2.41 Find V_1 in the network in Fig. P2.41.

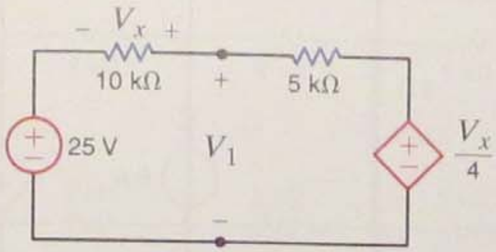

Figure P2.41

2.42 Find the power supplied by each source, including the dependent source, in Fig. P2.42.

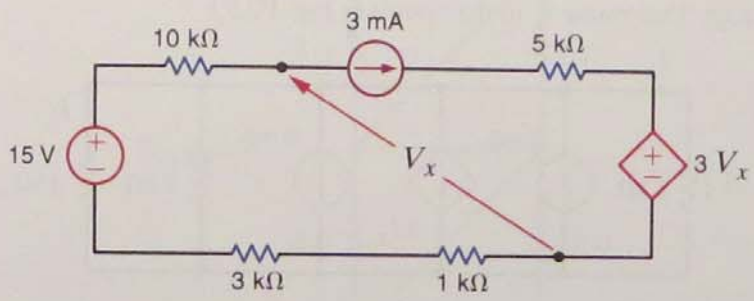

Figure P2.42

2.43 Find the power absorbed by the dependent voltage source in the circuit in Fig. P2.43.

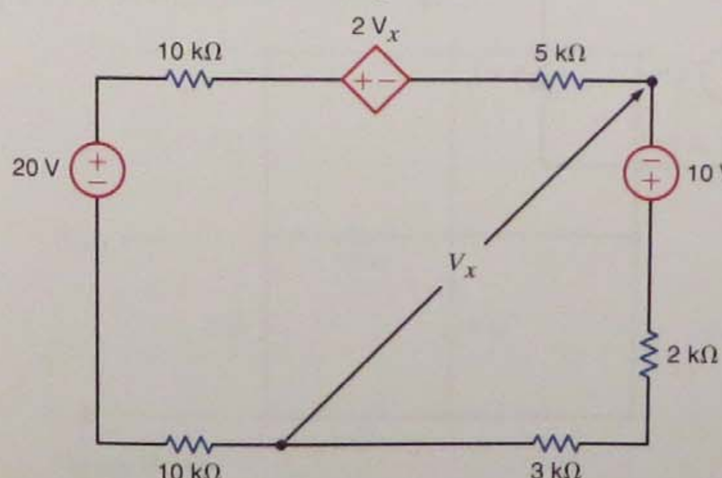

Figure P2.43

2.44 Find the power absorbed by the dependent source in the circuit in Fig. P2.44.

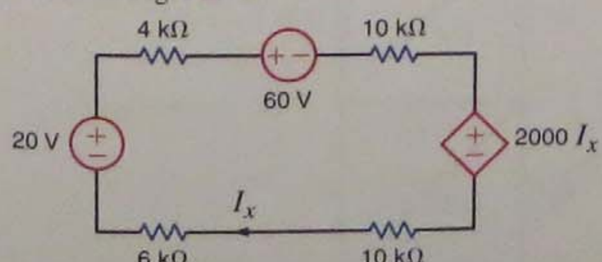

Figure P2.44

2.45 The 100-V source in the circuit in Fig. P2.45 is supplying 200 W. Solve for V_2.

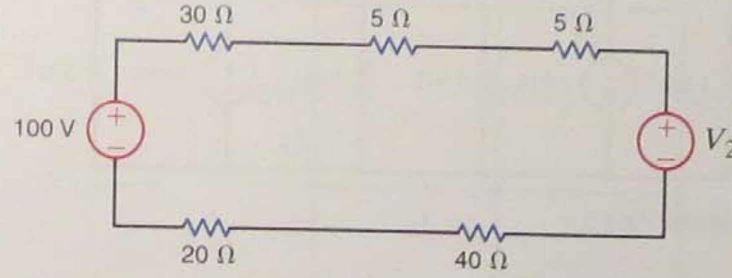

Figure P2.45

