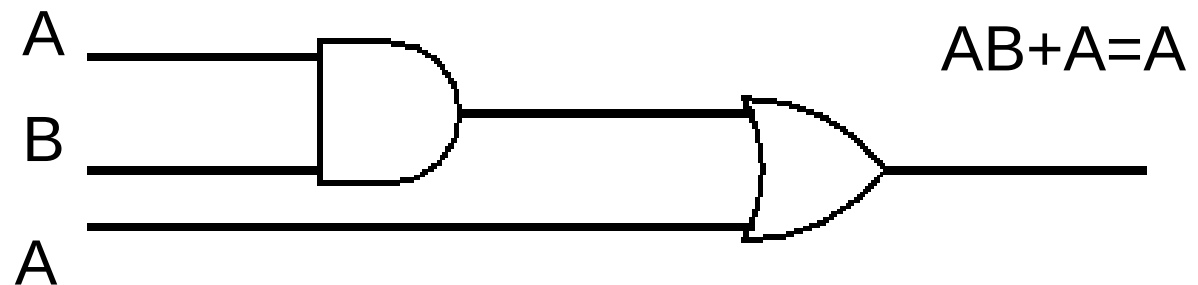
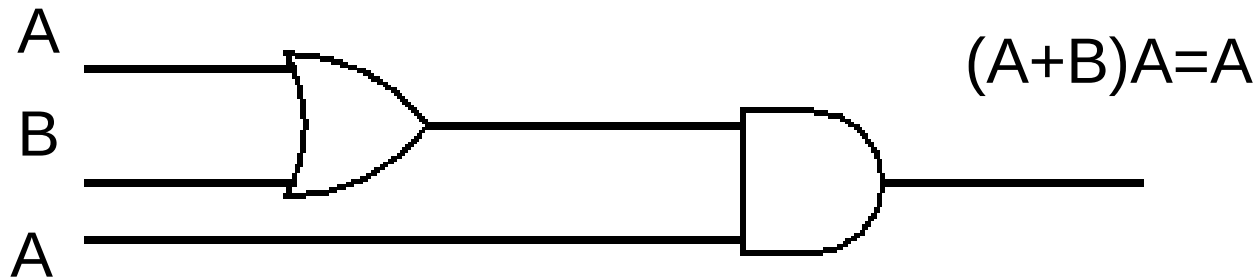


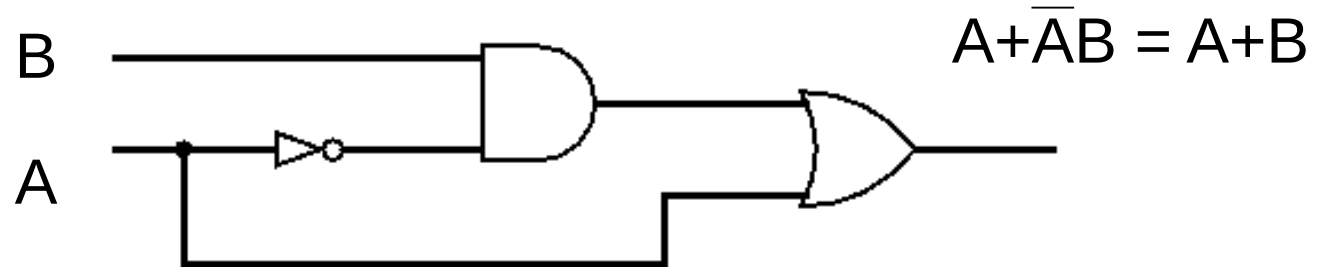
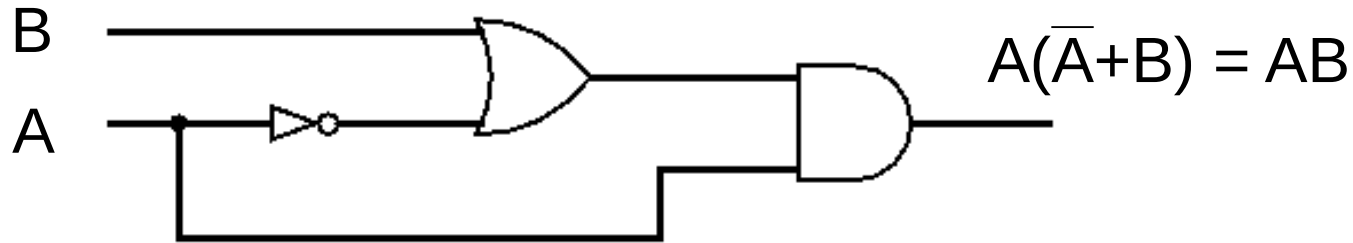
# Absorption Theorems – AND – OR – NOT

Variables can appear more than once in a Boolean algebra expression...we use the absorption theorems to simplify them



Truth table for this theorem??

# Absorption Theorems – AND – OR – NOT



Truth table for this theorem??

