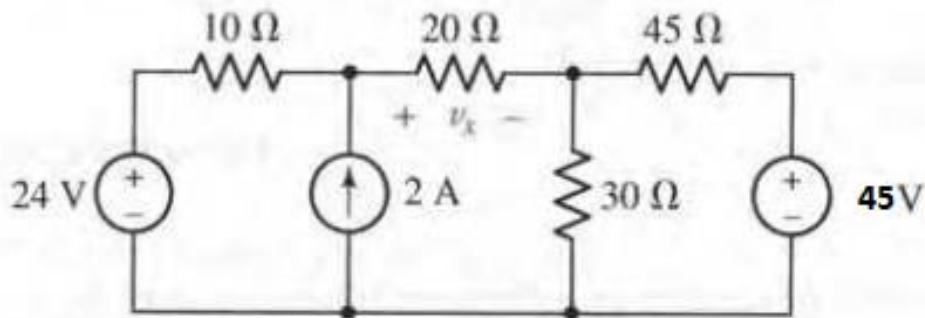## ECE101: Basic Electrical and Electronic Circuits
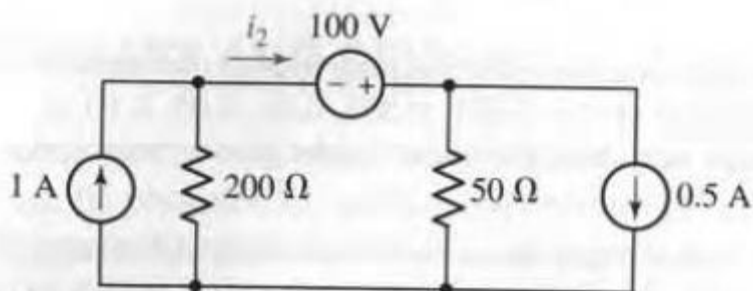Tutorial -03

To be discussed in Tutorials during

Feb 02- 07

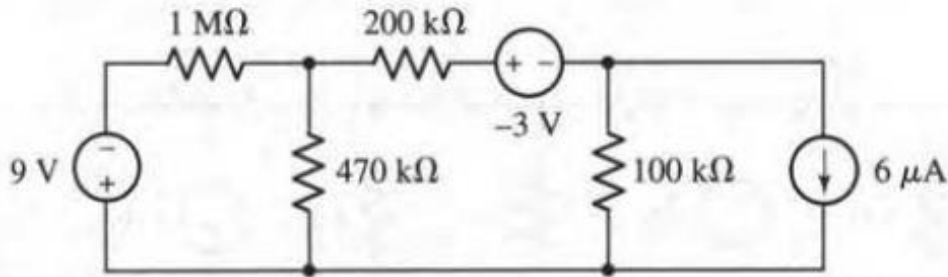7. Use superposition to find the value of v_x in the circuit of Fig. 5.52.

■ FIGURE 5.52

9. (a) Use the superposition theorem to find i_2 in the circuit shown in Fig. 5.54.
   (b) Calculate the power absorbed by each of the five circuit elements.

■ FIGURE 5.54

25. Determine the power dissipated by the 1 MΩ resistor using source transformation to first simplify the circuit shown in Fig. 5.70.
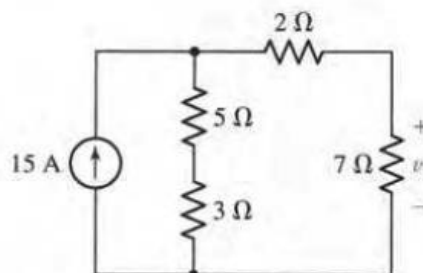

■ **FIGURE 5.70**

40. (*a*) Find the Thévenin equivalent at terminals *a* and *b* for the network shown in Fig. 5.83. How much power would be delivered to a resistor connected to *a* and *b* if R_{ab} equals (*b*) 50 Ω; (*c*) 12.5 Ω?
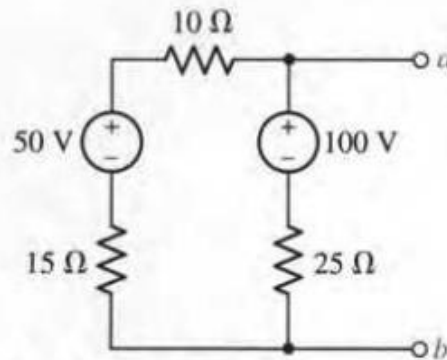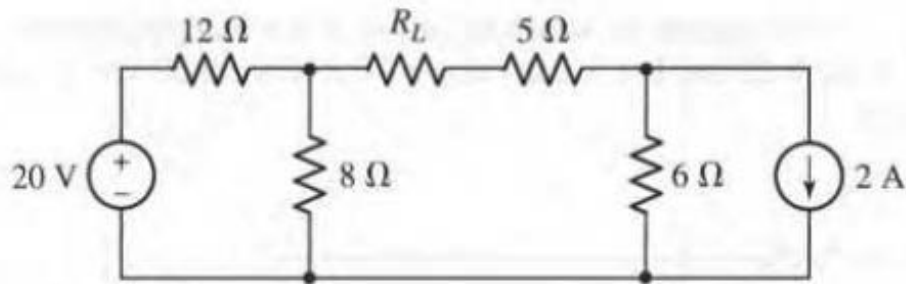

■ **FIGURE 5.83**

42. (*a*) Find the Thévenin equivalent of the network connected to the 7 Ω resistor of Fig. 5.85. (*b*) Find the Norton equivalent of the network connected to the 7 Ω resistor of Fig. 5.85. (*c*) Compute the voltage v_1 using both of your equivalent circuits. (*d*) Replace the 7 Ω resistor with a 1 Ω resistor, and recompute v_1 using either circuit.
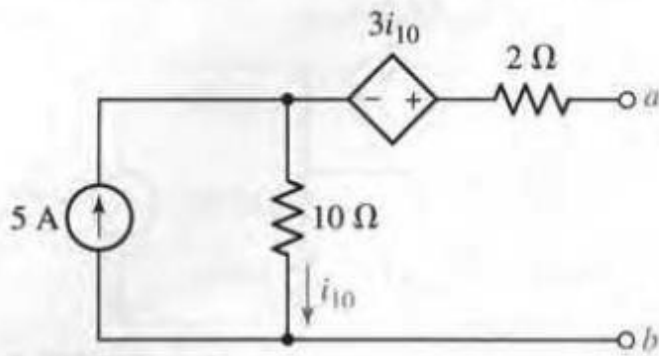

■ **FIGURE 5.85**

61. If any value whatsoever may be selected for R_L in the circuit of Fig. 5.101, what is the maximum power that could be dissipated in R_L?

■ FIGURE 5.101

63. (a) Determine the Thévenin equivalent of the network shown in Fig. 5.103, and (b) find the maximum power that can be drawn from it.

■ FIGURE 5.103