2.46 Find the value of V_2 in Fig. P2.46 such that $V_1 = 0$.

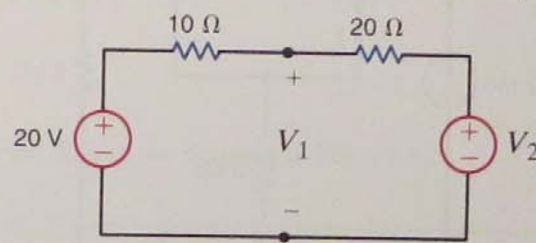

Figure P2.46

2.47 Find I_o in the network in Fig. P2.47.

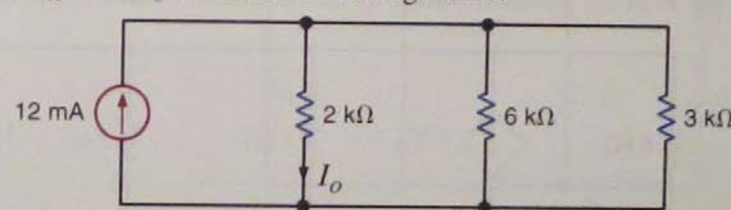

Figure P2.47

2.48 Find I_o in the network in Fig. P2.48.

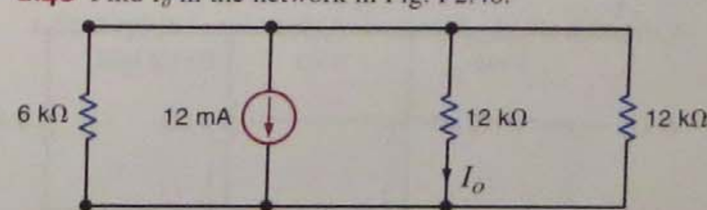

Figure P2.48

2.49 Find the power supplied by each source in the circuit in Fig. P2.49.

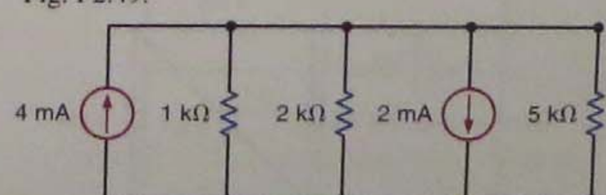

Figure P2.49

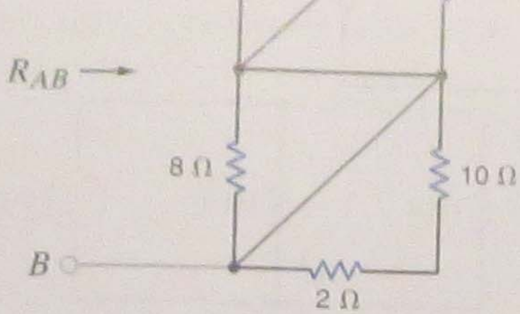

Figure P2.58

2.59 Find R_{AB} in the circuit in Fig. P2.59.

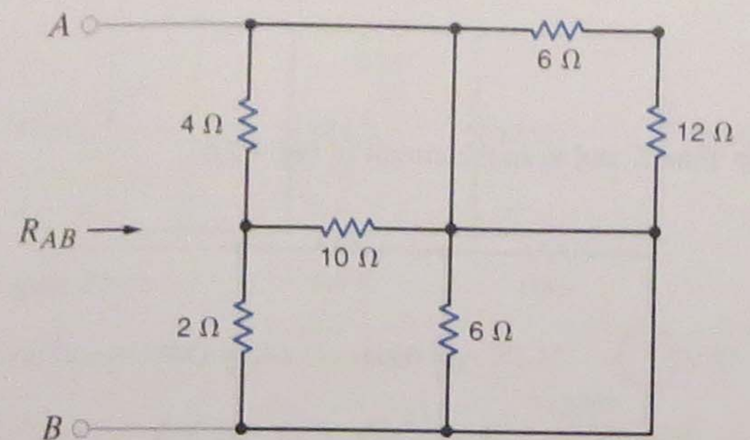

Figure P2.59

2.60 Find R_{AB} in the network in Fig. P2.60.

