

ECE 111 - Homework #8

ECE 211 Circuits I

$$V = IR, P = VI$$

1) A resistor has the following volts / amps / resistance / power. Determine the missing parameters:

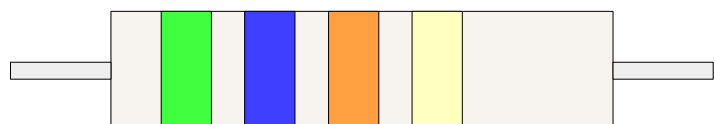
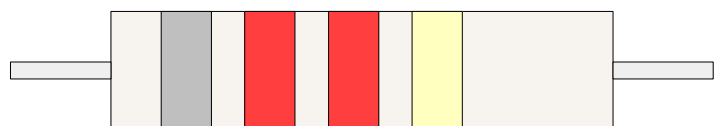
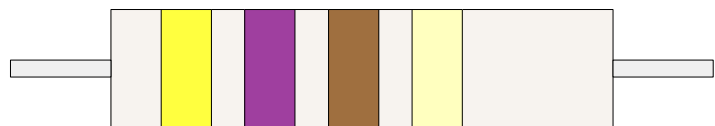
Volts (V)	Amps (I)	Ohms (R)	Watts (W)
12V		4 Ohms	
	2A	3 Ohms	
12V	3A		
		2 Ohms	30W

Resistor Color Codes

black	brown	red	orange	yellow	green	blue	violet	grey	white
0	1	2	3	4	5	6	7	8	9

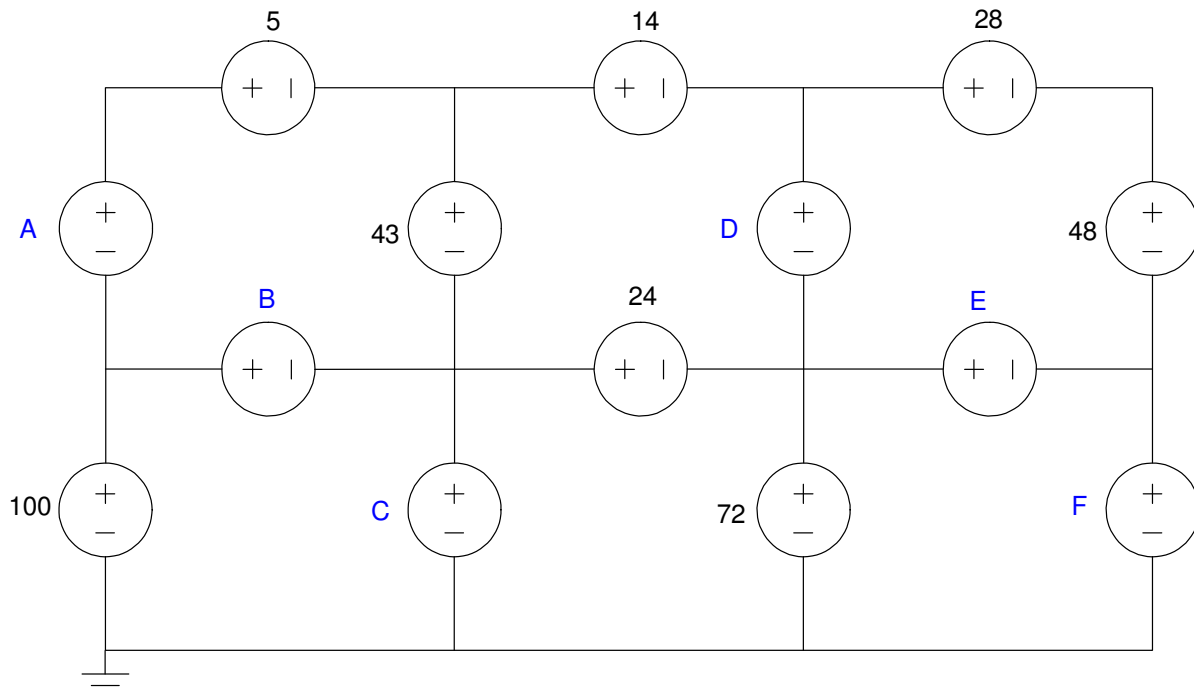
2) Determine the value of the following resistors

