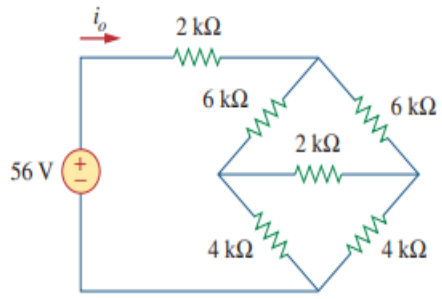
(Chapter-03) Methods of Analysis

Practice Problems

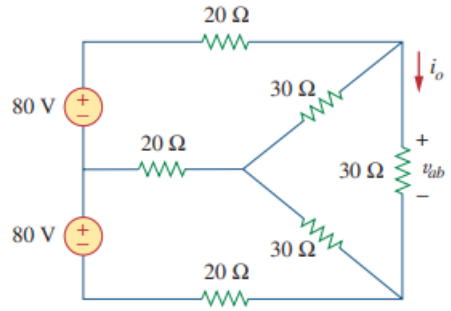
Problems on Mesh Analysis:

Q1. For the bridge network in Fig given below, find Io using mesh analysis.



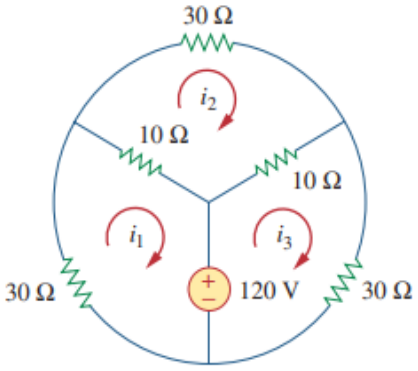
(Ans: 8mA)

Q2. Use mesh analysis to find Vab and Io in the circuit given:



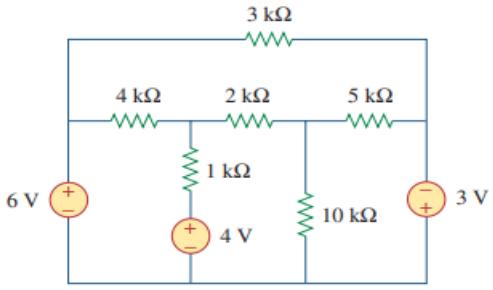
(Ans: 1.7778A, 53.33V)

Q3. Find i1, i2 and i3 in the circuit given:



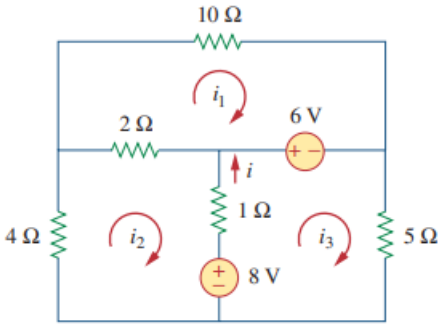
(Ans: -3A, 0, 3A)

Q4. Determine the current through the 10-k resistor in the circuit using mesh analysis:



(Ans: 148mA)

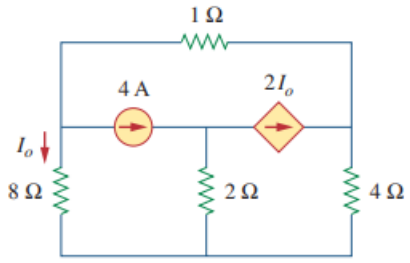
Q5. Apply mesh analysis to find i.



(Ans: 1.188A)

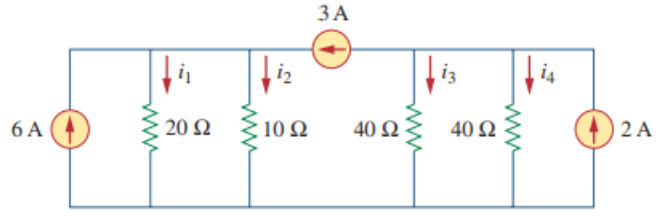
Problems on Nodal Analysis:

Q1. Find Io in the circuit given below:



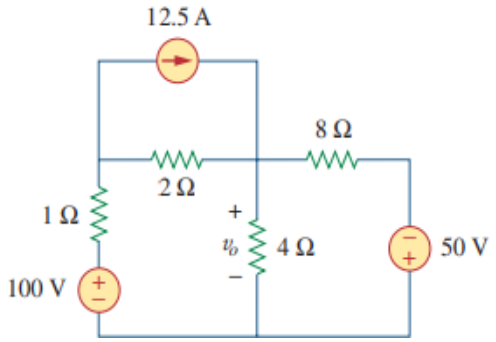
(Ans: 4amps)

Q2. In the given circuit, calculate the currents i1 through i4.



