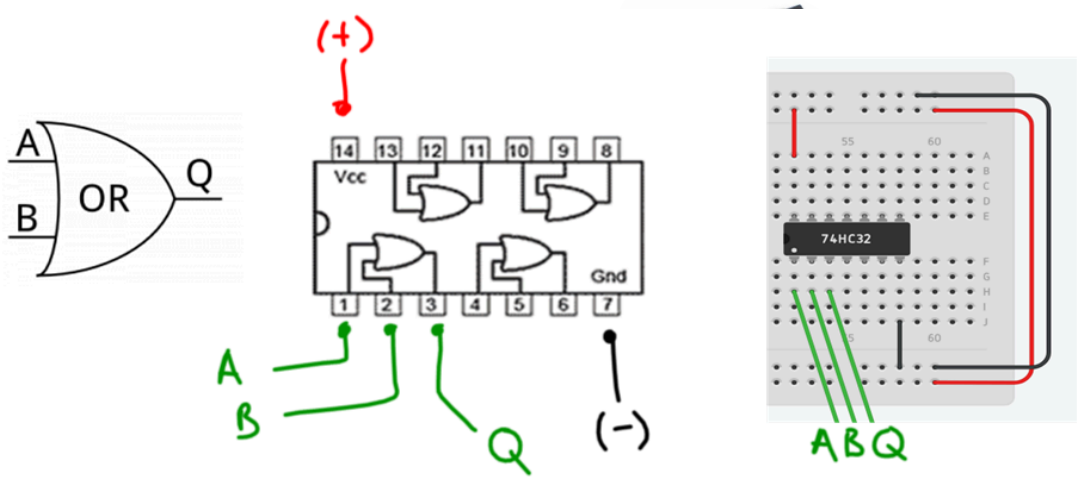
Wiring Logic Circuits with ICs

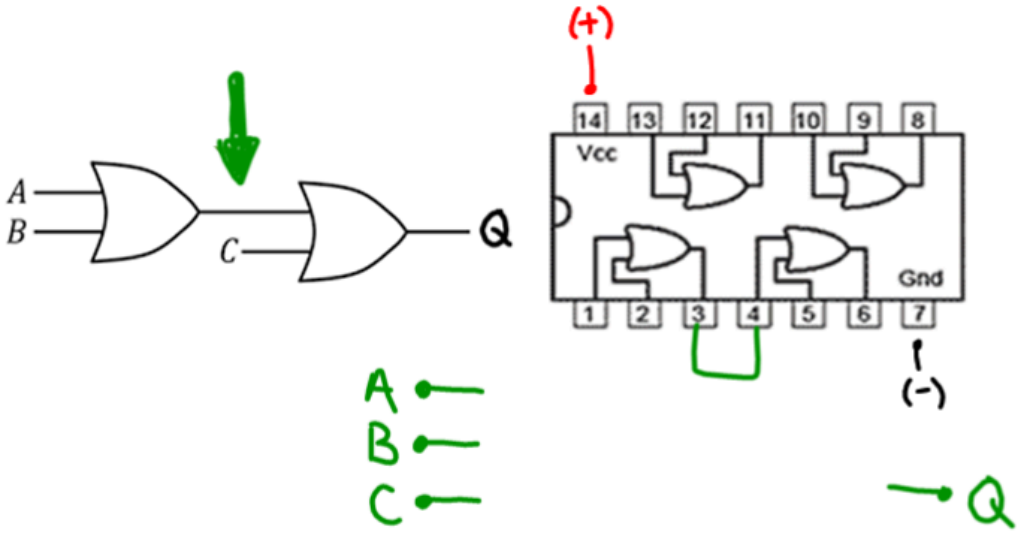


In order for integrated circuits to function correctly, they need to be supplied with 5 volts (or 3.3V depending on your chip, check with your instructor) at all times (even when inputs are set to 0/low/off). To do this, we always wire the VCC pin (usually pin 14) to the positive terminal power rail on a breadboard, and similarly wire the GND pin (usually pin 7) to the negative terminal power rail. Below is an example of how to wire up the logic diagram for a single OR gate, as illustrated below. It requires a total of 5 wires (2 for power, 2 for input and 1 for output)

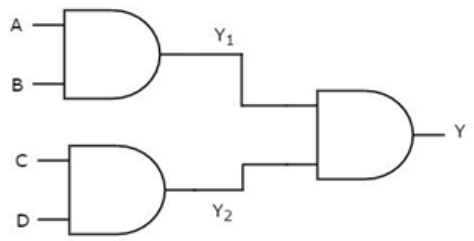


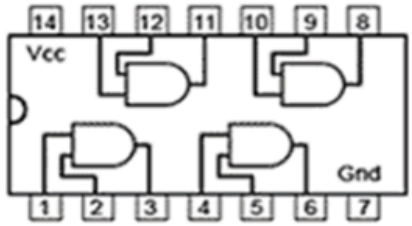
^ Shown on a breadboard. A and B would be wired to switches/inputs, whereas Q could be wired to an LED or other form of output.

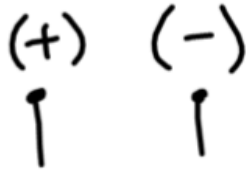
Connecting multiple gates together is possible by directly bridging one gate's output to another's input. The wire highlighted with the arrow is done for you in this next problem. Complete the rest of the circuit by drawing wires.



Practice problem #1 - Wire this circuit. Don't forget to provide power with the (+) and (-) terminals. Hint, you need a total of 9 wires drawn.









Practice Problem #2 - Wire this circuit. Both chips need to be wired to (+) and (-), two wires can be hooked up to the same origin. Hint: You need a total of 14 wires.

