

ELECTRÓNICA DIGITAL

1. PUERTAS LÓGICAS

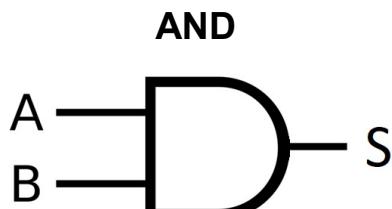


TABLA DE LA VERDAD

A	B	$F = AB$
0	0	0
0	1	0
1	0	0
1	1	1

CIRCUITO ELÉCTRICO EQUIVALENTE

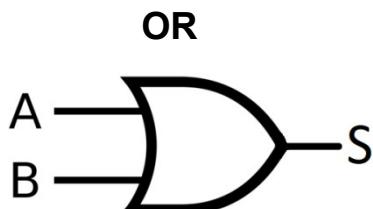
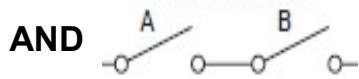


TABLA DE LA VERDAD

A	B	$F = A + B$
0	0	0
0	1	1
1	0	1
1	1	1

CIRCUITO ELÉCTRICO EQUIVALENTE

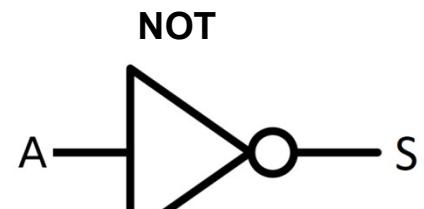
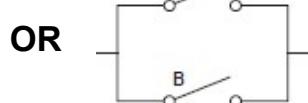


TABLA DE LA VERDAD

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

CIRCUITO ELÉCTRICO EQUIVALENTE

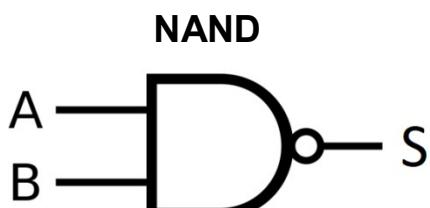
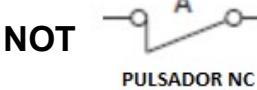


TABLA DE LA VERDAD

A	B	$F = \overline{AB}$
0	0	1
0	1	1
1	0	1
1	1	0

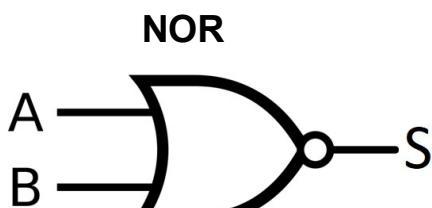


TABLA DE LA VERDAD

A	B	$F = \overline{A+B}$
0	0	1
0	1	0
1	0	0
1	1	0

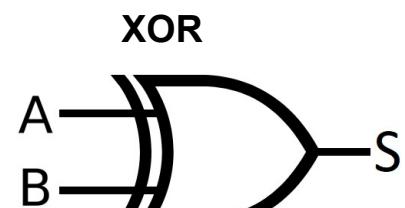


TABLA DE LA VERDAD

A	B	\bar{A}	\bar{B}	$A\bar{B}$	$\bar{A}B$	$F = A \oplus B$
0	0	1	1	0	0	0
0	1	1	0	0	1	1
1	0	0	1	1	0	1
1	1	0	0	0	0	0

FÍJATE:

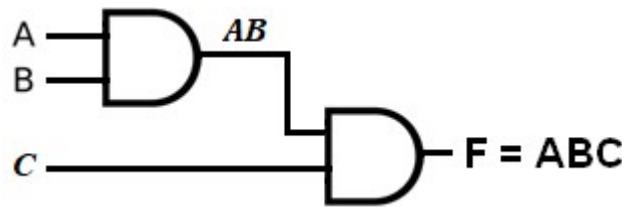
Las puertas lógicas AND, OR, NAND, NOR y XOR tienen el mismo resultado a la salida cuando las entradas valen $A = 0$ y $B = 1$ que cuando las entradas valen $A = 1$ y $B = 0$.

