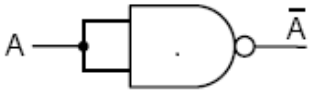
Construir un NOT con NAND

$$F=\overline{A.B}=\overline{A.A}=\overline{A}$$

Idempotencia



1

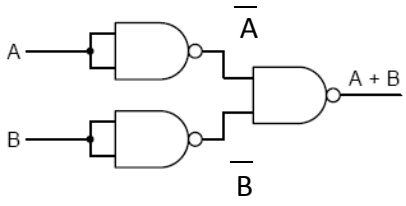
Construir un OR con NAND

Doble Negación

$$F=\overline{\overline{A+B}}=\overline{A+B}=\overline{A}\ .\ \overline{B}$$

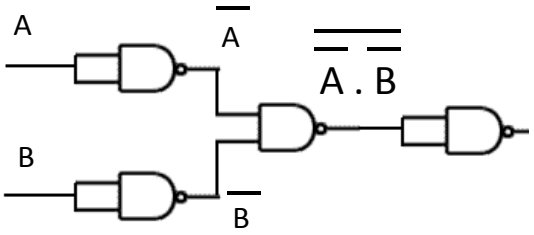
De Morgan

$$=\overline{\overline{A}\ .\ \overline{B}}$$



2

Construir un NOR con NAND



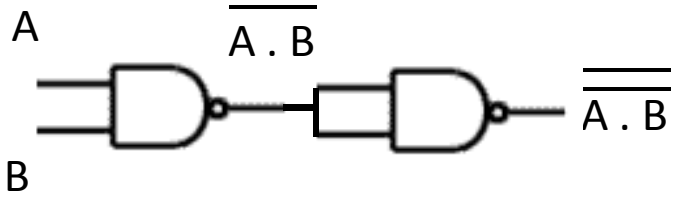
Doble Negación

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

De Morgan

3

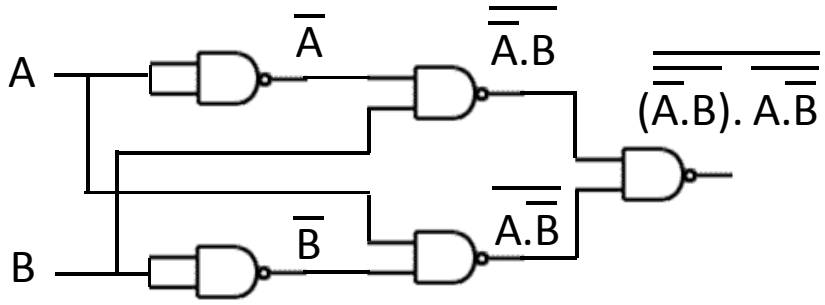
Construir un AND con NAND



$$F = A \cdot B = \overline{\overline{A \cdot B}}$$

4

Construir un XOR con NAND



$$F = A \oplus B = \overline{A}.B + A.\overline{B} = \overline{(\overline{A}.B) + (A.\overline{B})} = \overline{(\overline{A}.B)\ .\ (A.\overline{B})}$$

