

Homework #5

MEMS 0031 - Electrical Circuits

Assigned February 9th, 2018
Due February 16th, 2018

Problem #1

- Use MCA to solve for the currents i_1 , i_2 and i_3 for the circuit shown in Fig. 1.

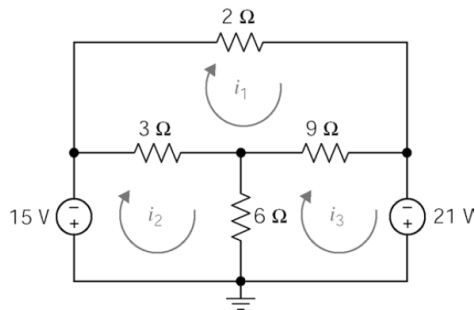


Figure 1: Schematic for Problem #1.

Problem #2

- Use MCA to solve for the resistance R in the circuit shown in Fig. 2.

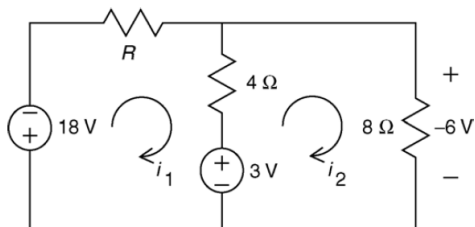


Figure 2: Schematic for Problem #2.

Problem #3

- Use MCA to find i_a and i_b and v_c of the circuit shown in Fig. 3.

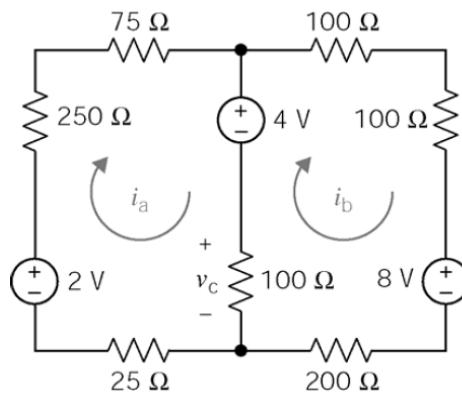


Figure 3: Schematic for Problem #3.

Problem #4

- Use MCA to find the voltage drop v_2 across the $20\ \Omega$ resistor the circuit shown in Fig. 4. Hint: the supermesh is highlighted in green.

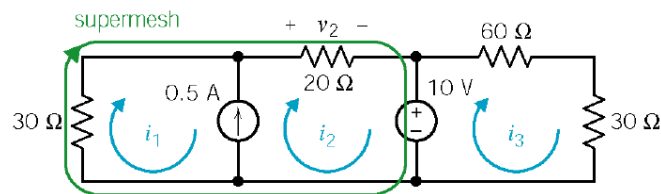


Figure 4: Schematic for Problem #4.

Problem #5

- Use MCA to find the resistance R of the circuit shown in Fig. 5.

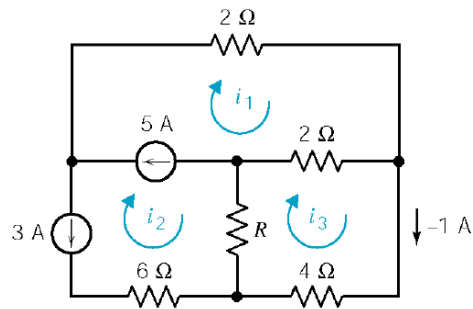


Figure 5: Schematic for Problem #5.

Problem #6

- Use MCA to find v_2 in the circuit shown in Fig. 6.

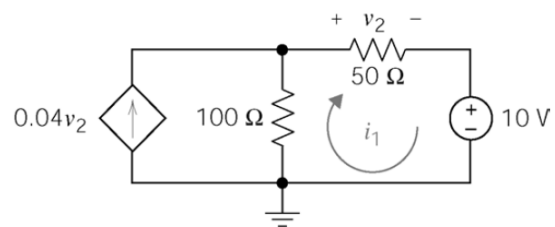


Figure 6: Schematic for Problem #6.