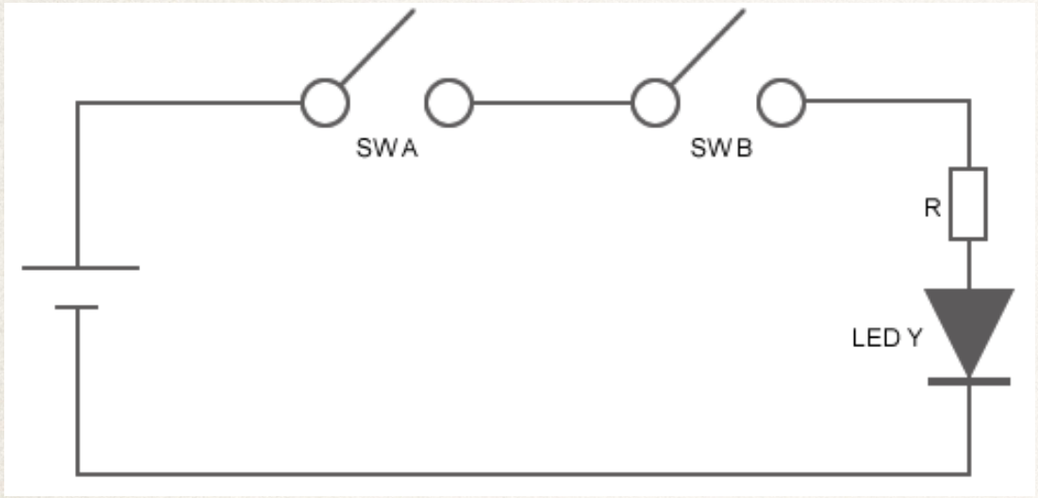
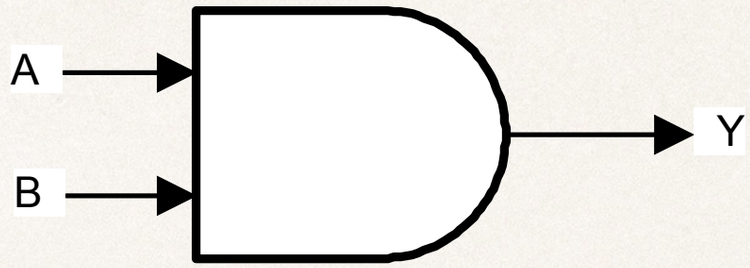
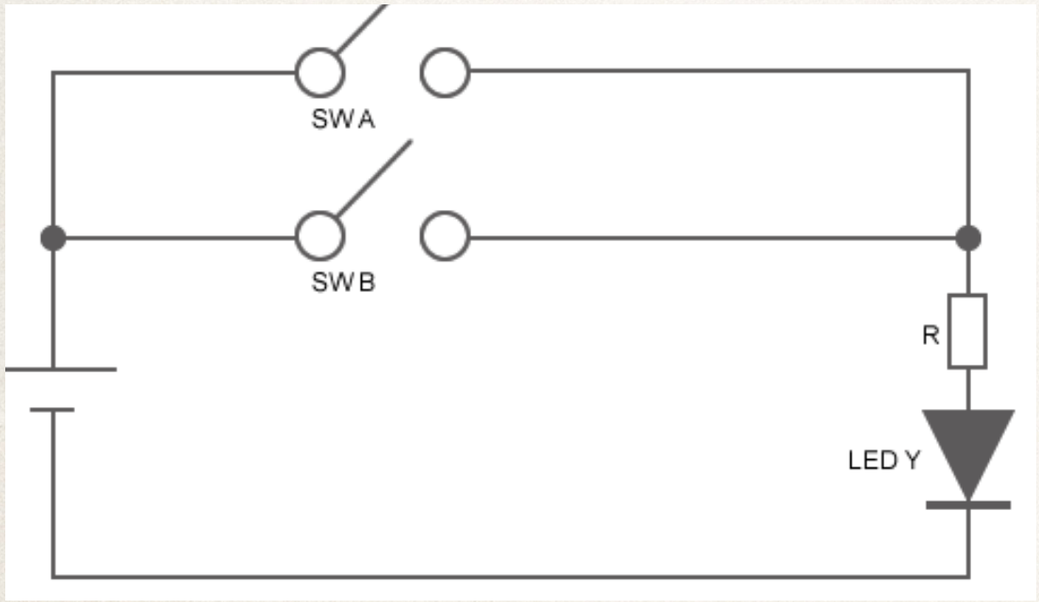
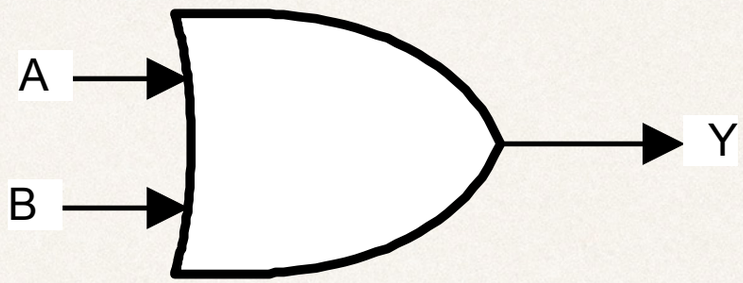
Logic Gates