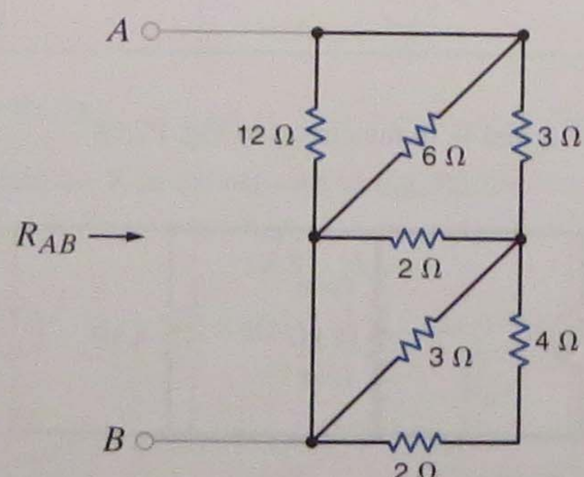

Figure P2.60

2.62 Find R_{AB} in the network in Fig. P2.62.

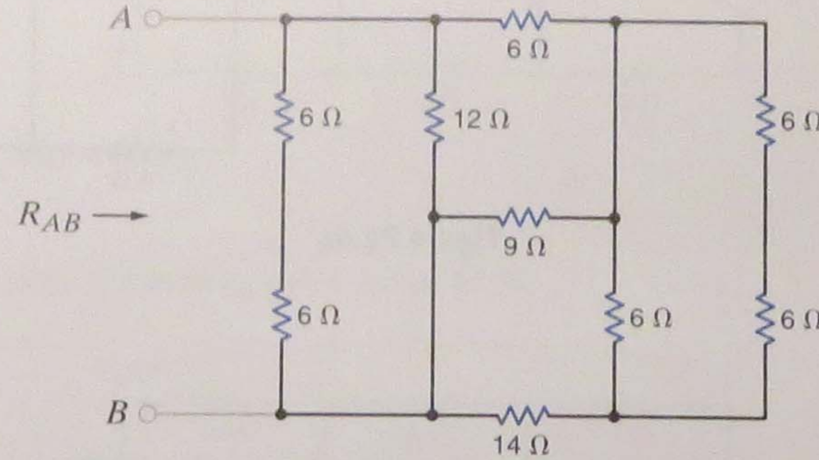

Figure P2.62

2.63 Find the equivalent resistance R_{eq} in the network in Fig. P2.63.

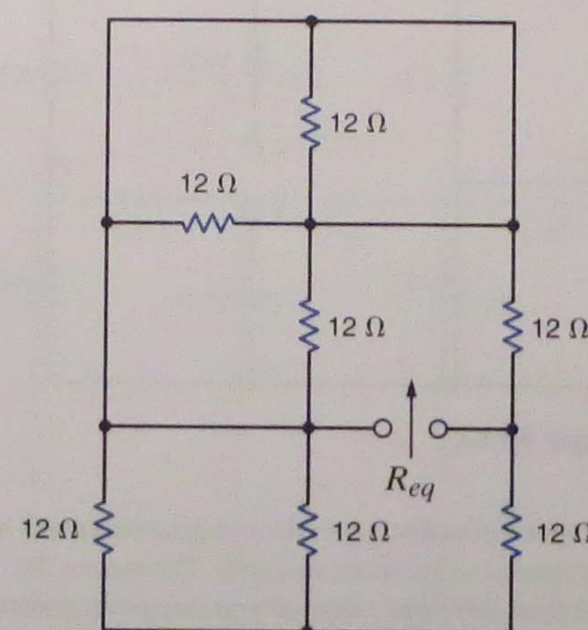

Figure P2.63

3.22 Find V_o in the network in Fig. P3.22 using nodal analysis.

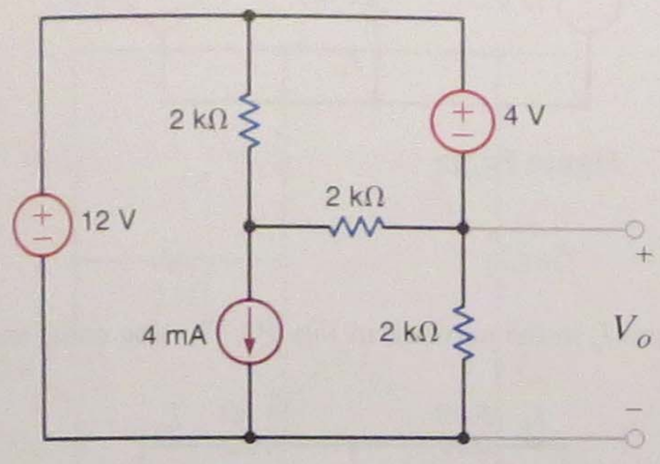

Figure P3.22

3.23 Find I_o in the circuit in Fig. P3.23 using nodal analysis.

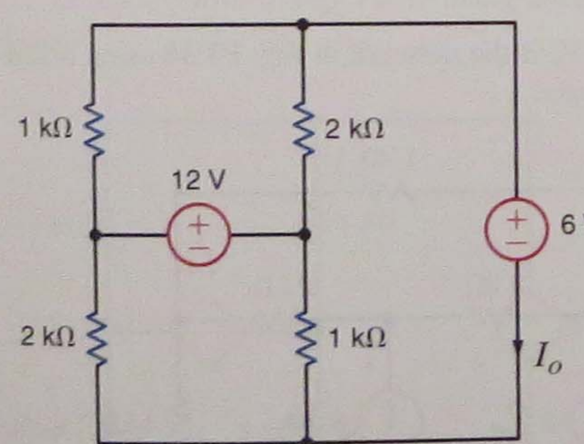

Figure P3.23

3.25 Use nodal analysis to solve for the node voltages in the circuit in Fig. P3.25. Also calculate the power supplied by the 2-mA current source.