# Absorption Theorems – AND – OR – NOT

In both of these examples, rewriting the expression on the left using the distributive property

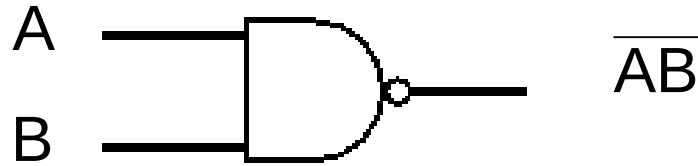
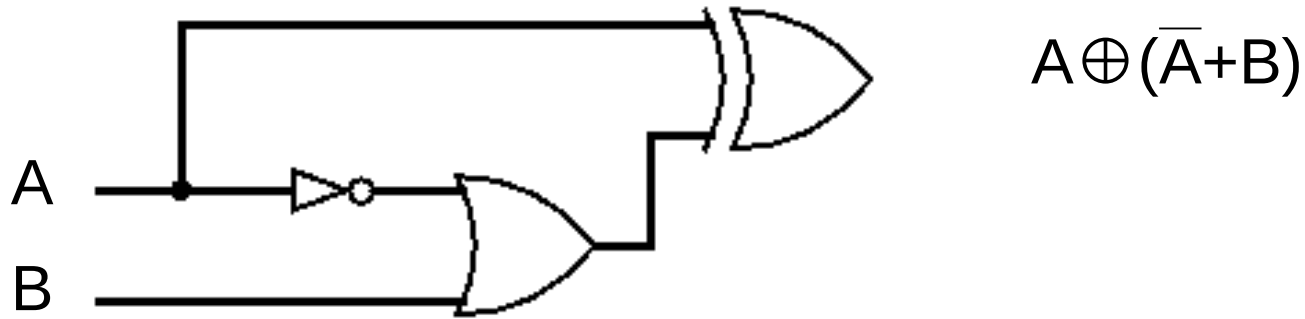
$$A+BC = (A+B)(A+C)$$

allows for the transformation (absorption) to occur

$$\begin{aligned} A+\overline{A}B &= (A+\overline{A})(A+B) \\ &= (1)(A+B) \\ &= A+B \end{aligned}$$

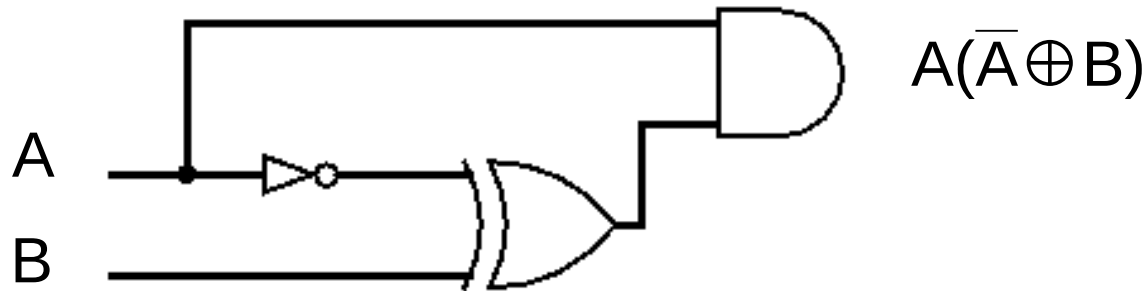
$$\begin{aligned} \overline{A}+AB &= (\overline{A}+A)(\overline{A}+B) \\ &= (1)(\overline{A}+B) \\ &= \overline{A}+B \end{aligned}$$

# Absorption Theorems – XOR – XNOR



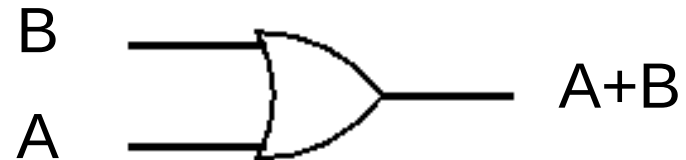
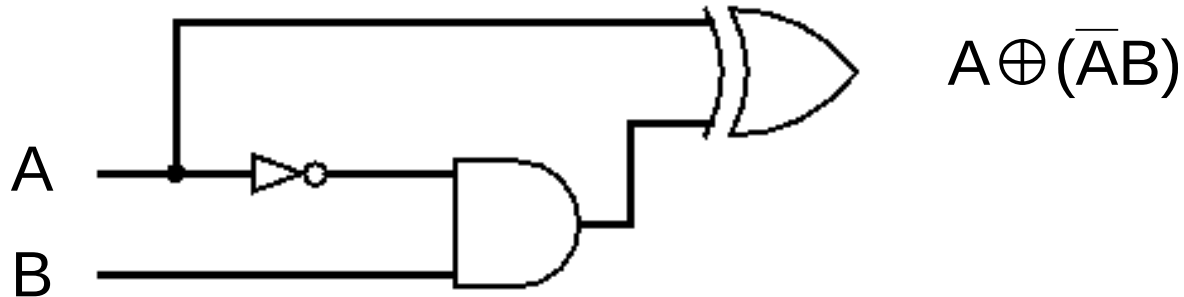
Truth table for this theorem??

# Absorption Theorems – XOR – XNOR



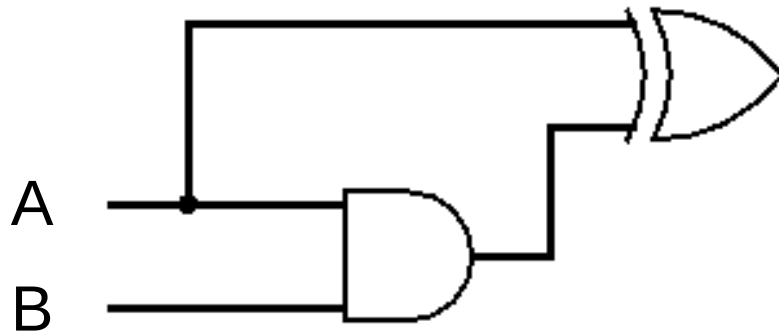
Truth table for this theorem??

# Absorption Theorems – XOR – XNOR

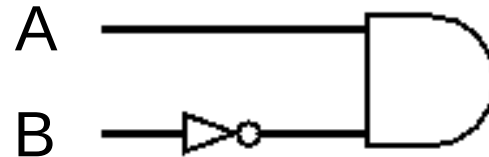


Truth table for this theorem??

# Absorption Theorems – XOR – XNOR



$$A \oplus (AB)$$



$$A \bar{B}$$

Truth table for this theorem??