- a) Yellow - Violet - Brown
- b) Grey - Red - Red
- c) Green - Blue - Orange

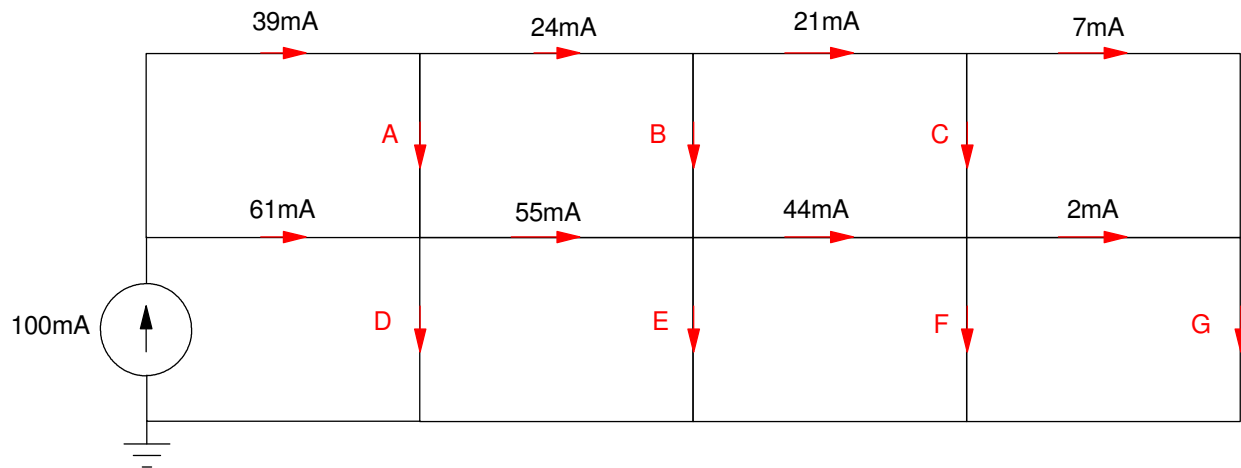


Kirchoff's Laws:

3) Use conservation of voltage to determine the unknown voltages



4) Use conservation of current to determine the unknown currents

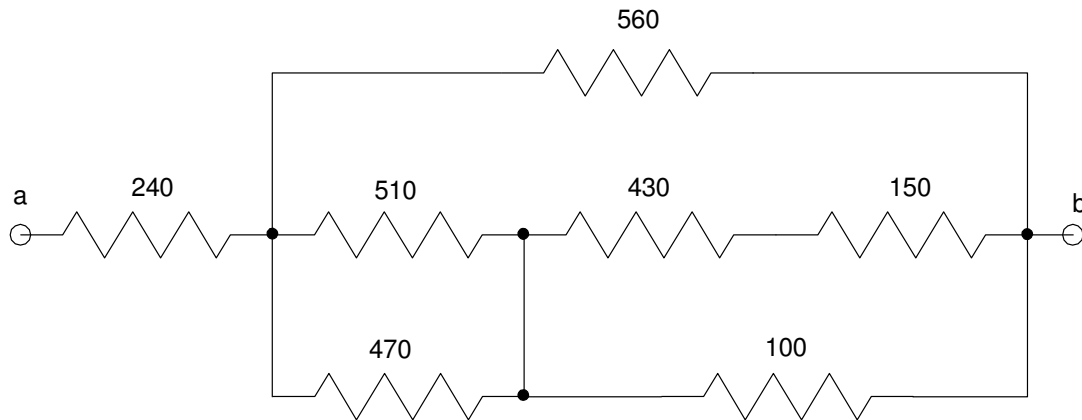


Resistors in Series and Parallel

5) Compute the total resistance R_{ab} by hand (i.e. using Matlab or a calculator)