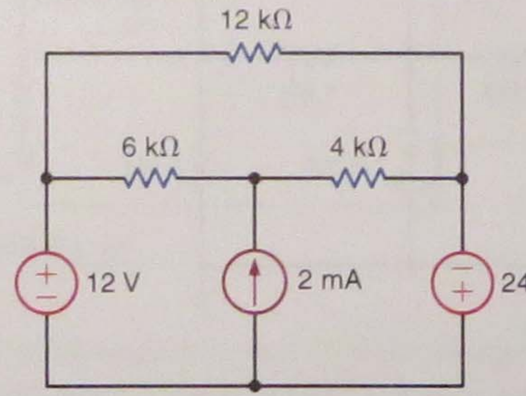

Figure P3.25

3.26 Use nodal analysis to determine the node voltages defined in the circuit in Fig. P3.26.

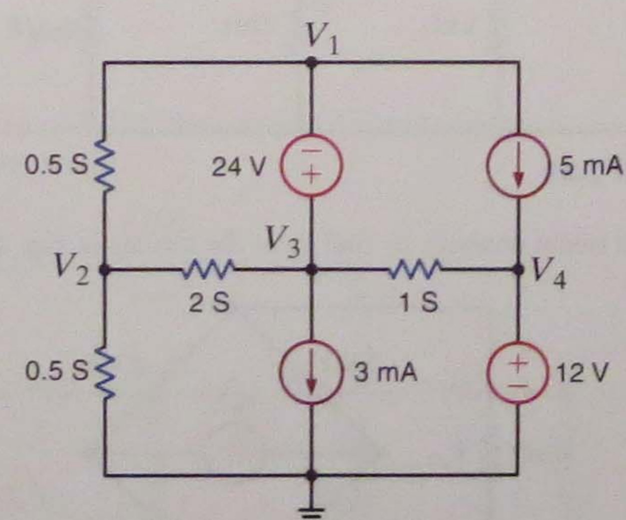

Figure P3.26

3.65 Find V_o in the network in Fig. P3.65 using loop analysis.

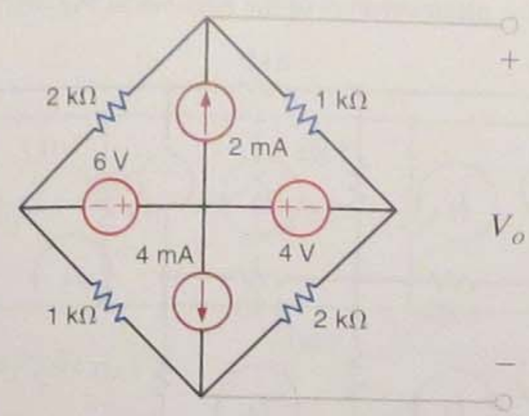

Figure P3.65

3.66 Find V_o in the circuit in Fig. P3.66 using loop analysis.

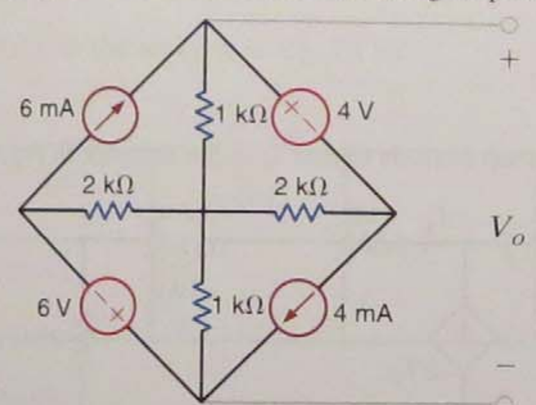

Figure P3.66

3.67 Find I_o in the network in Fig. P3.67 using loop analysis.

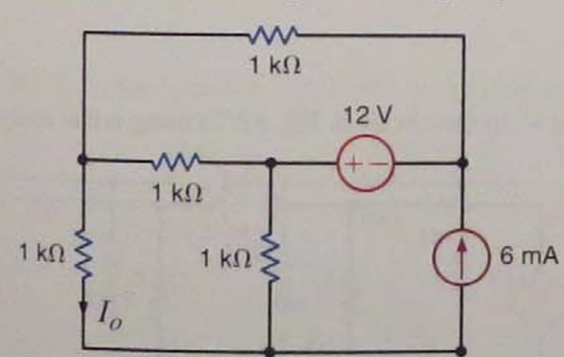

Figure P3.67

3.69 Use loop analysis to find V_o in the circuit in Fig. P3.69.

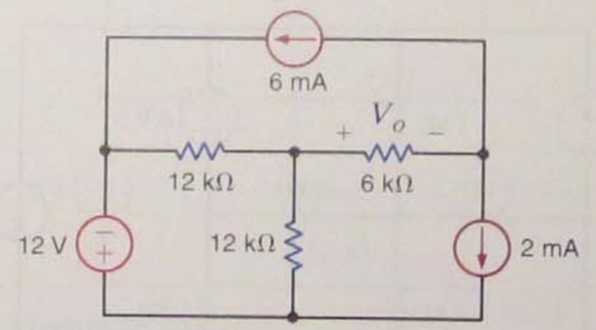

