Problem 2.34 Select R in the circuit of Fig. P2.34 so that $V_L = 5$ V. Hint: Use source-transformation technique

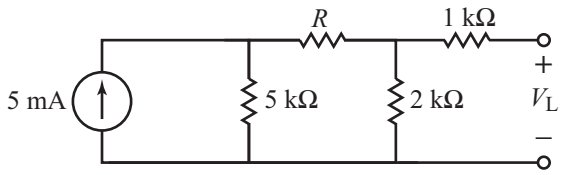


Figure P2.34: Circuit for Problem 2.34.

Problem 2.44 Apply source transformations and resistance reductions to simplify the circuit to the left of nodes (a,b) in Fig. P2.44 into a single voltage source and a resistor. Then, determine I.

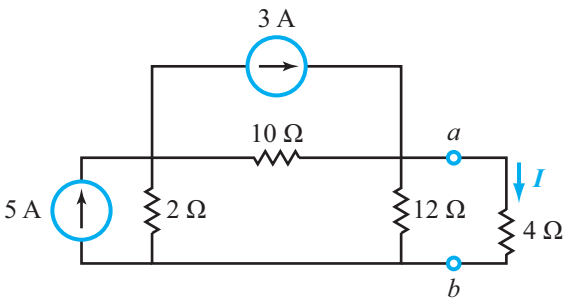
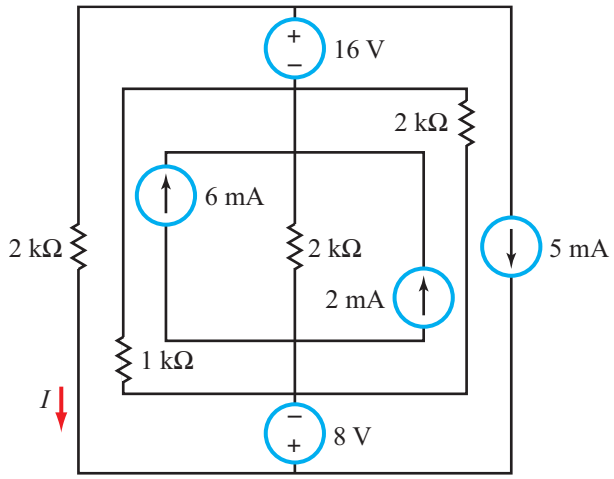


Figure P2.44 Circuit of Problem 2.44.

*2.51 Determine current I in the circuit of Fig. P2.51. Hint: Use source-transformation technique



Problem 3.60 Determine the current I_x in the circuit of Fig. P3.60 by applying the source-superposition method. Call I'_x the component of I_x due to the voltage source alone, and I''_x the component due to the current source alone.

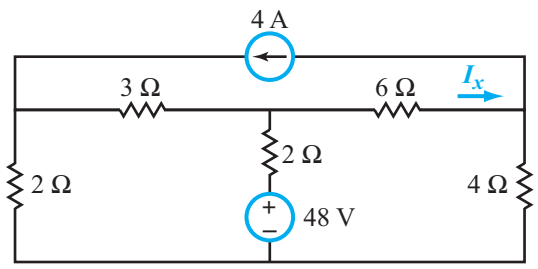


Figure P3.60 Circuit for Problem 3.60.

Problem 3.63 Apply the source-superposition method to the circuit in Fig. P3.63 to determine:

(a) V_x', the component of V_x due to the 1-A current source alone.

(b) V_x'', the component of V_x due to the 10-V voltage source alone.

(c) V_x''', the component of V_x due to the 3-A current source alone.

(d) The total voltage $V_x = V_x' + V_x'' + V_x'''$.

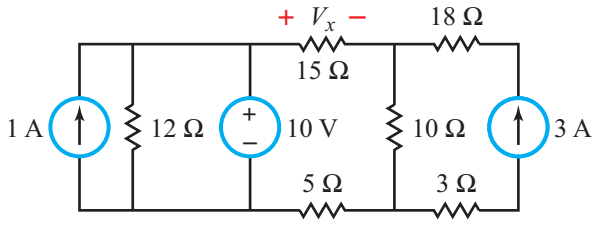


Figure P3.63 Circuit of Problem 3.63.

