

AQA Computer Science A Level

4.6.4 Logic gates

Flashcards

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What name is given to a collection of connected logic gates?



What name is given to a collection of connected logic gates?

Logic circuit



How many outputs to logic gates have?



How many outputs to logic gates have?

1



What are the two inputs of an edge-triggered D-type flip-flop?



What are the two inputs of an edge-triggered D-type flip-flop?

1. Data
2. Clock signal



Which logic gate is represented by this symbol?



Which logic gate is represented by this symbol? 

NAND




Which logic gate does this truth table represent?

A	B	Q
0	0	0
0	1	1
1	0	1
1	1	1



Which logic gate does this truth table represent?

A	B	Q
0	0	0
0	1	1
1	0	1
1	1	1

OR 



What mathematical operation
does AND perform?



What mathematical operation does AND perform?

Multiplication



Which logic gate is represented by this symbol?



Which logic gate is represented by this symbol? 

OR



What mathematical operation
does OR perform?



What mathematical operation does AND perform?

Addition

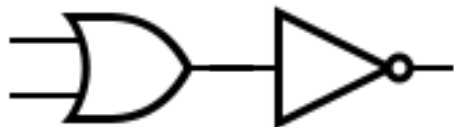


Which two logic gates can be combined to form this logic gate?



Which two logic gates can be combined to form this logic gate? 

NOT and OR



Which logic gate only outputs FALSE
when both inputs are FALSE?



Which logic gate only outputs FALSE when both inputs are FALSE?

OR



Which logic gate is represented by the symbol \oplus ?



Which logic gate is represented by the symbol \oplus ?

XOR



What type of logic circuit can be used to store the value of a single bit?



What type of logic circuit can be used to store the value of a single bit?

Edge-triggered D-type flip-flop



Which logic gate outputs TRUE when strictly one input is TRUE?



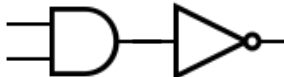
Which logic gate outputs TRUE when strictly one input is TRUE?

XOR



Which logic gate is the equivalent of this logic circuit?



Which logic gate is the equivalent of this logic circuit? 

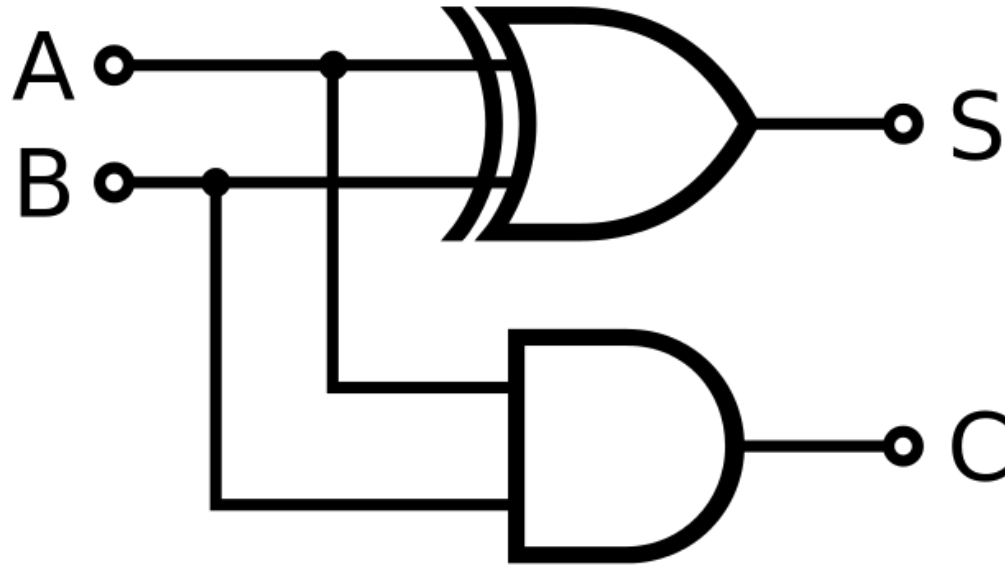
NAND



Draw the logic circuit for a half adder



Draw the logic circuit for a half adder



Which logic gate does this logical expression represent?

$$Q = \overline{A \times B}$$



Which logic gate does this logical expression represent? $Q = \overline{A \times B}$

NAND



Which two logic gates are used in a half adder?



Which two logic gates are used in a half adder?

XOR and AND



When is the value stored by an edge-triggered D-type flip-flop set?

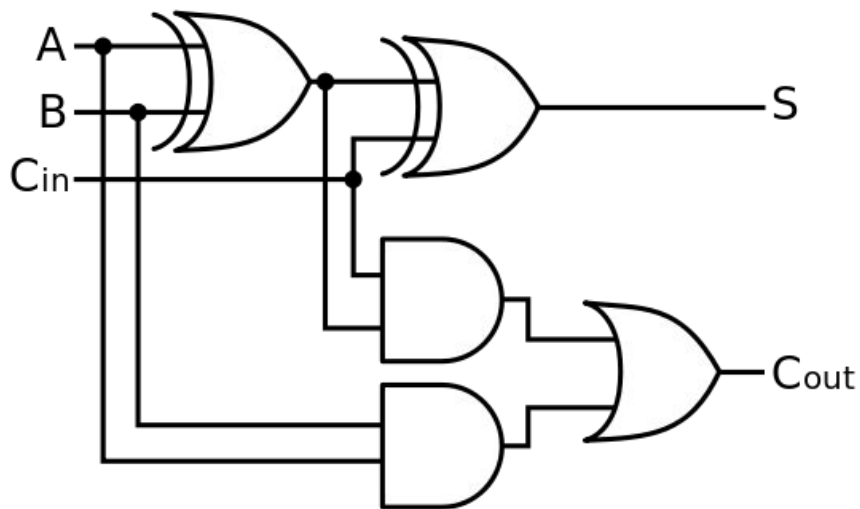


When is the value stored by an edge-triggered D-type flip-flop set?

When the clock signal changes



Which logic gate is represented by this logic circuit?



Which logic gate is represented by this logic circuit?

Full adder

