Y
0	0	1
0	1	0
1	0	0
1	1	0

Exemplo: Escreva a **expressão lógica** e construa a **tabela de verdade** do **circuito seguinte**:



$$S = \overline{(\overline{A * B} + (C + D))} \oplus B$$

A	B	C	D	S
0	0	0	0	0
0	0	0	1	1
0	0	1	0	1
0	0	1	1	1
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0
1	0	0	0	1
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1