Voltage Divider Quick Sheet

Print Last Name _____Giftakis_____ Print First Name _Benjamin_____

Section____ Date_____ TA_____

Lab Partner_____

Measured Voltages for **Part 1**.

V_{in} = _12 V_____

Slope from Excel graph and calculated value of pencil resistance

Slope = _0.040084_____ $R_2 \pm S_{R2}$ = _24.94734 ohms_   % error =_____

Measured Voltages for **Part 2**.

Voltage drop across R_2 and wire. V_{in} = _12 V_____

Voltage drop across wire. V_{wire} = _.042 V_____

Calculated V_2 = _11.958 V___ $V_2 = V_{in} - V_{wire}$

Calculate Current I in the circuit using V_2 and R_2. Use R_2 measured from part (1) above.

I = _0.01214 amps_____

Diameter D and Cross-sectional area A of the wire.

D = 0.63 mm A = _3.12*10^-7 m^2_____

Slope from Excel graph and calculated resistivity of the wire

Slope = _3.39_____ $\rho \pm S_\rho$ = _1.06+-0.02 microohms*m_ (This should be a positive number.)

Percent error to the accepted value of ρ = 1.08 $\mu\Omega$m.

% error = _2.26%_____

Resistance of wire using Ohm's Law ($R_{3, wire, Ohm} = V_{wire}/I$).

$R_{3, wire, Ohm}$ = _3.46 ohms_____

Calculated value of resistance of the wire, $R_{3,wire}$, using length L = 1.00 meter, and the above values of A and ρ (parts 6 and 7). Calculate the percent error using the above measured value of $R_{3, wire, Ohm}$ as the accepted value.

Calculated $R_{3,wire, \rho}$ = _3.39 ohms_____   % error = _2.12%_____