

ECE 109L - SERIES AND PARALLEL CIRCUITS - LAB 10

SERIES RESISTOR CIRCUITS

FALL 2006

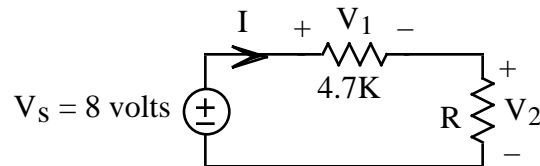
A.P. FELZER

OBJECTIVE

The objective of this lab is to verify the basic properties of series resistor circuits for some simple series circuits.

LAB

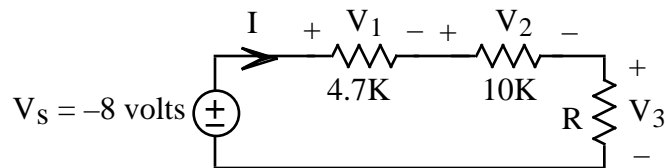
1. Given the following circuit



PARTNER 1: $R = 1K$ PARTNER 2: $R = 10K$

- Measure your resistor values. Compare with the nominal values
- Verify that the currents through all the series circuit elements are the same. Be sure to build the circuit on your breadboard so it looks **exactly like** the circuit diagram.
- PreLab** - Which resistor should have the largest magnitude voltage. Why
- Measure V_1 and V_2 . Was your conjecture in part (c) correct. If not, explain what is going on
- Make use of your results in part (d) to verify KVL
- Use your measured value of I to calculate V_1 and V_2
- Compare your calculated and measured results for V_1 and V_2

2. Repeat Problem (1) for the following circuit



PARTNER 1: $R = 4.7K$ PARTNER 2: $R = 10K$

3. **PreLab** - Use Mathcad to obtain a graph of

$$y = \frac{2x}{x + 1000}$$

for $0 \leq x \leq 3000$