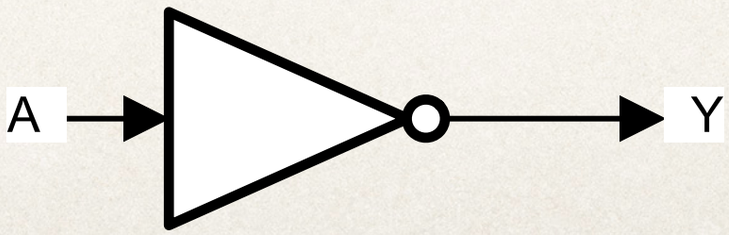


AND gate





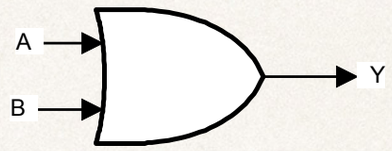
OR gate



NOT gate

Logic Circuits and Formulas

AND



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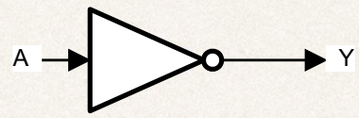
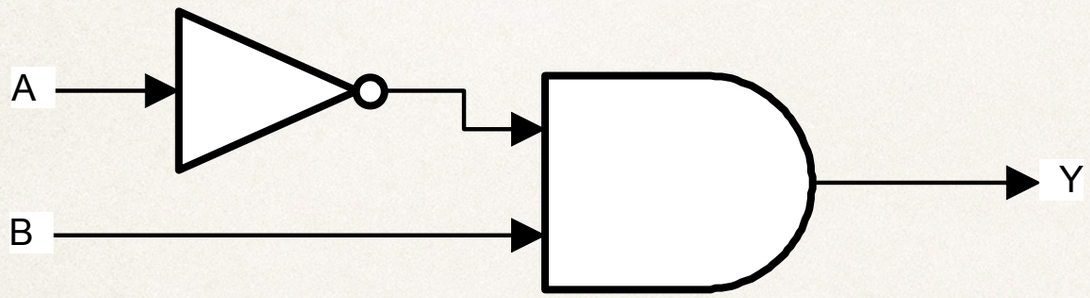
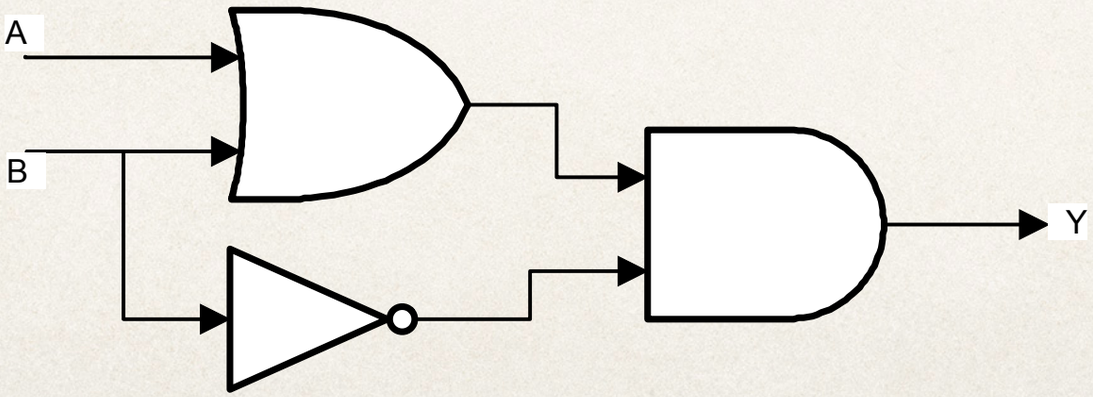


