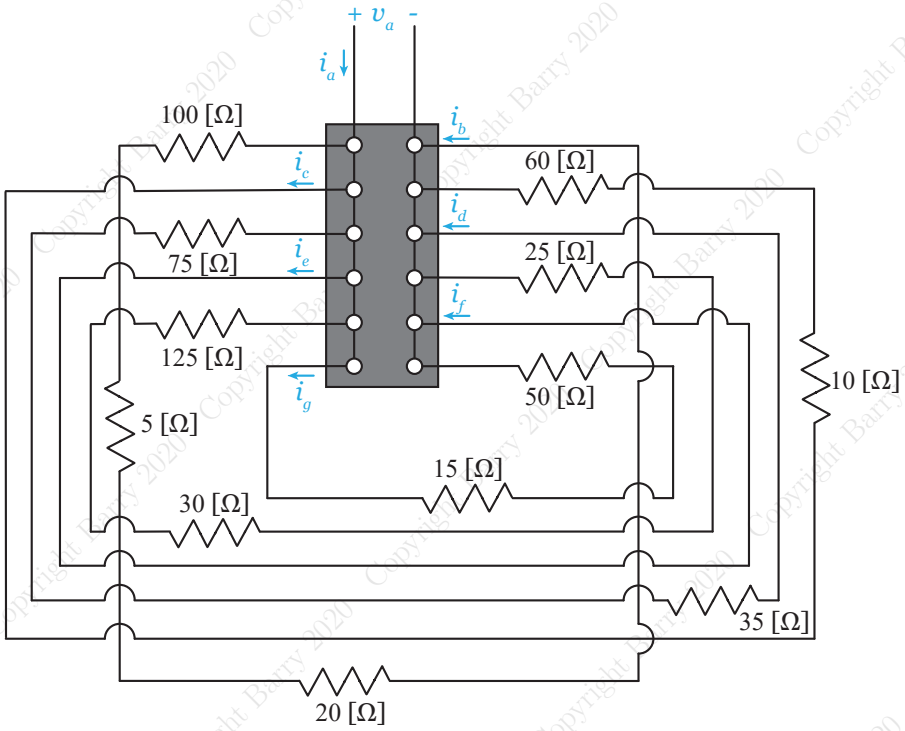
Homework #3

MEMS 0031 - Electrical Circuits

Assigned: May 22nd, 2020
Due: May 27th, 2020 at 11:59 pm

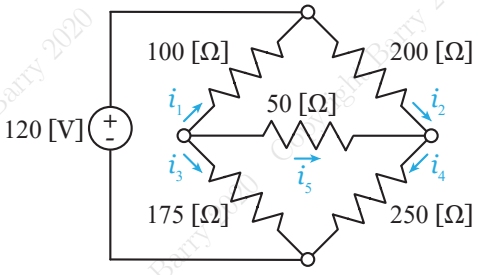
Problem #1

Given the circuit below, determine the currents i_a through i_g, and the voltage drop across each resistor, using the concepts of series and parallel resistors, given $v_a = 240$ [V]. The voltage across each resistor should be denoted in the form of $v_{\mathrm{X}\,[\Omega]}$, where X indicates the numeric value of the resistance.



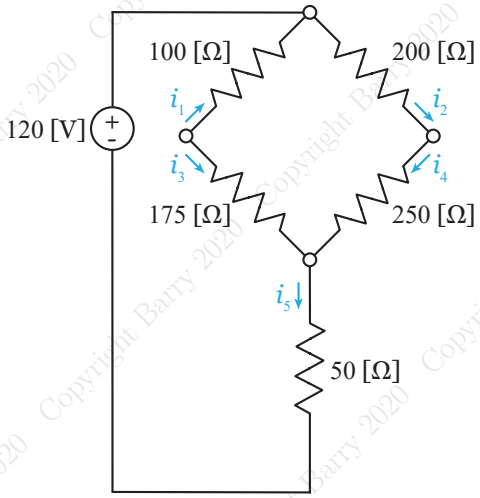
Problem #2

Given the circuit below, determine the currents i_1 through i_5, and the voltage drop across each resistor, using the concepts of series and parallel resistors, given a 120 [V] source. The voltage across each resistor should be denoted in the form of $v_{\mathrm{X}\,[\Omega]}$, where X indicates the numeric value of the resistance.



Problem #3

Given the circuit below, determine the currents i_1 through i_3, and the voltage drop across each resistor, using the concepts of series and parallel resistors, given a 120 [V] source. The voltage across each resistor should be denoted in the form of $v_{X\,[\Omega]}$, where X indicates the numeric value of the resistance.



Problem #4

Given the circuit below, determine the currents i_1 through i_6, and the voltage drop across each resistor, using the concepts of series and parallel resistors, given a 25 [V] source. The voltage across each resistor should be denoted in the form of $v_{X\,[\Omega]}$, where X indicates the numeric value of the resistance.