

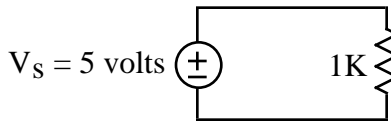
ECE 109L - THE VERY BASICS - LAB 5 ONE RESISTOR CIRCUITS

SUMMER 2007

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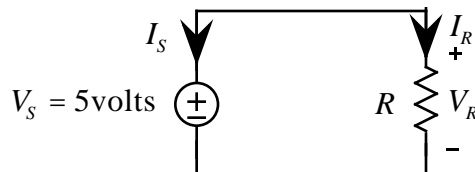
OBJECTIVE

The objective of this lab is to calculate and measure the voltages and currents in circuits with one source and one resistor like the following



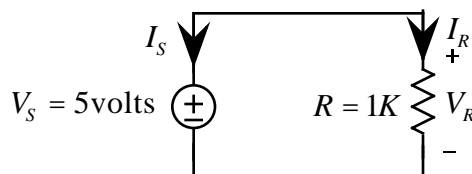
LAB

1. Given the following circuit with one source and one resistor



PARTNER 1: R = 1K PARTNER 2: R = 2K

Be sure to put the value of your R on your circuit diagram. In particular if you are Partner 1 you should draw your circuit as follows



Always do this for **all** resistors in **all** circuits in **all** labs.

- a. Measure your resistor. Compare with its nominal value to see if it's within tolerance. Be sure to use a Table like the following

RESISTOR	NOMINAL VALUE	MEASURED VALUE	% DIFFERENCE
R			

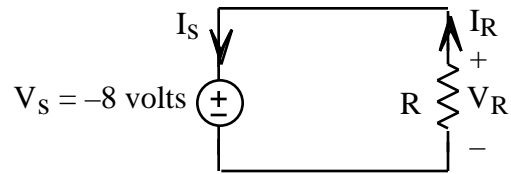
with a conclusion at the bottom that states whether the resistance is within tolerance.

- b. Measure V_R , I_R and I_S .
- c. **PreLab** - Calculate V_R , I_R and I_S for the circuit with your resistor. Note in particular that you can't calculate I_R until you find V_R
- d. Compare your measured and calculated values for V_R , I_R and I_S . Use a Table of the following form

VARIABLE	CALCULATED VALUE	MEASURED VALUE	% DIFFERENCE
V_R			
I_R			
I_S			

Be sure to state whether the percentage differences between the measured and calculated values are reasonably close. **Always** use a Table like this with a **conclusion** when you are asked to compare measured and calculated values.

2. Repeat Problem (1) - including the **PreLab** - for the following circuit



PARTNER 1: $R = 2K$ PARTNER 2: $R = 4.7K$