P2.W1 – DC Circuits

Main concepts: electric potential, current, resistance, Ohm's law
Serway Text: Ch. 25, 27, 28

Concepts
1) Using the figure below, determine the equivalent resistance, \( R_{eq} \), and the uncertainty in \( R_{eq} \), \( \Delta R_{eq} \).

2) What is the equation for a weighted average? When should this equation be used instead of regular averaging? What is the uncertainty of the weighted average?

Equipment
3) You will use a multimeter as an ammeter, voltmeter, and ohmmeter. What will we measure with each of these? How do you connect a voltmeter to your circuit? How do you connect an ammeter?

4) What is the value of uncertainty for a measurement taken with the multimeter?

5) What is the purpose of connecting a charged object to “ground”?

Calculations
6) The color bands of a given resistor are: blue, brown, orange, and gold. Determine the resistance using Table 2.1 in your manual.