NOT

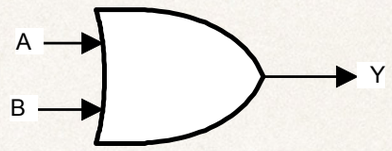


$(\neg A) \wedge B$



Logic Circuits and Formulas

AND



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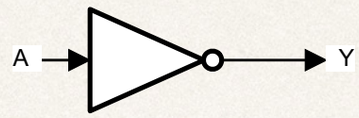
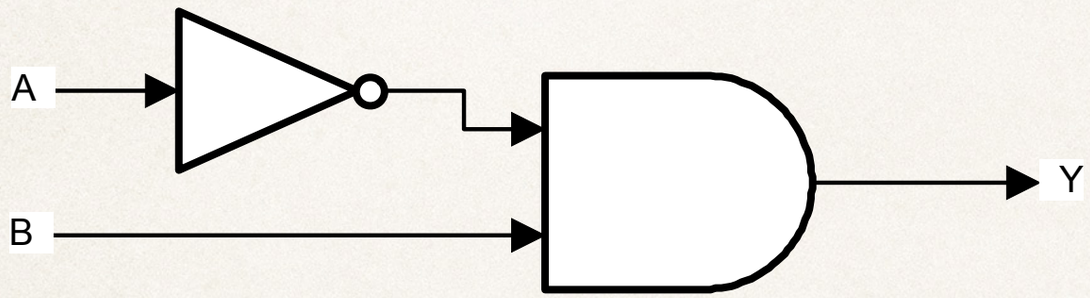
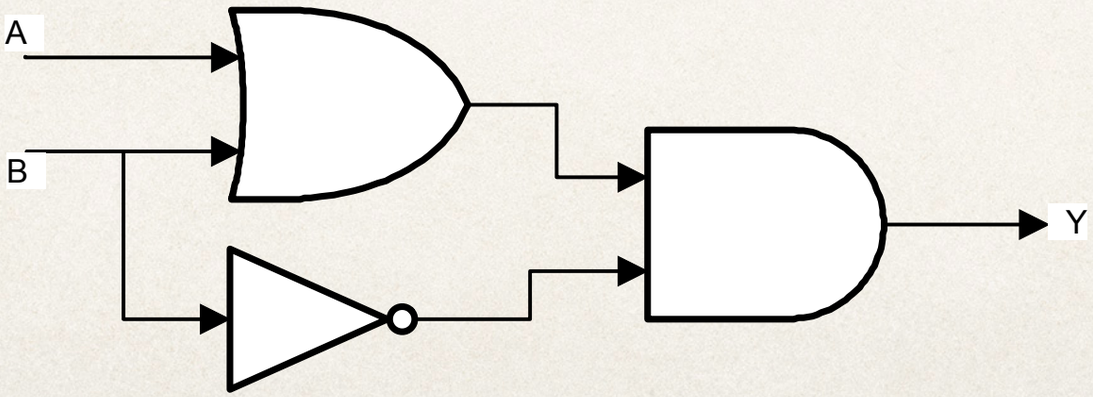