Problem 3.65 Find the Thévenin equivalent circuit at terminals (a, b) for the circuit in Fig. P3.65.

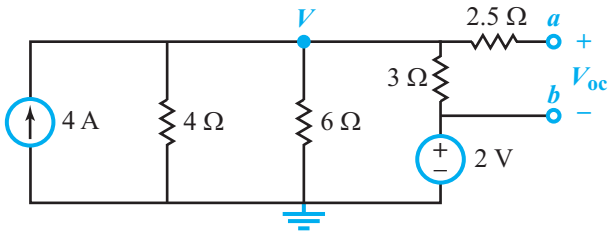
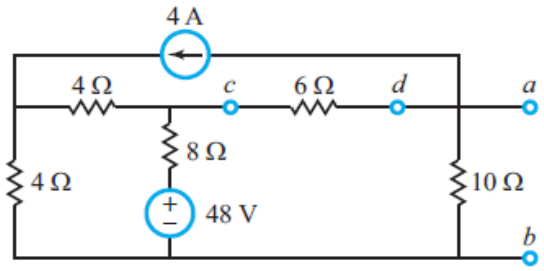


Figure P3.65 Circuit for Problem 3.65.

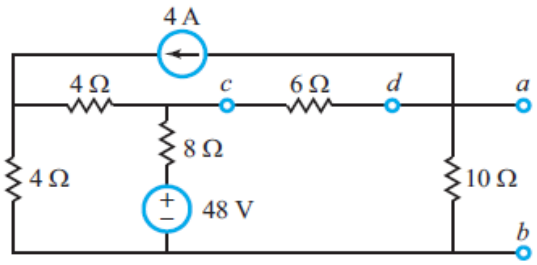
Problem 3.66 The circuit in Fig. P3.66 is to be connected to a load resistor R_L between terminals (a, b).

(a) Find the Thévenin equivalent circuit at terminals (a, b).

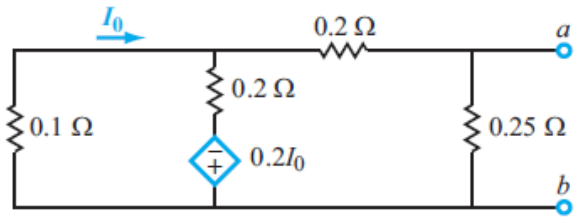
(b) Choose R_L so that the current flowing through it is 0.5 A.



Problem 3.67 For the circuit in Fig. P3.66, find the Thévenin equivalent circuit as seen by the 6-Ω resistor connected between terminals (c, d) as if the 6-Ω resistor is a load resistor connected to (but external to) the circuit. Determine the current flowing through that resistor.



Problem 3.73 Find the Norton equivalent circuit at terminals (a, b) for the circuit in Fig. P3.73. Hint: For Norton equivalent, find the Thevenin equivalent and apply source transformation to it.



Problem 3.78 Obtain the Thévenin equivalent of the circuit to the left of terminals (a,b) in Fig. P3.78. Use your result to compute the power dissipated in the 0.4-Ω load resistor.

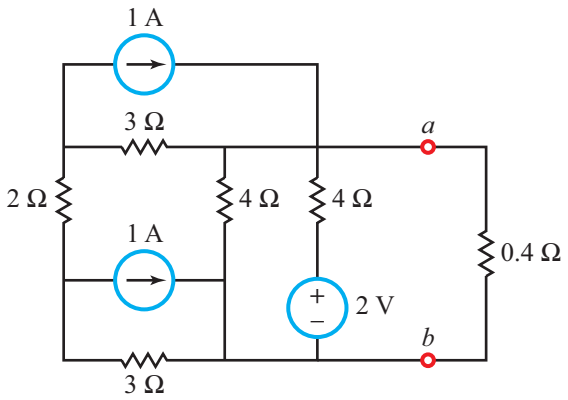


Figure P3.78 Circuit of Problem 3.78.