Figure P3.69

3.70 Using loop analysis, find V_o in the network in Fig. P3.70.

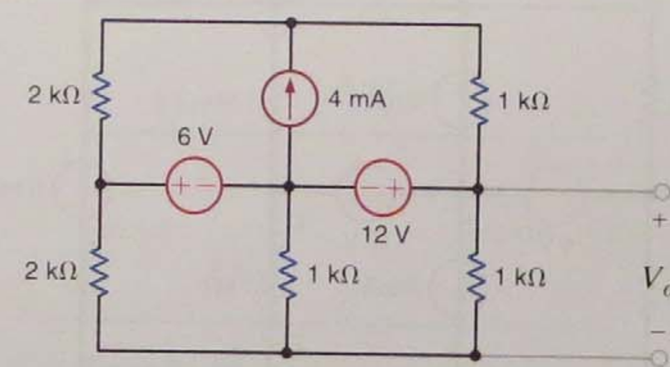

Figure P3.70

3.71 Find I_o in the circuit in Fig. P3.71.

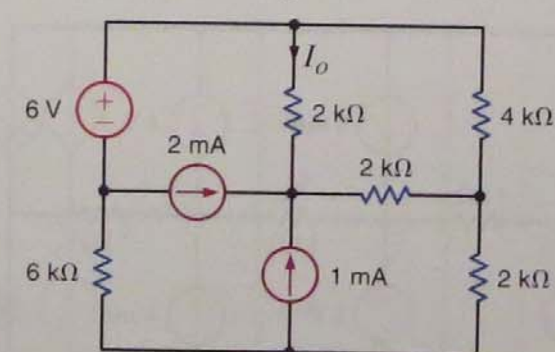

Figure P3.71

3.102 Use mesh analysis to determine the power delivered by the indepenent 3-V source in the network in Fig. P3.102.

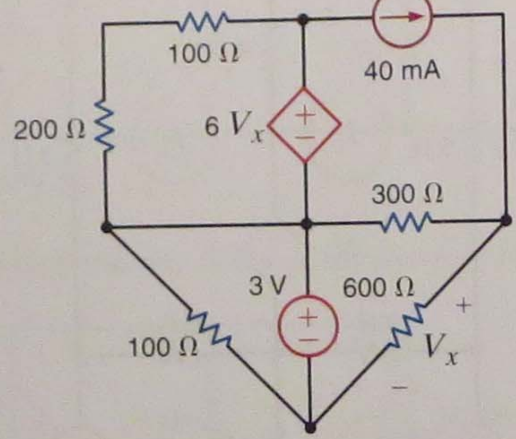

Figure P3.102

3.103 Use mesh analysis to find the power delivered by the current-control voltage source in the circuit in Fig. P3.103.

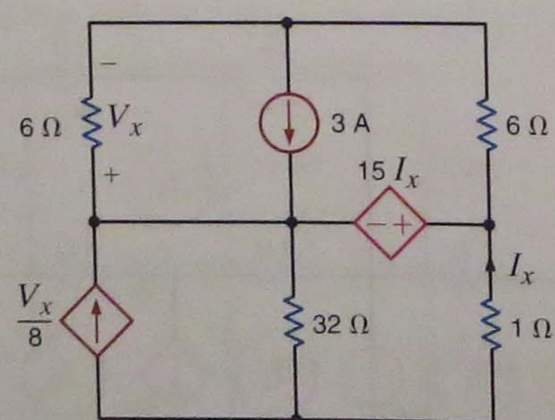

Figure P3.103

3.105 Use both nodal and loop analyses to find V_o in the circuit in Fig. P3.105.

