CS 3651: Voltage Divider Lab

Name(s): _____

Learning Objectives:

1. Measuring resistance & voltage
2. Calculate values using Ohm's Law
3. Calculating power in watts
4. Develop familiarity with solder-less breadboards, Resistors, Batteries

Step 1: Using color bands, select two resistors that are of similar values, but are not identical (i.e. 10K and 15K, or 330 Ohm and 470 Ohm) Use your multimeter to measure the resistance of the two resistors determine their actual resistance values.

Color bands:	**1.** _____	**2.** _____
Rated Values:	**1.** _____	**2.** _____
Measured actual values:	**1.** _____	**2.** _____

Step 2: Build a voltage divider using your two resistors. (Use R1 from Vcc to the middle, and R2 between the middle and ground).

Step3: Calculate the number of watts that will be dissipated as heat from your resistors. Verify that it is well under 0.25 (if you have 1/4 watt resistors) or 0.125 (if you have 1/8 watt resistors). Use the voltage level of your power supply measured under no load. Show your work:

Power Dissipation: _____ watts

If your calculated power dissipation is less than the rating of your resistors, power the voltage divider using your low voltage DC power source (Battery, Transformer, etc...). Measure your power source's actual voltage when under load (using your voltage divider as the load).

Actual Voltage: _____

Step 3: Calculate the voltage difference between ground and the middle of your voltage divider.\Show your work:

Calculated Voltage at middle: _____

Step 4 : Measure the actual voltage between the middle of your voltage divider and ground.

Actual voltage at middle: _____

If these two numbers are not very close, explain why you believe they are different: