Problem 1.11 For the circuit in Fig. P1.11:

  (a) Identify and label all distinct nodes.

  (b) Which of those nodes are extraordinary nodes?

  (c) Identify all combinations of 2 or more circuit elements that are connected in series.

  (d) Identify pairs of circuit elements that are connected in parallel.

Figure P1.11 Circuit for Problem 1.11.
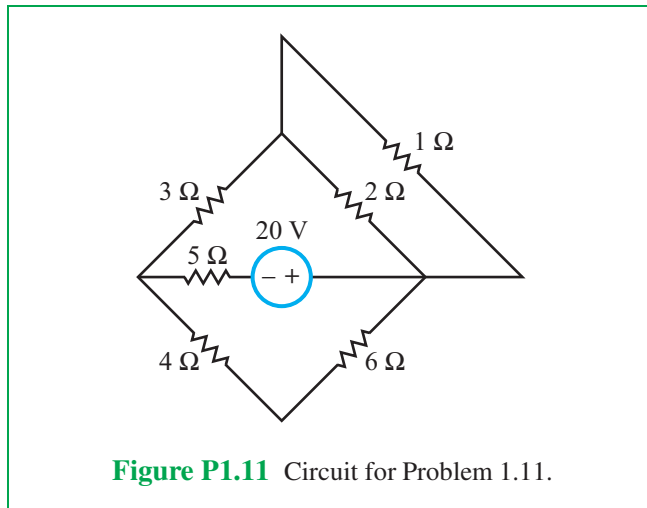
Problem 1.23 The plot in Fig. P1.23 displays the cumulative amount of charge $q(t)$ that has exited a certain device up to time t. What is the current at:
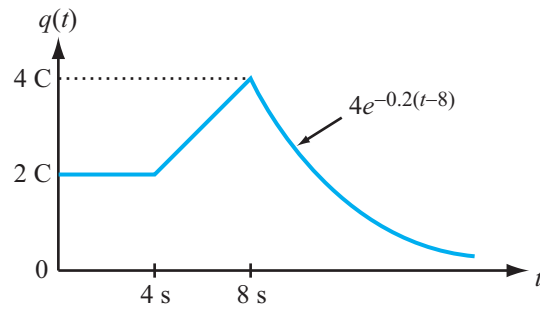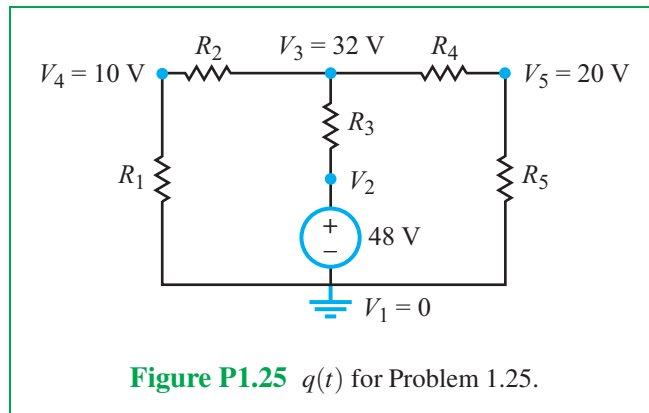
(a) $t = 2$ s

(b) $t = 6$ s

(c) $t = 12$ s

Figure P1.23: $q(t)$ for Problem 1.23.

Problem 1.25 In the circuit of Fig. P1.25, node V_1 was selected as the ground node.

(a) What is the voltage at node V_2?

(b) What is the voltage difference $V_{32} = V_3 - V_2$?

(c) What are the voltages at nodes 1, 3, 4, and 5 if node 2 is selected as the ground node instead of node 1?

Figure P1.25 $q(t)$ for Problem 1.25.

