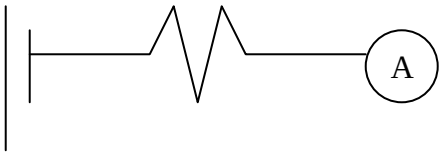
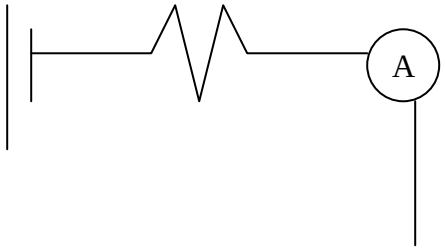
Phys Sc 416/30 **Name_____**
Ohm's Law Lab Revised 2006 **Resistant Partner_____**

1. Attach one end of one of the *resistors* (a resistor looks like this: ) to the (-) end of the power supply using a wire.

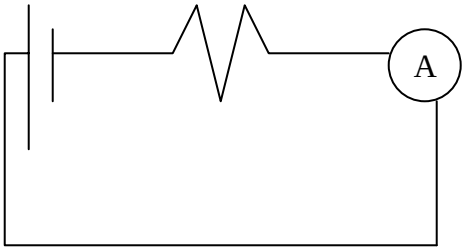
2. Using another wire, attach the other end of the resistor to the (-) end of the ammeter. The ammeter is the one with "A".





3. Connect a third a wire to the ammeter's red button that reads **5 A**. (This is an important step. Attaching it elsewhere could damage the instrument.)

4. Attach the other end of this third wire to the (+) end of the power supply.



5. Set the power supply to 1.0 V. Record your value in the table below:

Voltage (V)	1.0	2.0	3.0	5.0
Current Intensity(A)				

6. Read the ammeter. If the current is too weak, connect the wire to the 500mA setting. Now reread the meter using the *top* set of numbers on the display screen of the ammeter. When you record your answer, ***divide by 1000*** to convert mA to A. If the current is still too weak, connect the wire to the 50mA setting. . Now reread the meter using the *middle* set of

numbers on the display screen of the ammeter. When you record your answer, still ***divide by 1000*** to convert mA to A.

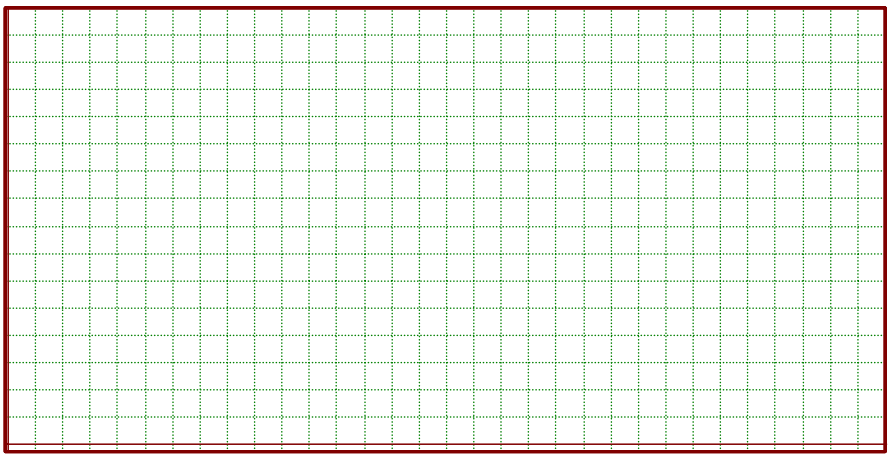
7. Reconnect the wire to the 5A button of the ammeter, and increase the voltage to 2.0 V. Read the ammeter again and record your values in the table. Repeat this step until you fill the table.

IMPORTANT

When drawing a straight line, do not play "connect the dots" !
Use a ruler and make 1 line even though it does not go through all points. Just try to have 1 point above the line for every point that's below the line.

8. Graph I (y axis) versus V (x axis)

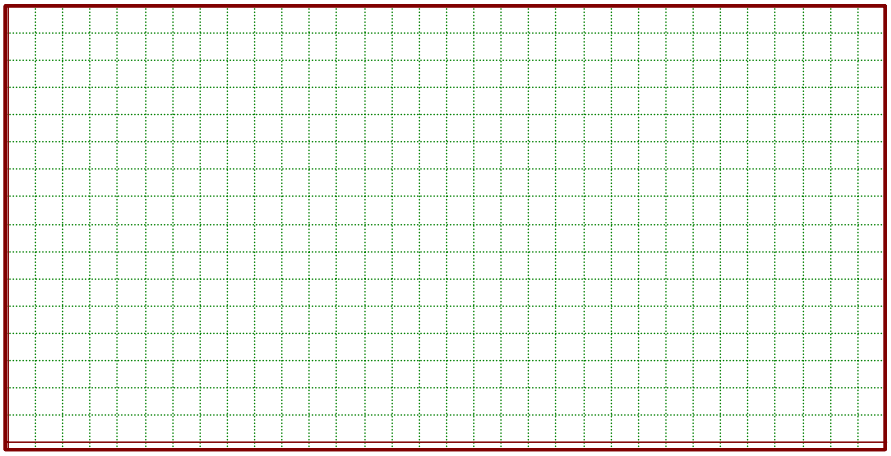
I (A)



Volts

9. Repeat steps 1→ 8, using the other resistor. Fill the table and graph.

Voltage (V)				
Current Intensity(A)				



10. For each graph find the rate. You will be calculating conductance and not resistance because of the way I asked you to set up the graph.(show work)

a. Slope of graph #**8** = $\frac{\Delta y}{\Delta x}$ = conductance(G) of first resistor =_____S.

(show work)

b. Slope of graph #**9** = $\frac{\Delta y}{\Delta x}$ = conductance(G) of second resistor = _____ S.

(show work)

11. Now convert each conductance into a resistance in Ω.

a. Resistance of first resistor = 1/G = _____Ω.
b. Resistance of second resistor =1/G = _____ Ω.

12. What do you think the purpose of the lab was?

Purpose:

Conclusion: