Name _____ Date _____
SI Physics Lab #31 (40 pts)
Period _____ Mrs. Nadworny

Partners: Due Date _____

Simple Circuit

NO Lab Write-Up Required

Materials

- 100 Ω resistor
- battery pack
- several batteries
- ammeter
- voltmeter (multimeter)
- wires

Procedure

1. Build a simple electric circuit that can be used to measure the current through a resistor and the potential difference across the resistor.
2. Draw a circuit diagram for this circuit using appropriate symbols from the *Reference Tables* in the space below. (4 pts)

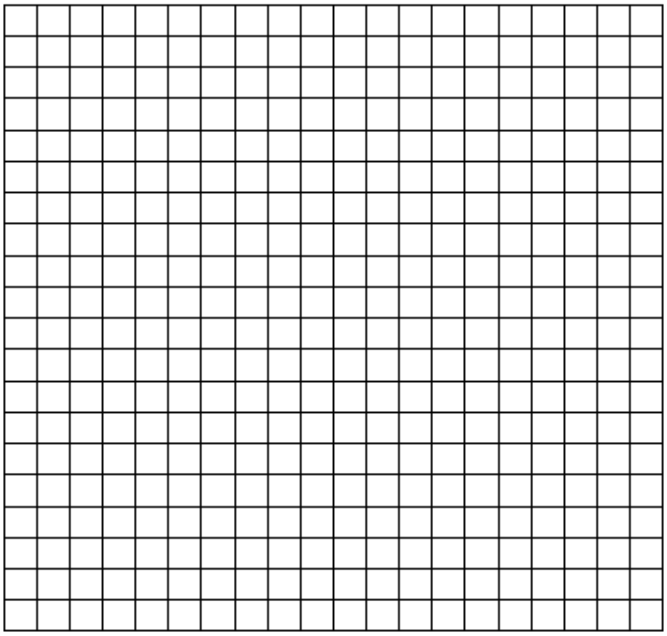
3. Build the circuit using one battery. Measure the potential difference and current. Have this checked by your teacher. Record your data in the table.
4. Increase the number of batteries and repeat step 3. Do this for several batteries.
5. Disconnect your circuit and put your equipment away when you have enough data.

(9 pts)

Trial			
	± _____	± _____	± _____
1			
2			
3			
4			
5			

Graph (11 pts)

- Create a graph of Current vs. Potential Difference.
  - Title your graph with an appropriate title.
  - Label each axis with the appropriate variable and unit.
  - Mark an appropriate scale according to your data.
  - Plot each data point.
  - Draw a best fit line. (Equal number of points above and below line)



Data Analysis

1. Calculate the slope of your best fit line. Show all calculations with equation, substitution with units, and answer in decimal format with units. (4 pts)

2. Determine the physics formula that relates to the variables that you graphed. (2 pts)

3. What physical quantity is represented by the slope of the graph? (2 pts)

4. Calculate resistance of your resistor using your slope. Show all calculations with equation, substitution with units, and answer with units. (4 pts)

5. Calculate a percent error between your value of resistance and the accepted value. Show all calculations with equation, substitution with units, and answer with units. (4 pts)