Cuando las entradas valen $A = 0$ y $B = 0$ $\left\{ \begin{array}{l} \text{La salida de AND, OR y XOR vale 0.} \\ \text{La salida de NAND y NOR vale 1.} \end{array} \right.$

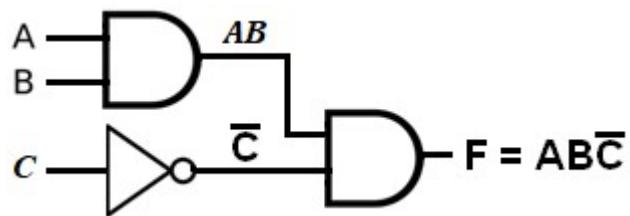
Cuando las entradas valen $A = 1$ y $B = 1$ $\left\{ \begin{array}{l} \text{La salida de NAND, NOR y XOR vale 0.} \\ \text{La salida de AND y OR vale 1.} \end{array} \right.$

2. CIRCUITO DE UNA FUNCIÓN CON PUERTAS LÓGICAS (LOGIGRAMA).

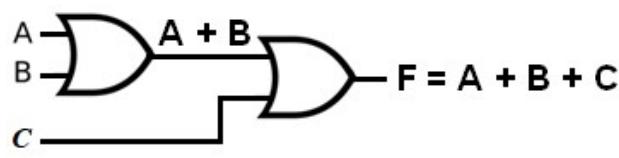
Ejemplo 1: $F = ABC$



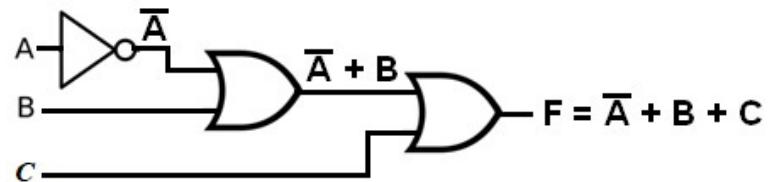
Ejemplo 2: $F = AB\bar{C}$



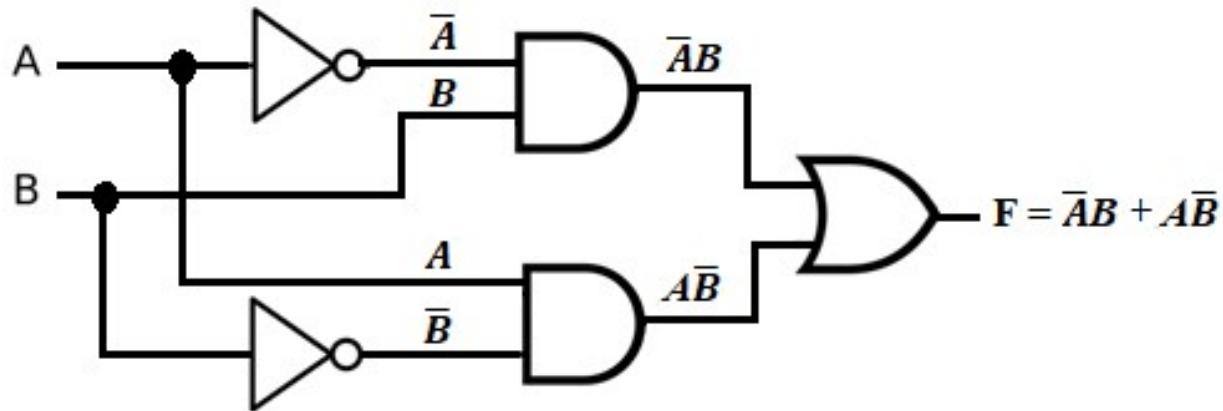
Ejemplo 3: $F = A + B + C$



Ejemplo 4: $F = \bar{A} + B + C$



Ejemplo 5: $F = \bar{A}B + A\bar{B}$



Ejemplo 6: $F = C(AB + \bar{A}\bar{B})$

