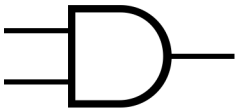
## AND

Any low in = Low out

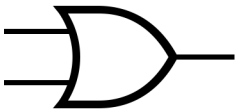


$A \cdot B$

| Input | | Output |
|---|---|---|
| B | A | A AND B |
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

## OR

Any high in = High out

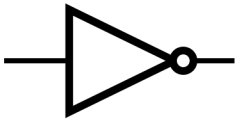


$A + B$

| Input | | Output |
|---|---|---|
| B | A | A OR B |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

## NOT

Input is inverted

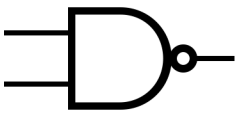


$\overline{A}$

| Input | Output |
|---|---|
| A | NOT A |
| 0 | 1 |
| 1 | 0 |

## NAND

Any low in = High out

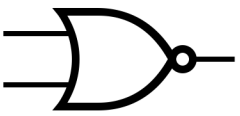


$\overline{A \cdot B}$

| Input | | Output |
|---|---|---|
| B | A | A NAND B |
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

## NOR

Any high in = Low out

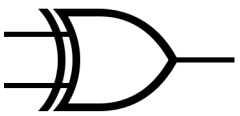


$\overline{A + B}$

| Input | | Output |
|---|---|---|
| B | A | A NOR B |
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

## XOR

Odd count of highs = High

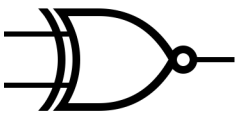


$A \oplus B$

| Input | | Output |
|---|---|---|
| B | A | A XOR B |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

## XNOR

Even count of highs = high

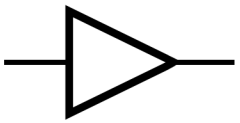


$\overline{A \oplus B}$

| Input | | Output |
|---|---|---|
| B | A | A XNOR B |
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

## YES

Input = Output



$A$

| Input | Output |
|---|---|
| A | A |
| 0 | 0 |
| 1 | 1 |