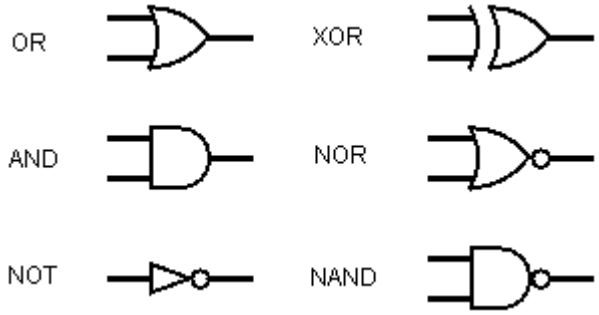
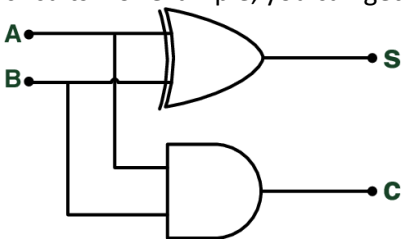
31 – Logic Gates

Thursday, January 10, 2019 9:10 AM

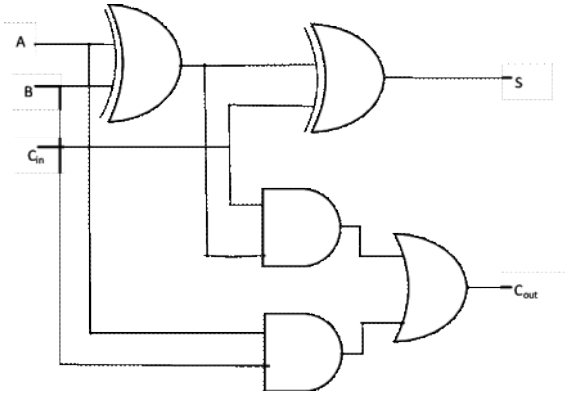
The symbols for the common logic gates are:



As has been seen at GCSE, these logic gates can be combined in different ways to form different circuits. For example, you can get a half adder:



And a full adder:



Where Cin is the carry in bit, Cout is the carry out bit, A is a bit from one of the numbers being added and C is a bit from the other number being added. S is the sum of the bits.

There are also Edge-triggered D-type flip flops. These are gate configurations that provide 1 bit of memory store. They are useful in computation as the result of the previous calculation can be stored and used as an input to the next calculation. The system clock signals when the flip-flop updates its state.