Problem 1.27 For each of the eight devices in the circuit of Fig. P1.27, determine whether the device is a supplier or a recipient of power and how much power it is supplying or receiving.
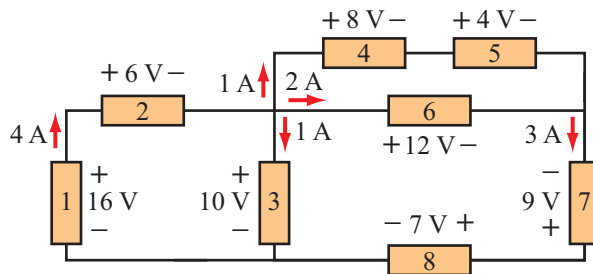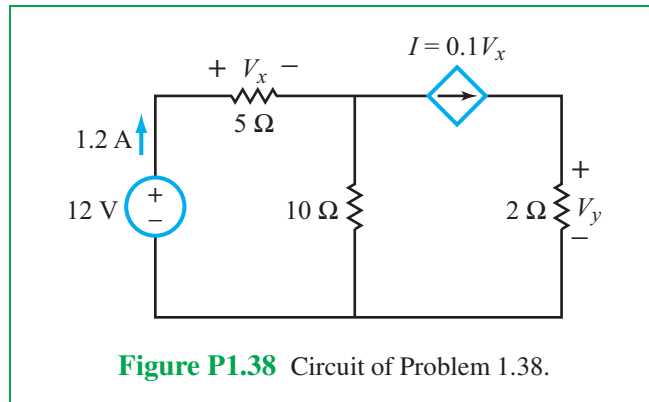

Figure P1.27: Circuit for Problem 1.27.

Problem 1.38 Determine V_y in the circuit of Fig. P1.38.

Figure P1.38 Circuit of Problem 1.38.

Problem 1.39 Determine V, the voltage of the dependent voltage source in the circuit of Fig. P1.39.
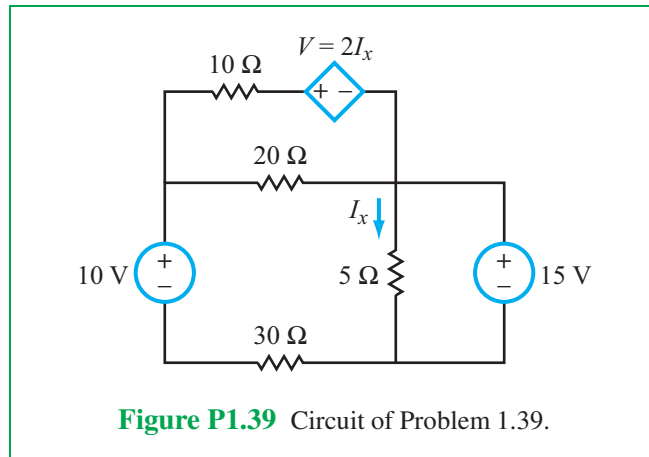

Figure P1.39 Circuit of Problem 1.39.

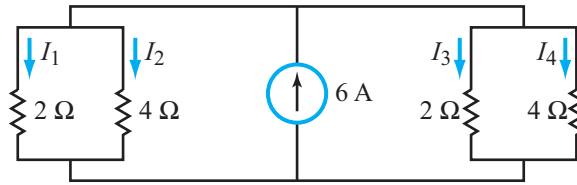**Problem 2.17** Determine currents I_1 to I_4 in the circuit of Fig. P2.17.

Figure P2.17: Circuit for Problem 2.17.

Problem 2.18 Determine the amount of power dissipated in the 3-kΩ resistor in the circuit of Fig. P2.18.
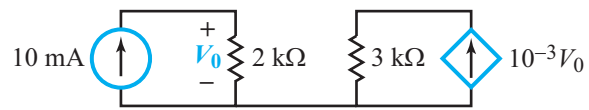

Figure P2.42: Circuit for Problem 2.18.

Problem 2.23 Determine the amount of power supplied by the independent current source in the circuit of Fig. P2.23.
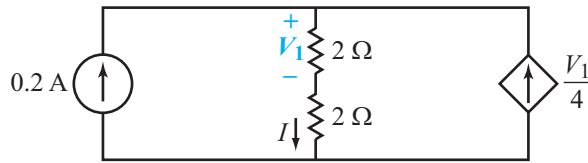

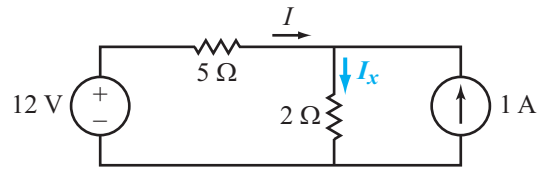Figure P2.23: Circuit for Problem 2.23.

Problem 2.15 Determine I_x in the circuit of Fig. P2.15.

Figure P2.15: Circuit for Problem 2.15.