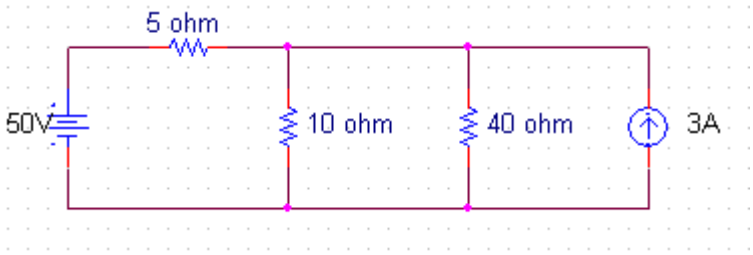
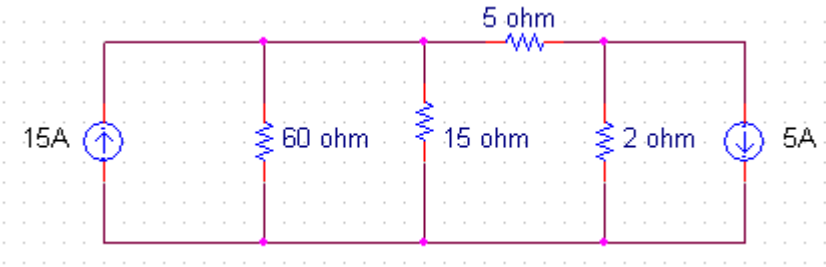
Arab Academy for Science & Technology and Maritime Transport – Cairo Branch
College of Engineering & technology
Electronics & Communication Engineering Department

Fundamentals of Electricity and Electronics
EC134
Problem Set No.3

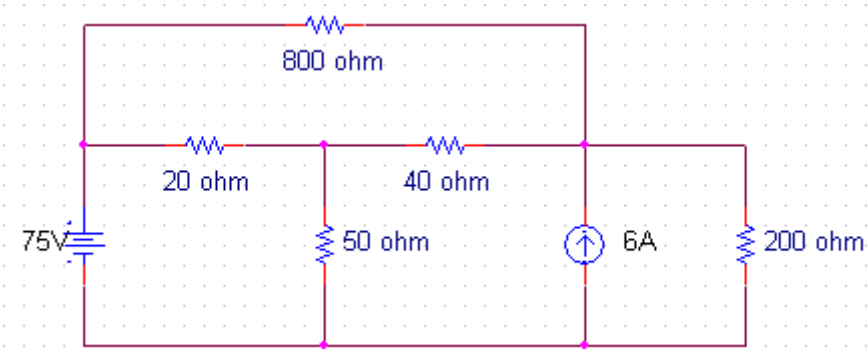
1-Use the node voltage method to find the currents at the 5Ω 10Ω and 40Ω resistors.



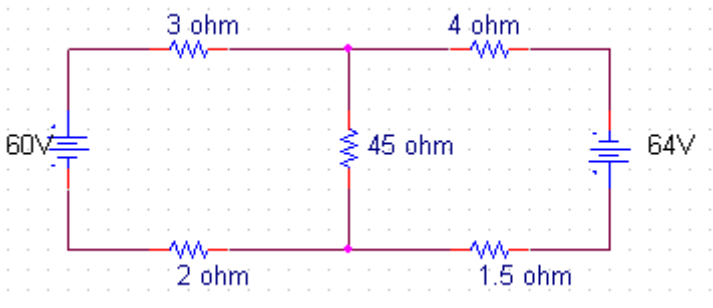
2- a) Use the node voltage method to find the voltage across the 60Ω and 2Ω resistors and the current passing through the 5Ω resistor.
b) how much power is delivered to the circuit by the 15 A source?



3- Use the node voltage method to find the voltage across the 20Ω resistor.

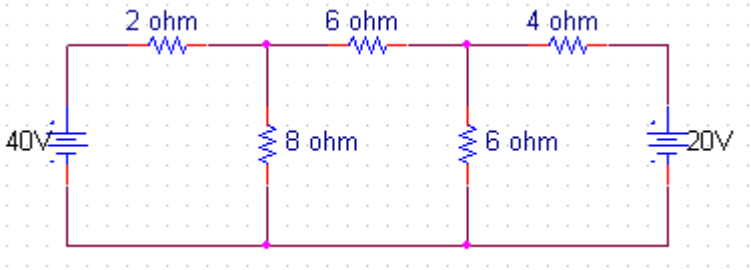


4- Use the mesh current method to find the current passing through 3Ω, 6Ω and 45Ω resistors.



5-a) Use the mesh current method to find the power associated with each voltage source in the circuit shown.

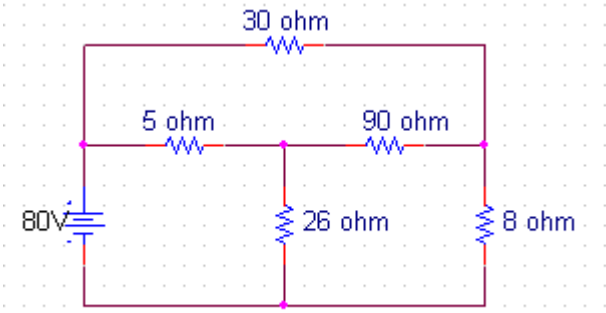
b) Calculate the voltage across the 8Ω and 6Ω resistors.