5

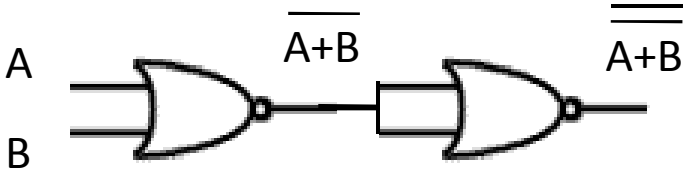
Construir un NOT con N0R

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

6

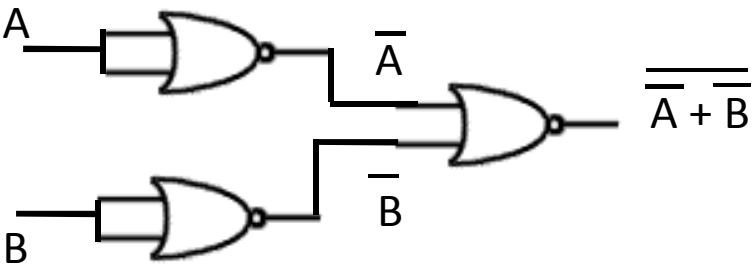
Construir un OR con NOR

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



7

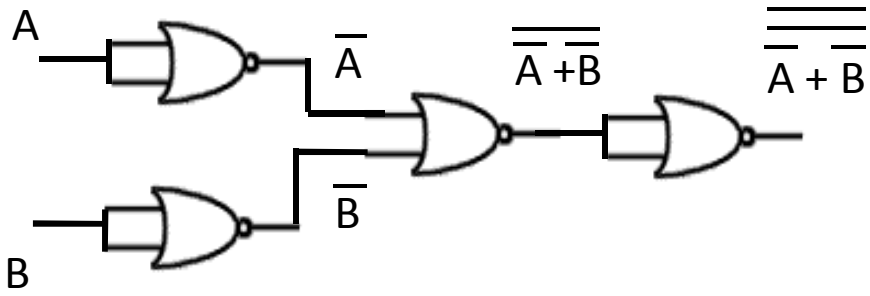
Construir un AND con NOR



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

8

Construir un NAND con NOR



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

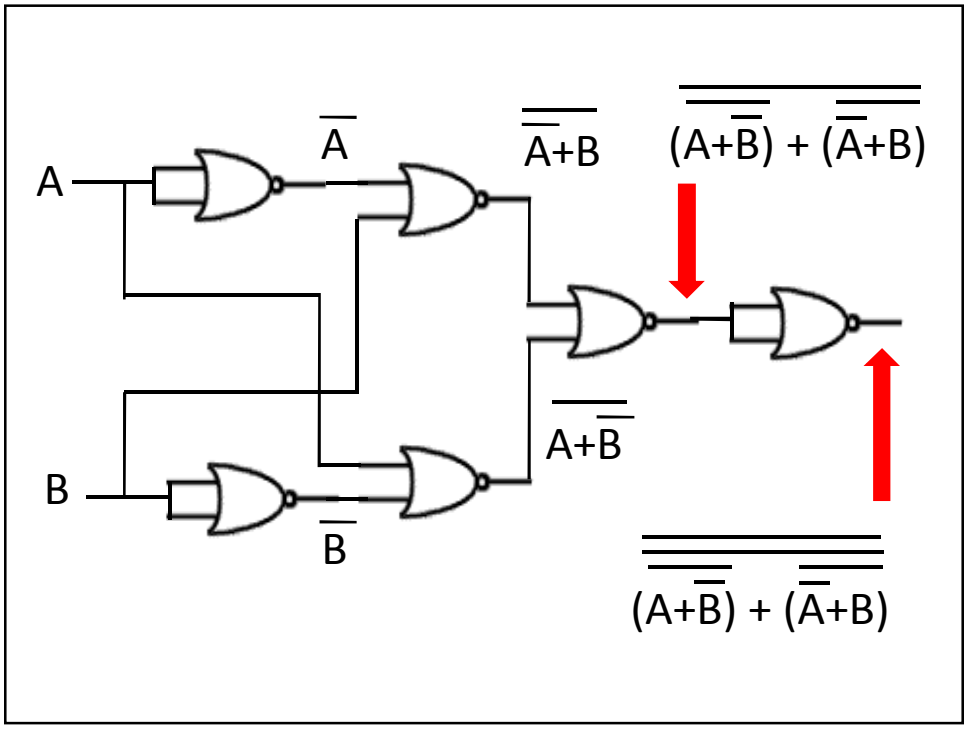
9

Construir un XOR con NOR

$$F = A \oplus B = \overline{A}.B + A.\overline{B} = \overline{(\overline{A}.B)} + \overline{(A.\overline{B})} =$$

$$\overline{(\overline{A}+B)} + \overline{(A+\overline{B})} = \overline{(A+\overline{B})} + \overline{(\overline{A}+B)} =$$

$$= \overline{\overline{(A+\overline{B})} + \overline{(\overline{A}+B)}}$$


A
B
$\overline{A}$
$\overline{B}$
$\overline{\overline{A}+B}$
$\overline{A+\overline{B}}$
$\overline{\overline{(A+\overline{B})} + \overline{(\overline{A}+B)}}$
$(A+\overline{B}) + (\overline{A}+B)$