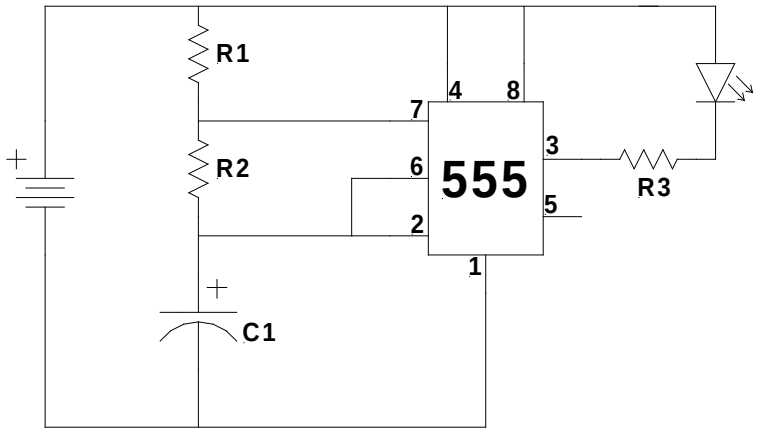
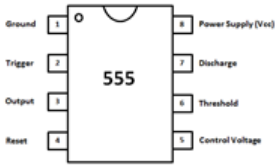
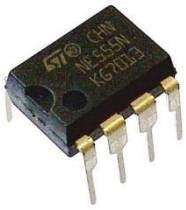
Breadboard Lab #9

"A blinking light using a 555 Integrated Circuit"

1) Breadboard the following schematic diagram. Set the Power Supply to 9 volts.







R1: 1K ohm
R2: 10K ohm
R3: 330 ohm
C1: 100uf

1) When you connect the circuit to power, the LED will blink. The blink occurs when the voltage at pin #3 alternates between 0 volts (low) and 9 volts (high). Changing the values of R1, R2 and C1 changes the frequency at which the LED blinks. Replace C1 with a 10uf capacitor. Replace R1 with a 100k resistor. Carefully watch what happens to the blinking. Use the Electronic Components PowerPoint presentation from class to help.

2) Answer the following questions

a) The output of this circuit (pin #3) produces a _____ and _____ voltage alternately that cause the LED to flash.

b) The frequency at which the LED blinks is controlled by _____, _____ and _____.

c) The larger the values of the resistors and capacitor, the _____ the frequency of pulses.

d) What happens if the value of R1 is bigger than R2?