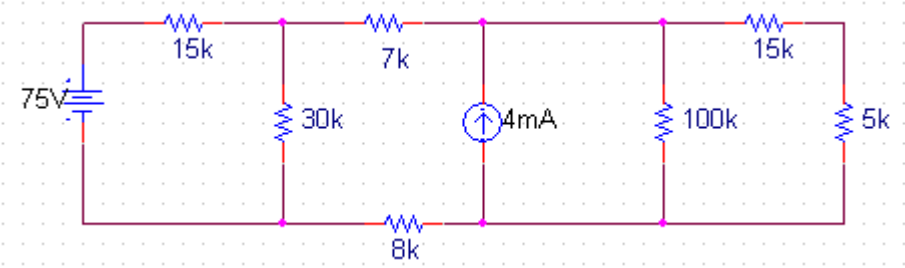
6- Use the mesh current method to find:

a) The power delivered by the 80V source to the circuit shown.

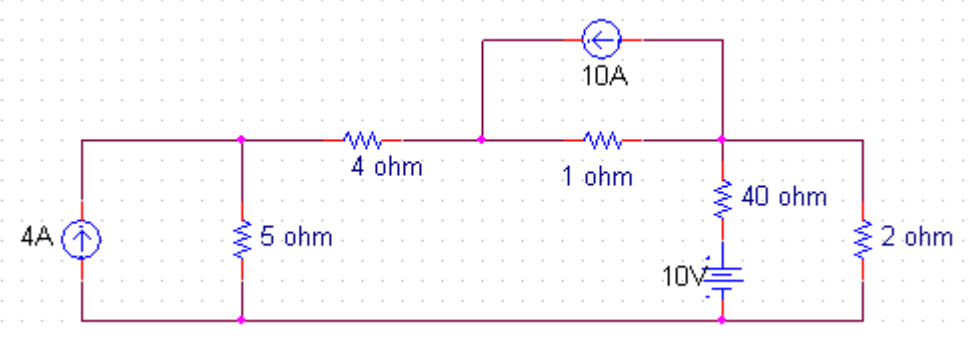
b) The power dissipated by the 8Ω resistor.



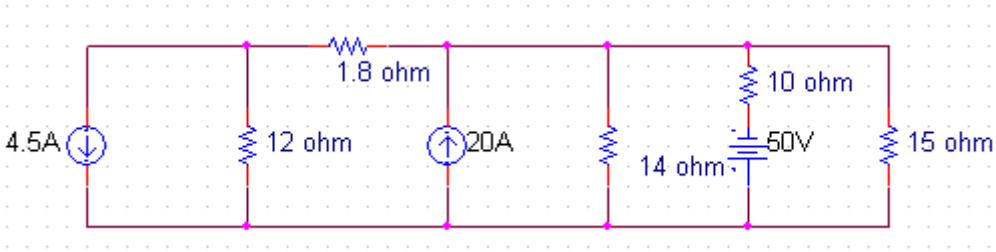
7- Use the source transformation method to find the current passing through 5kΩ resistor.



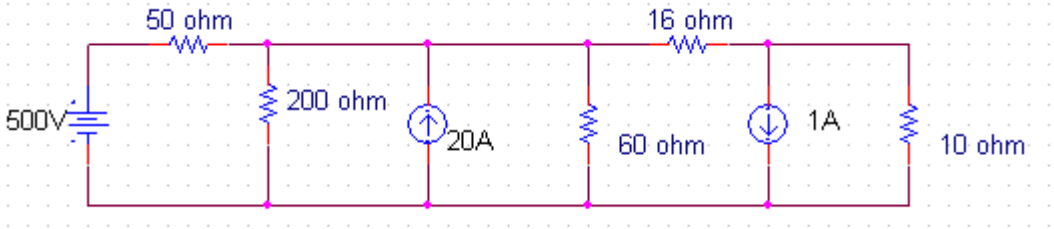
8- Use the source transformation method to find the current passing through the 2 ohm resistor.



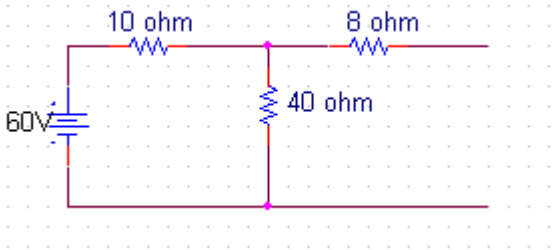
9- Use the superposition method to find the current passing through the 12Ω resistor.



10- Use the superposition method to find the current passing through the 10Ω resistor.



11- Find the Thevinin equivalent circuit for the circuit shown.



12- Find the Thevinin equivalent circuit for the circuit shown.