ECE 109L - THE VERY BASICS - LAB 6
POWER AND ENERGY

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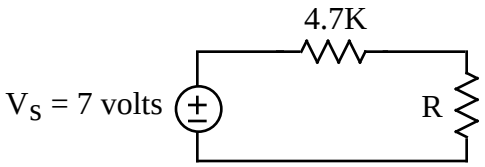
OBJECTIVE

The objective of this lab is to measure the voltages and currents in resistor circuits and then use the results to calculate the circuit's powers and energies.

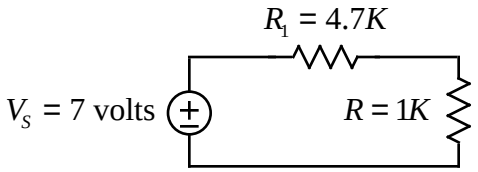
LAB

1. Given the following circuit



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

Be sure to give the 4.7K resistor a name and to give the value of your resistor R on your circuit diagram. In particular if you are Partner 1 you should draw



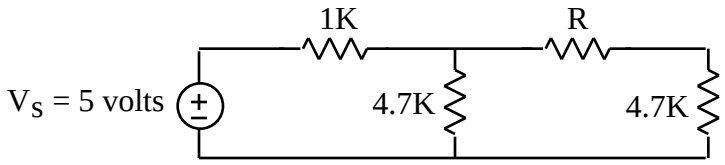
a. Measure your resistor values. Then, as always, compare their measured values with their nominal values in a Table as follows

RESISTOR	NOMINAL VALUE	MEASURED VALUE	% DIFFERENCE
R			
R_1			

Followed by a conclusion on whether or not the resistors are within tolerance.

b. Measure the voltage and current of each circuit element including the voltage source. Be sure to use associated reference directions
c. Make use of your measured values in part (b) to calculate each circuit element's power
d. Find the sum of the powers of all the circuit element - including the source.
e. What does your result tell you about the power transfer in the circuit

2. Repeat Problem (1) for the following circuit



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

Be sure to lay out the circuit on your breadboard exactly like the circuit diagram

3. What do we mean when we say a resistor is rated at 1/ 4 watt