

Training Second Partial Integrator Exam

TE1002 Circuits 1

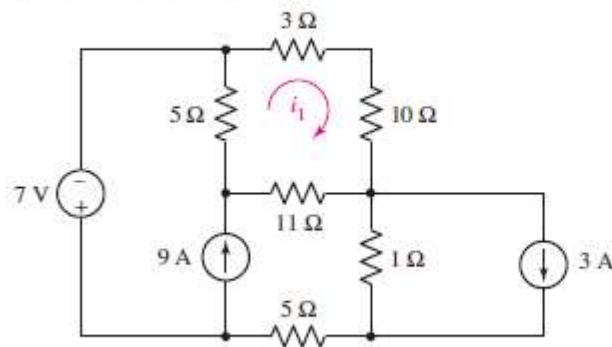
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Tecnológico de Monterrey

Name _____

Problem 1

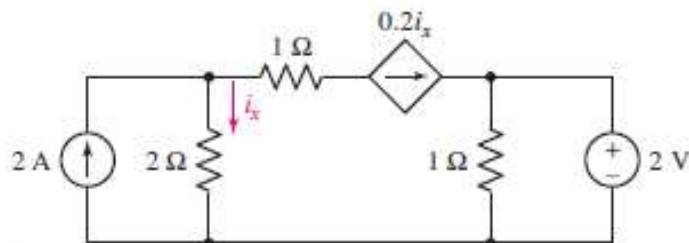
For the circuit of Fig. 4.73, determine the mesh current i_1 and the power dissipated by the $1\ \Omega$ resistor.



■ FIGURE 4.73

Problem 2

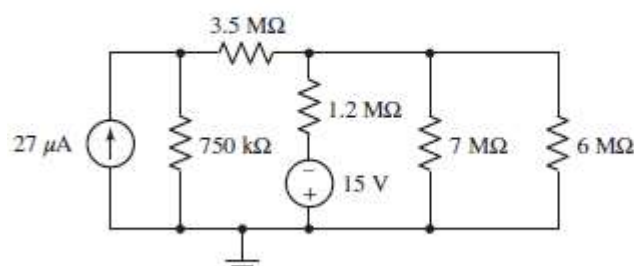
- (a) Employ superposition to determine the individual contribution from each independent source to the current i_x as labeled in the circuit shown in Fig. 5.57.
(b) Compute the power absorbed by each $1\ \Omega$ resistor.



■ FIGURE 5.57

Problem 3

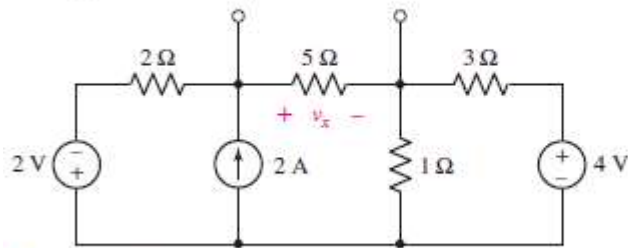
- (a) Using repeated source transformations, reduce the circuit of Fig. 5.62 to a voltage source in series with a resistor, both of which are in series with the $6\ \text{M}\Omega$ resistor. (b) Calculate the power dissipated by the $6\ \text{M}\Omega$ resistor using your simplified circuit.



■ FIGURE 5.62

Problem 4

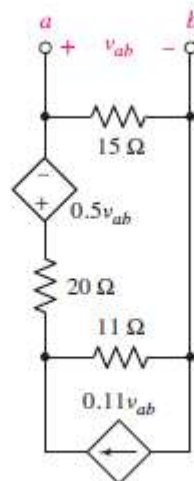
Determine the Thévenin equivalent of the network shown in Fig. 5.74 as seen looking into the two open terminals.



■ FIGURE 5.74

Problem 5

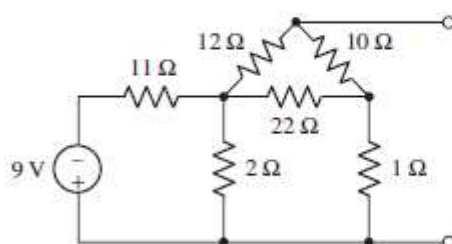
Determine the Thévenin and Norton equivalents of the circuit shown in Fig. 5.83, as seen by an unspecified element connected between terminals a and b .



■ FIGURE 5.83

Problem 6

(a) Determine the two-component Thévenin equivalent of the network in Fig. 5.102. (b) Calculate the power dissipated by a $1\ \Omega$ resistor connected between the open terminals.



■ FIGURE 5.102