6) Find the total resistance R_{ab} using CircuitLab

- Apply a 10V source to a and b.
- Determine the current draw from the 10V source
- Calculate the net resistance from $V = IR$

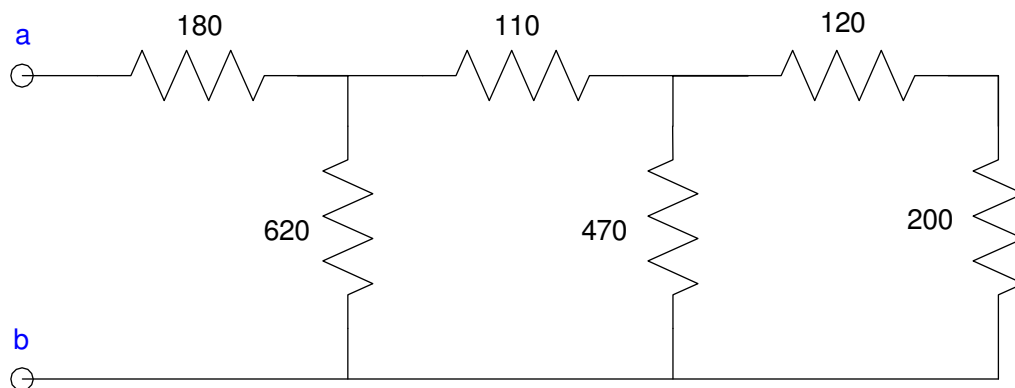


Problem 5 & 6

7) Compute the total resistance R_{ab} by hand (i.e. using Matlab or a calculator)

8) Find the total resistance, R_{ab} , using CircuitLab

- Apply a 10V source to a and b.
- Determine the current draw from the 10V source
- Calculate the net resistance from $V = IR$

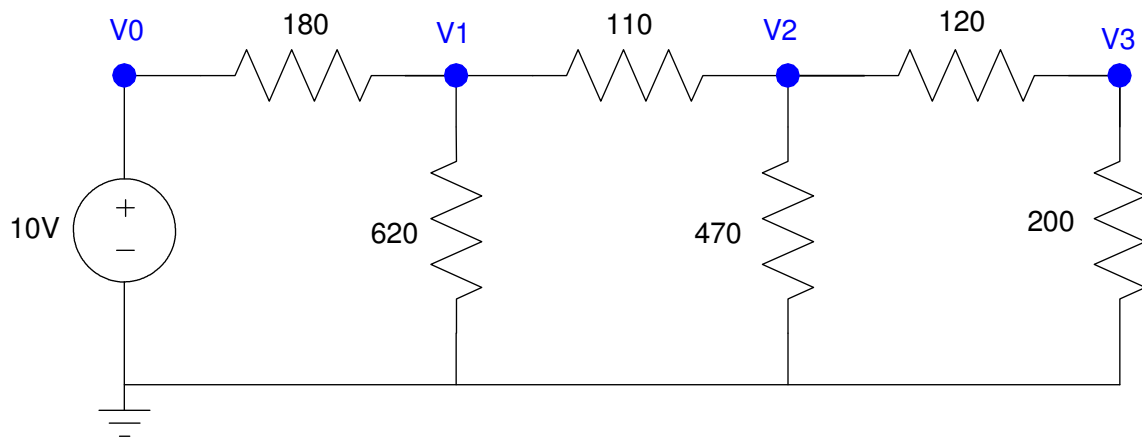


Problem 7 & 8

Voltage Division

9) Use voltage division to find V_1 , V_2 , and V_3 .

10) Use CircuitLab to find V_1 , V_2 , V_3 .



Problem 9 & 10