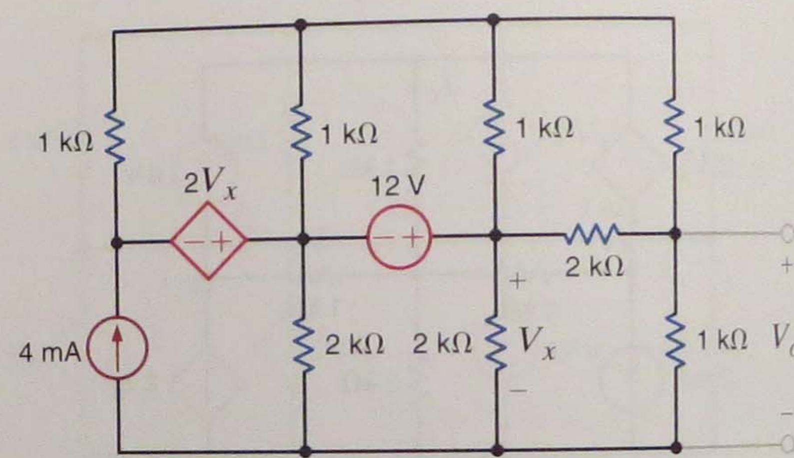

Figure P3.105

3.106 Find I_o in the network in Fig. P3.106 using nodal analysis.

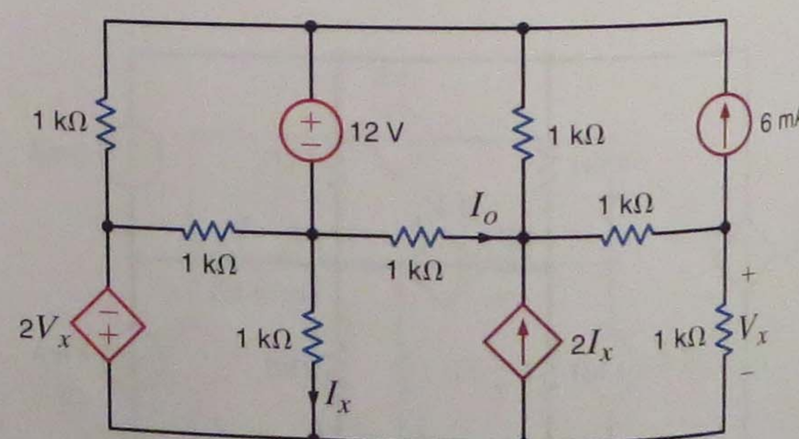

Figure P3.106

5.17 Use superposition to find I_o in the circuit in Fig. P5.17.

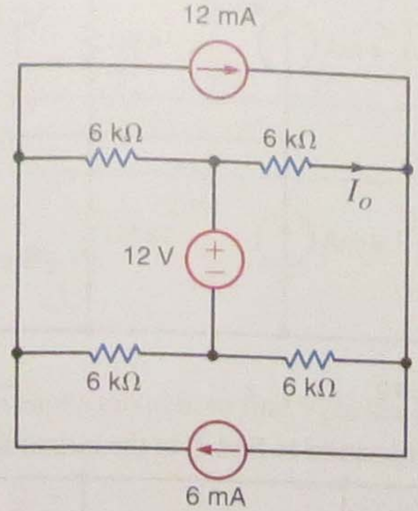

Figure P5.17

5.18 Use superposition to find I_o in the network in Fig. P5.18.

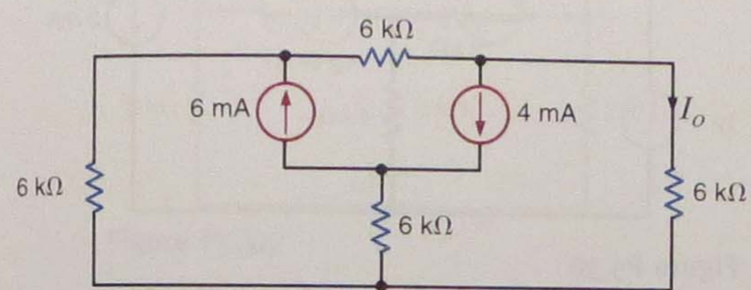

Figure P5.18

5.19 Use superposition to find V_o in the circuit in Fig. P5.19.

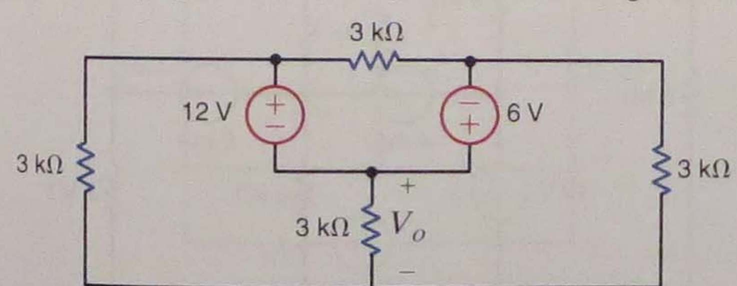

Figure P5.19

5.21 Use superposition to find I_o in the circuit in Fig. P5.21.

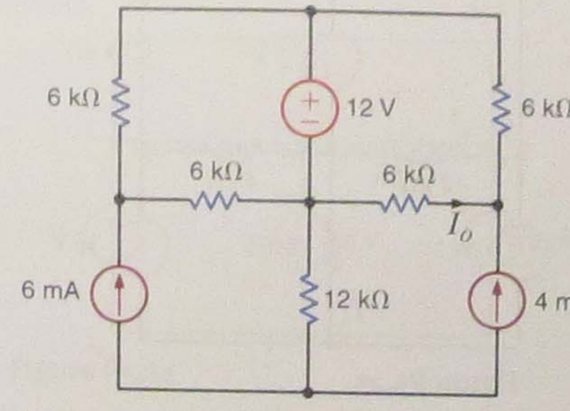

