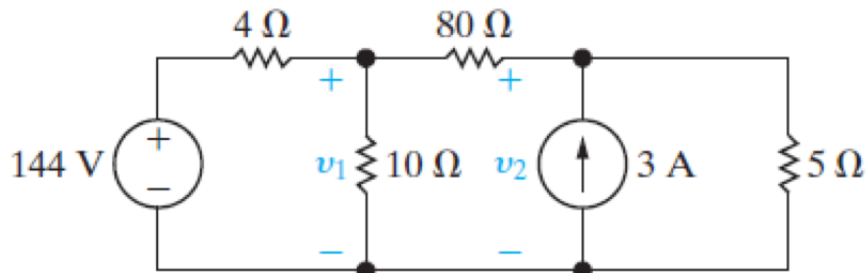


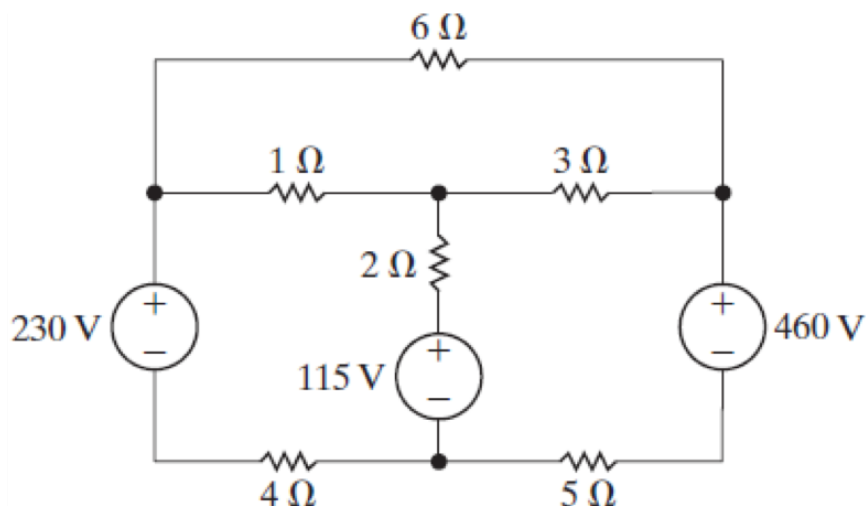
Question 1 [10]

Use the mesh-current method to find v_1 and v_2 in the circuit below.



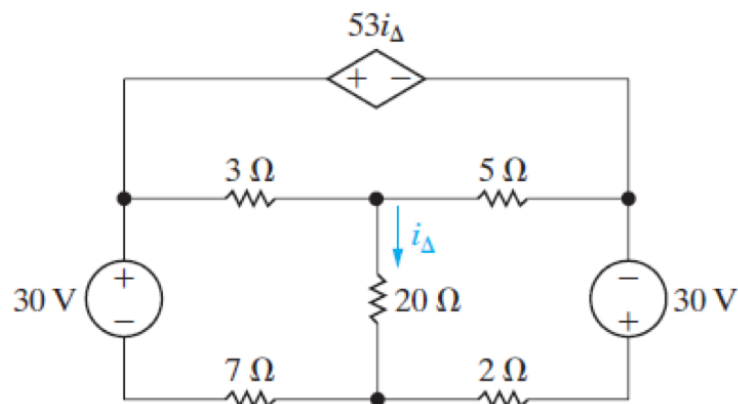
Question 2 [10]

Use the mesh-current method to find the total power developed by the three independent voltage sources. Also, explicitly evaluate the power dissipated in the 6 resistors to double check your calculation.



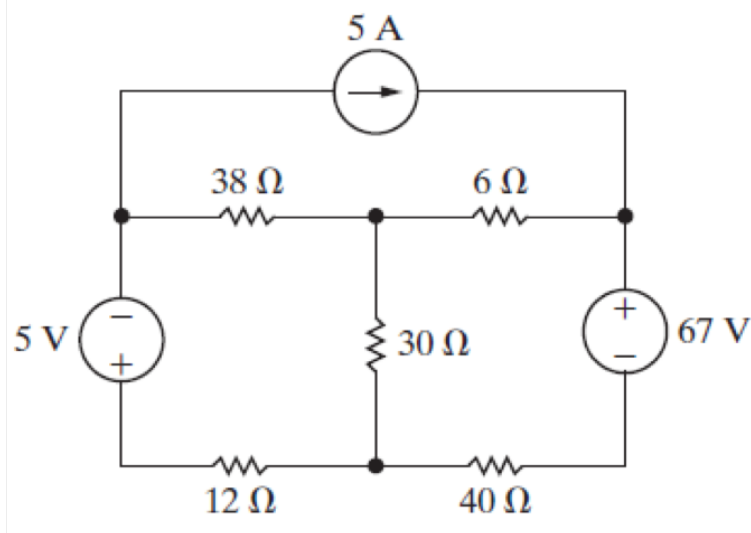
Question 3 [10]

Use the mesh-current method to find the power developed in the three voltage sources.



Question 4 [10]

Use the mesh-current method to determine which of the three sources is providing power to the circuit and which are absorbing power. What are the values of the power in each case? Go on to then compute the power dissipated in the resistors to ensure power conservation.

**Question 5** [10]

Use the mesh-current method to find the three branch currents identified in the circuit below. [Hint: identify the supermesh.]