NOT

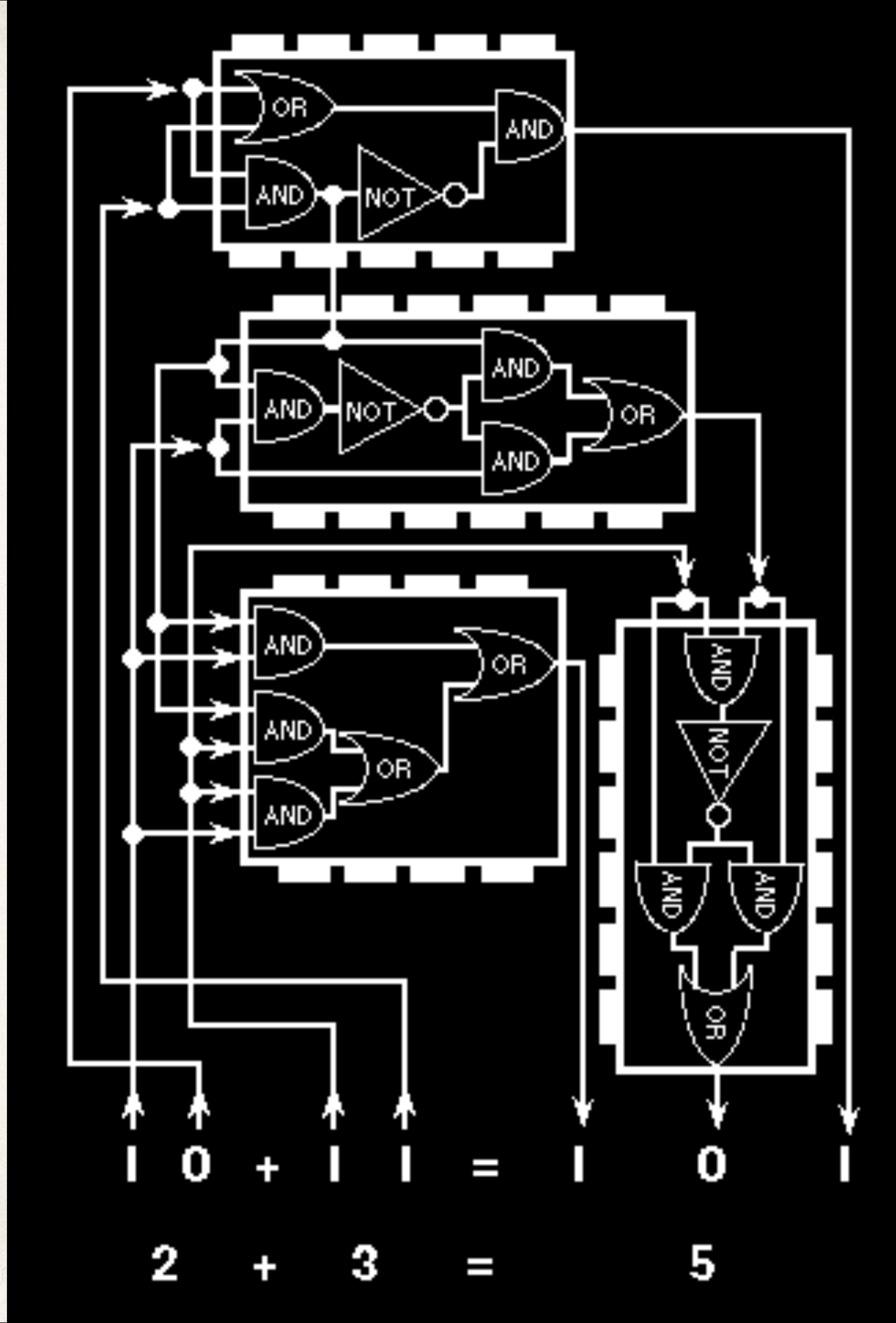


$(\neg A) \wedge B$



$(A \vee B) \wedge (\neg B)$

Adding 2+3


OR
AND
AND
NOT
AND
AND
NOT
OR
AND
AND
OR
AND
OR
AND
AND
NOT
AND
AND
OR
I 0 + I I = I 0 I
2 + 3 = 5

Two Standpoints: Language and Circuits

You can regard formulas as **statements capable of being true or false**, e.g. statements about how things are, who is guilty or innocent, etc.

You can also regard formulas as representing **circuits with inputs and outputs.** The inputs are the values (0 or 1) of the atomic formulas and the output is the value (0 or 1) of the complex formula.