Kirchhoff's Laws in Series and Parallel Circuits
Pre-lab Exercise (10 Points)

Print Name _____

Lab Section _____ Date_____TA_____

Always remember to show your work! Staple your work sheet to this pre-lab test if used. Treat these like textbook problems and follow the rules of significant figures.

(1) Three resistors, 3.30 kΩ, 1.05 kΩ and 0.47 kΩ are connected in series. Calculate the equivalent series resistance R_s. (Note: 1 kΩ = 1000Ω)

R_s = _____

(2) Three resistors, 3.30 kΩ, 1.05 kΩ and .47 kΩ are connected in parallel. Calculate the equivalent parallel resistance R_p.

R_p = _____

(3) Three resistors, 2.00 kΩ, 2.50 kΩ and 3.00 kΩ, are connected in series. A power supply is connected in the circuit, and applies a voltage of 10.00 V across all three. Calculate the current in the circuit. Enter results in terms of milliamps (mA), where 1 mA = 0.001 A.

I = _____

(4) Calculate the voltage drop across the 3.00 kΩ resistor in question 3 above.

V = _____

(5) 10.00 volts EMF is applied across three resistors in series, and a current of 1.00 mA is recorded by the current meter in the circuit. A voltage of 4.50 V is measured across the first resistor R_1, and a voltage of 2.20 V is measured across the second resistor R_2. Find the resistance of the third resistor R_3.

R_3 = _____