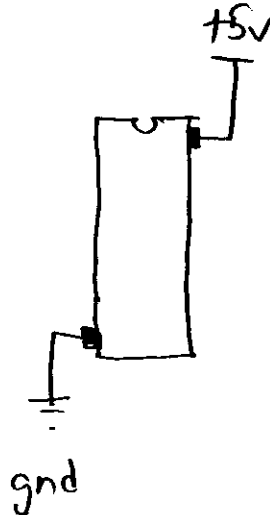


91.305 Mystery Chip Hints

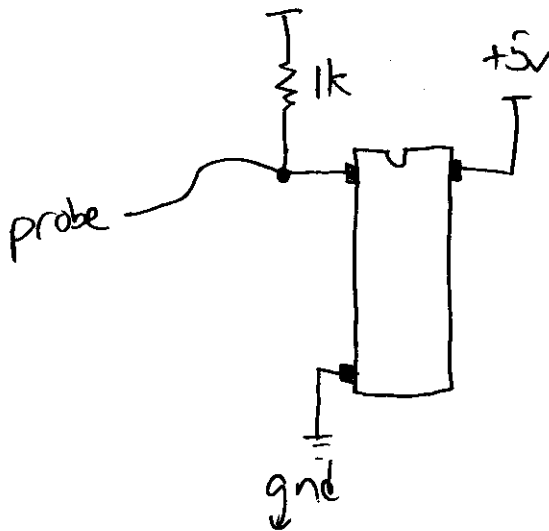
Based on the class discussion, here are hints for solving the mystery chip problems.

1. Wire up power and ground to the chip. If it's a 14-pin chip, assume pin 14 is power and pin 7 is ground. If it's a 16-pin chip, assume pin 16 is power and pin 8 is ground:

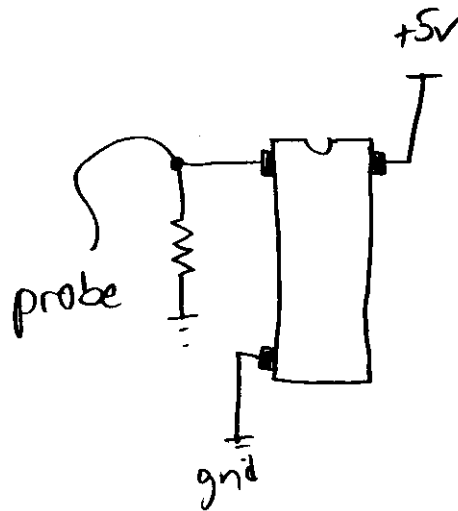


WIRE PWR AND GND

2. Using a 1K resistor, try to pull a pin up and see if it lets you. Try to pull the pin down and see if it lets you:



TRY TO PULL UP



TRY TO PULL DOWN

- If it lets you pull it up **and** lets you pull it down, it's either an input or a tri-stated output.
- If it fights you (pin stays high when you pull it low, **or** pin stays low when you pull it high, **or** can't get a reading at all) it's likely to be an output.

3. Do this for all pins.
4. Think. read over some data sheets.
5. Connect the inputs to switches and the outputs to LEDs on your UML305DEV board.

Try different combinations of switch inputs, look at the outputs, and see if you can figure out what's going on.

Caution:

The 16-pin chip has tri-stated outputs. This will be tricky! You won't see them do anything until the chip is enabled. There are three enable inputs. These are big hints!