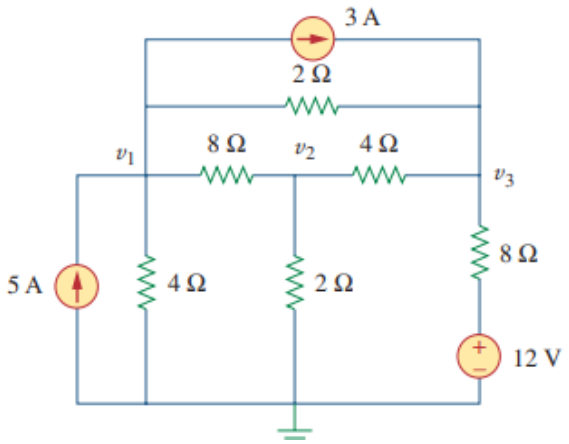
(Ans: 3A, 6A, -500mA, -500mA)

Q3. Using nodal analysis, find Vo in the circuit:



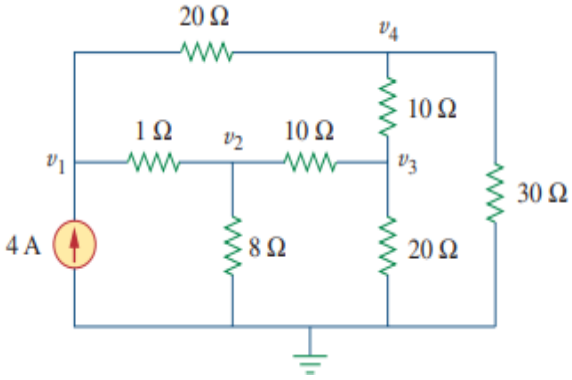
(Ans: 50V)

Q4. Use nodal analysis to find V1, V2 and V3 in the circuit:



(Ans: 10V, 4.933V, 12.267V)

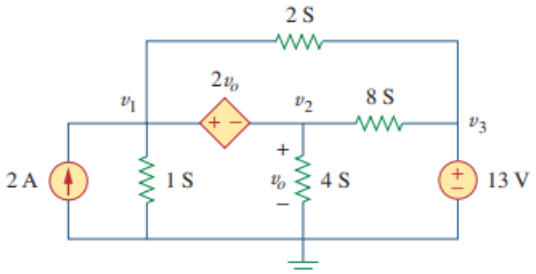
Q5. Use nodal analysis to determine the node voltages.



(Ans: 25.52V, 22.05V, 14.842V, 15.055V)

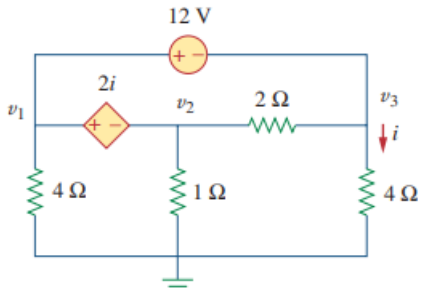
Problems on Super Node:

Q1. Determine voltages through in the circuit using nodal analysis.



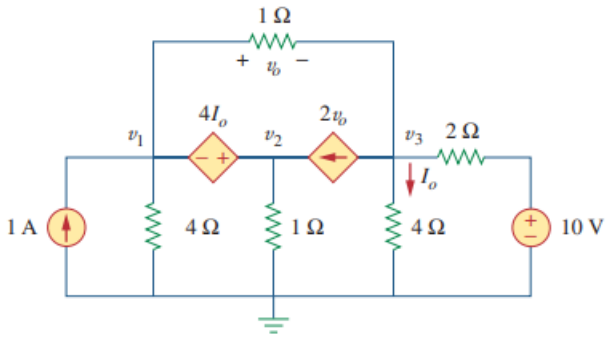
(Ans: 18.858V, 6.286V, 13V)

Q2. For the circuit in Fig given below, find V1, V2 and V3 using nodal analysis.



(Ans: -3V, 4.5V, -15V)

Q3. Find the node voltages for the circuit given:



(Ans: 4.97V, 4.85V, -0.12V)