

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	Amps	Ohms	Watts
15V	3.0A		
15V		8	
	6.0A		120W
15V			60W

Resistor Color Codes

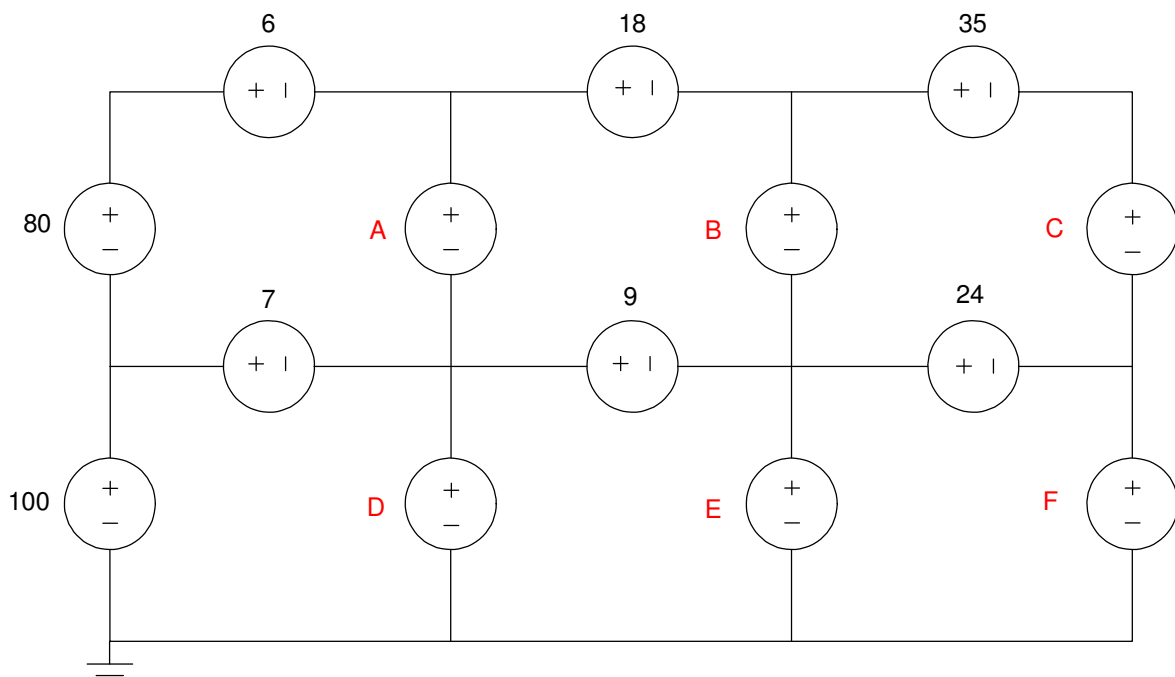
2) Determine the value of the following resistors

- a) Grey - Red - Yellow
- b) Orange - White - Red
- c) Blue- Black - Green

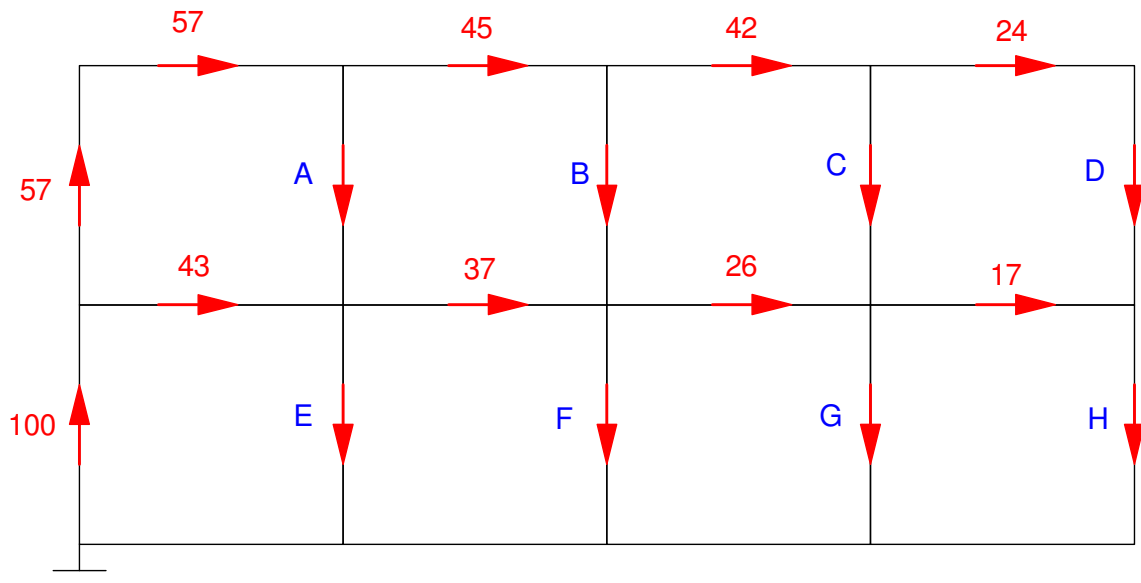


Kirchoff's Laws:

3) Use conservation of voltage to determine the unknown voltages



4) Use conservation of current to determine the unknown currents

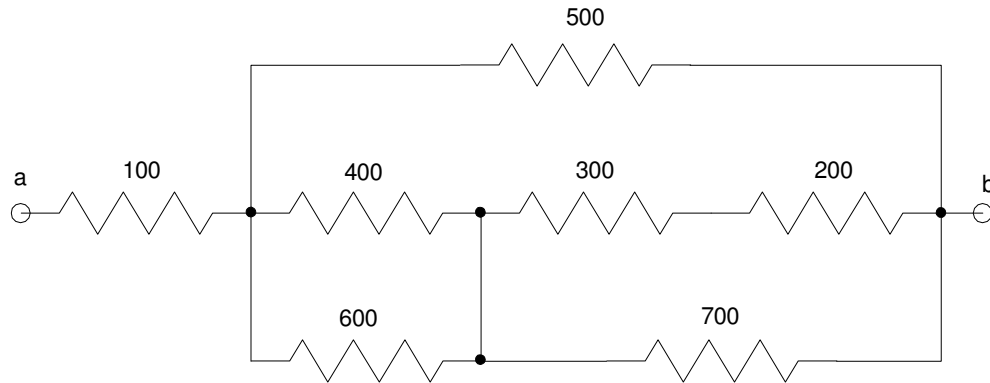


Resistors in Series and Parallel

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 $V = IR$

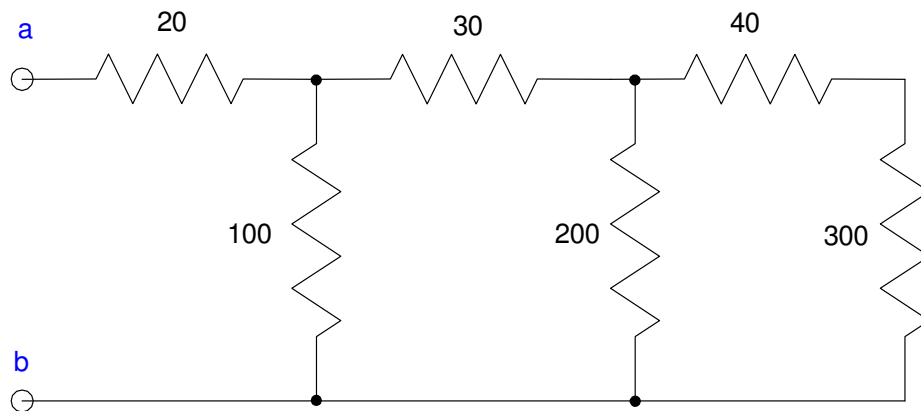


Problem 5 & 6

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

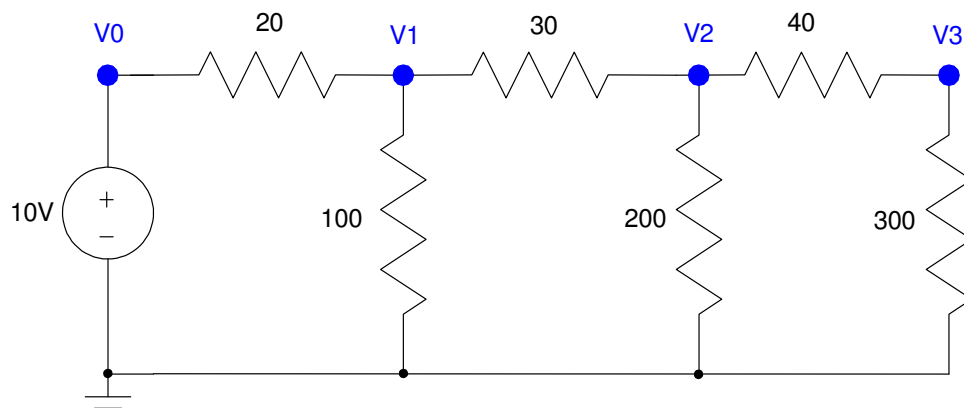
- Apply a 10V source to a and b.
- Determine the current draw from the 10V source
- Calculate the net resistance from $V = IR$



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