

# Homework #4

MEMS 0031 - Electrical Circuits

Assigned February 23, 2021  
Due February 8, 2019

## Problem #1

- Determine the power dissipated by the  $70 \text{ } \Omega$  resistor.

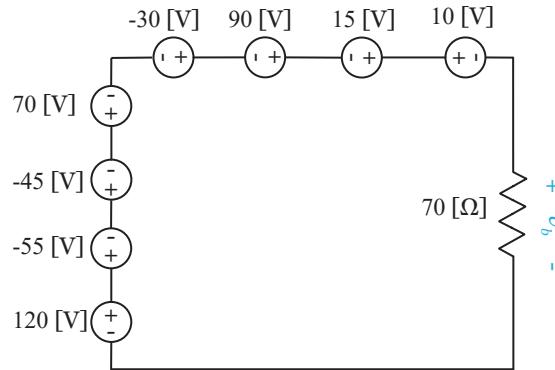


Figure 1: Schematic for Problem #1.

## Problem #2

- Determine the potential difference  $v$  across the  $100 \text{ } \text{k}\Omega$  resistor. Also, determine the power it dissipates.

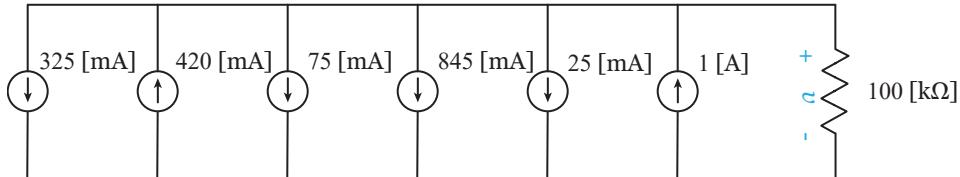


Figure 2: Schematic for Problem #2.

### Problem #3

- Use nodal voltage analysis (NVA) to find the node voltages at a and b.

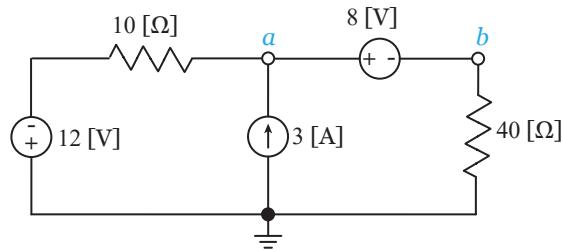


Figure 3: Schematic for Problem #3.

### Problem #4

- The resistor R in Fig. 4 has a resistance of  $200 \text{ [k\Omega]}$ . Determine the voltage values at a, b and c. Also determine the power dissipated/accumulated by all the resistors.

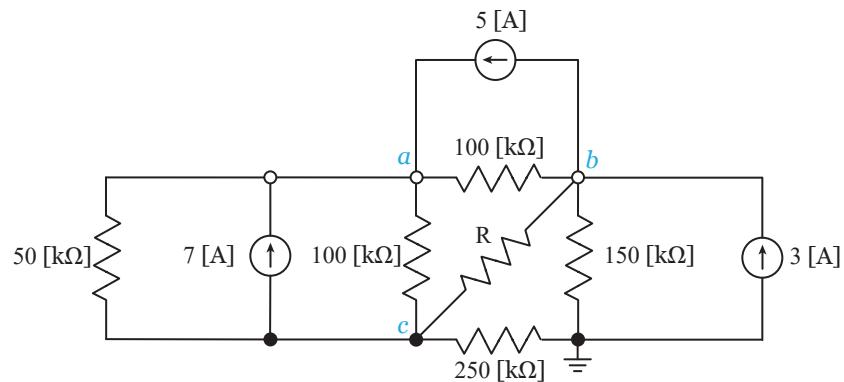


Figure 4: Schematic for Problem #4.

## Problem #5

- Determine the power dissipated/accumulated by each resistor in Fig. 5

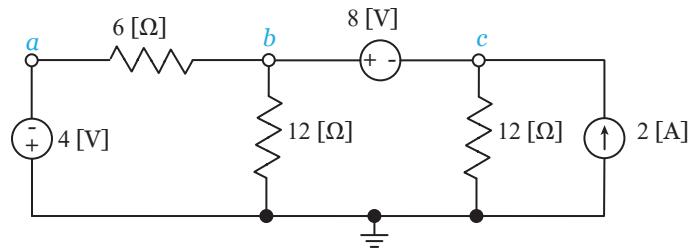


Figure 5: Schematic for Problem #5.

## Problem #6

- Determine the power dissipated by each resistor in Fig. 6

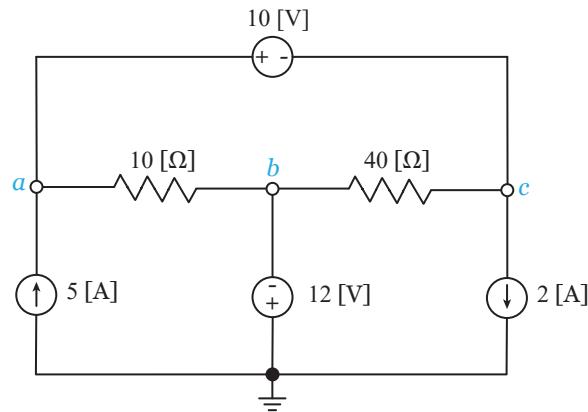


Figure 6: Schematic for Problem #6.