Figure P5.21

5.22 Use superposition to find I_o in the network in Fig. P5.22.

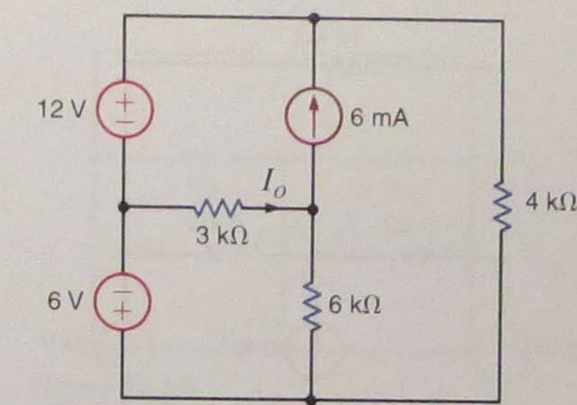

Figure P5.22

5.23 Use superposition to find V_o in the circuit in Fig. P5.23.

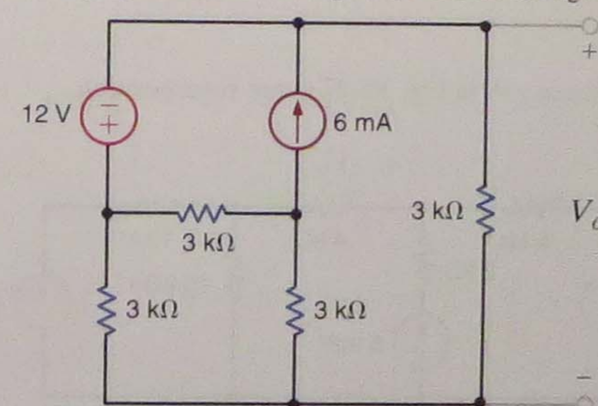

Figure P5.23

5.29 Use superposition to find I_o in the network in Fig. P5.29.

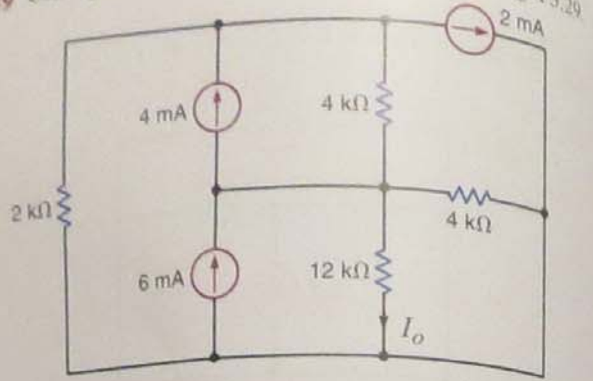

Figure P5.29

5.30 Use superposition to find I_o in the circuit in Fig. P5.30.

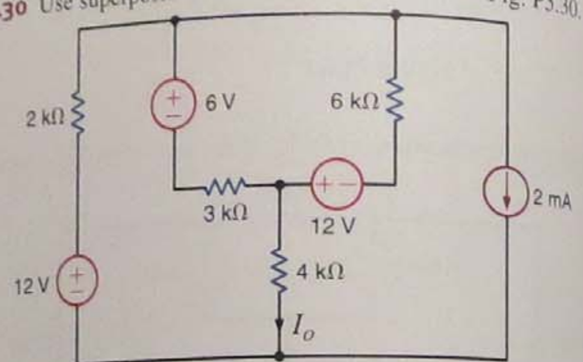

Figure P5.30

5.31 Use superposition to find I_o in the circuit in Fig. P5.31.

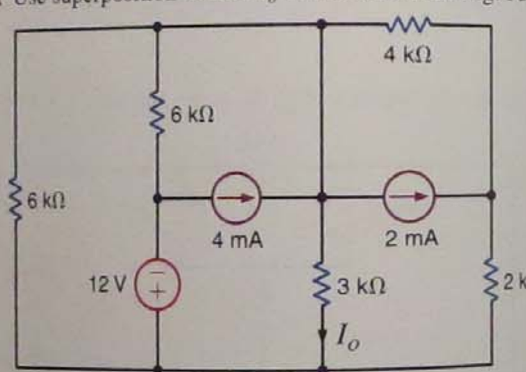

Figure P5.31

5.33 Use Thévenin's theorem to find I_o in the circuit using Fig. P5.33.

