

Department of Electrical Engineering
ESC 201A: Introduction of Electronics
Assignment 2

- Find the current flowing in 10Ω resistor in the circuit shown in Fig. 1 by node voltage method.

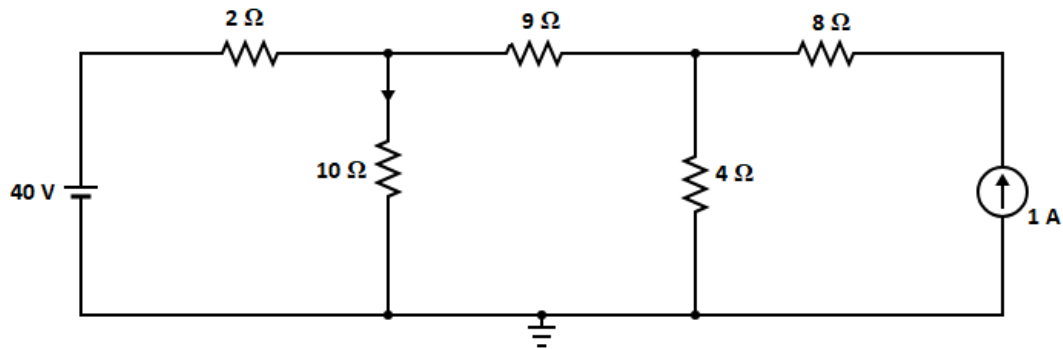


Fig. 1

- In Fig. 2 determine I_x without using superposition principle.
 - Employ superposition to determine the voltage across the $17\text{ k}\Omega$ resistor. If the maximum power rating of the resistor is 250 mW , find the maximum positive voltage and the minimum negative voltage to which the 5 V source can be increased or decreased before the resistor overheats?

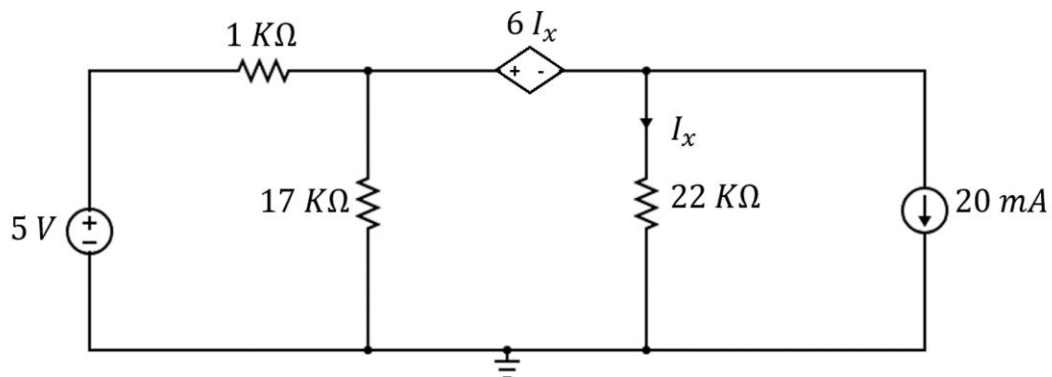


Fig. 2

- For the network of Fig. 3 find the current in 3Ω resistor using
a) Mesh current method b) Thevenin's theorem.

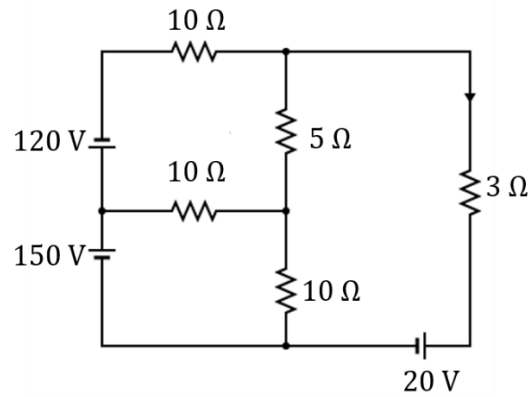


Fig. 3

4. Apply Thevenin's theorem to determine current in 9Ω resistor in Fig. 4.

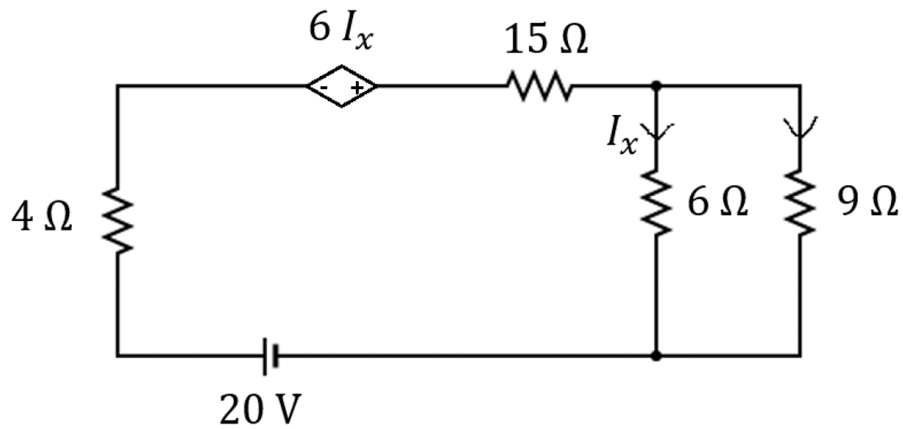


Fig. 4

5. For the circuit shown in Fig. 5, determine the value of R_L which absorbs the maximum amount of power when $V_1 = 20$ V volts and calculate the power.

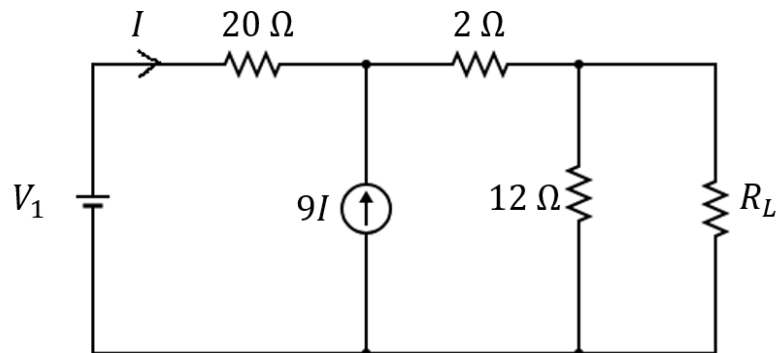


Fig. 5