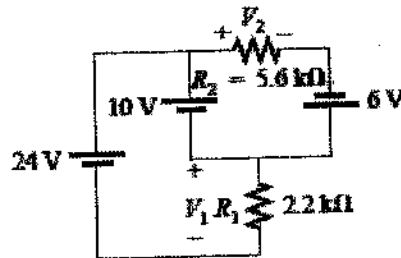




Intended learning outcomes (ILOs): [a1, a4, a5, b1, b2, b3, b5, c8, c9, d1, d3]

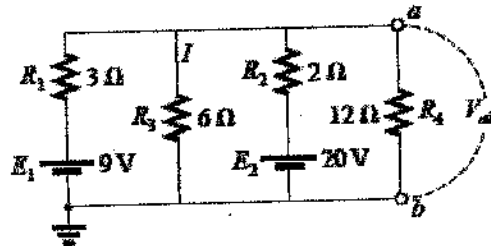
Question No. 1 [15 Marks]

A-) Determine the unknown voltages using Kirchoff's voltage law. [6 Marks]



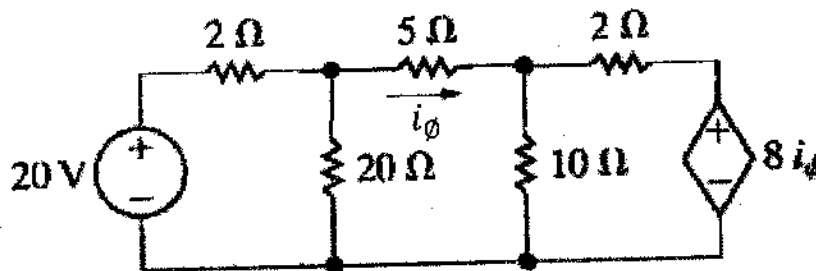
B-) Find the voltage V_{ab} and the polarity of points (a) and (b) in the following circuit. [6 Marks]

C-) Find the magnitude and direction of the current I in the 6Ω resistor. [3 Marks]



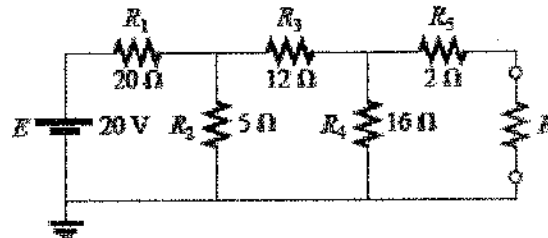
Question No. 2 [20 Marks]

A-) Use the node-voltage method to find the power dissipated in the 5Ω resistor in the circuit shown in the following Fig.: [7 Marks]

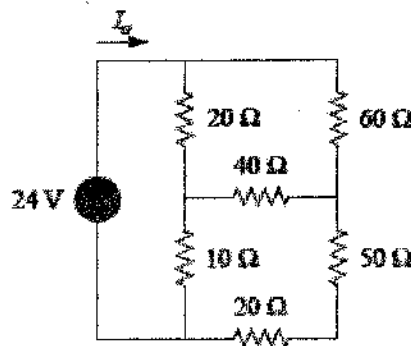




B-) Find the Thévenin equivalent circuit for the network external to the resistor R in the following fig.: [7 Marks]

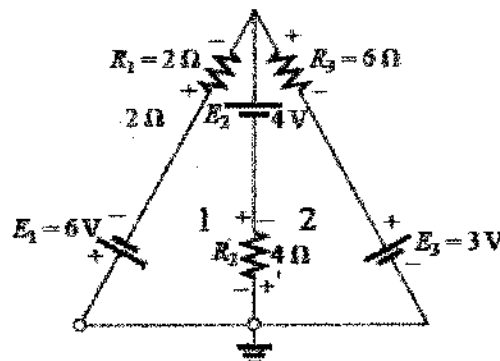


C-) Calculate I_o in the circuit of the following Fig. by using $\Delta - Y$ transformation: [6 Marks]



Question No. 3 [10 Marks]

Find the branch currents of the following network: [10 Marks]



With my best wishes
 Dr. Sherif Emam
Sherif Emam