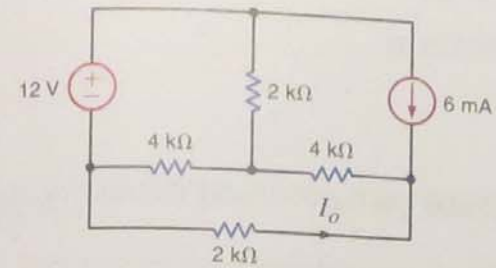

Figure P5.33

5.34 Use Thévenin's theorem to find V_o in the circuit using Fig. P5.34.

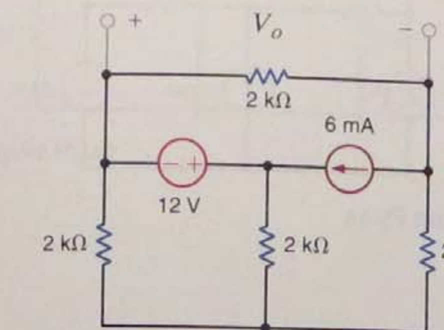

Figure P5.34

5.35 Use Thévenin's theorem to find V_o in the circuit in Fig. P5.35.

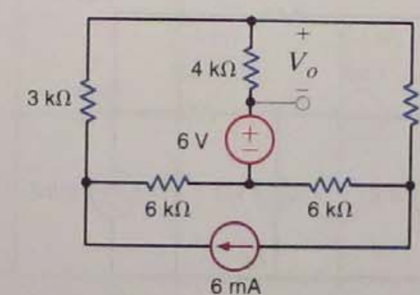

Figure P5.35

Figure P5.36

5.37 Find I_o in the network in Fig. P5.37 using Thevenin's theorem.

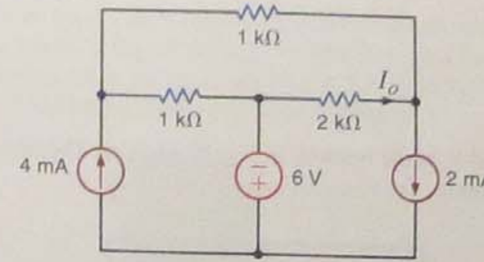

Figure P5.37

5.38 Find V_o in the circuit in Fig. P5.38 using Thévenin's theorem.

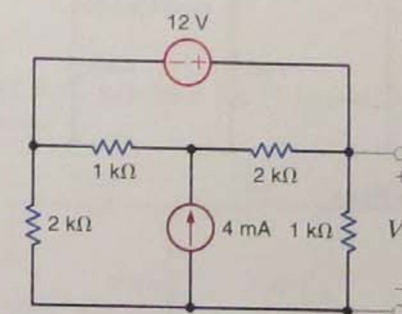

Figure P5.38

5.39 Find V_o in the circuit in Fig. P5.39 using Thévenin's theorem.

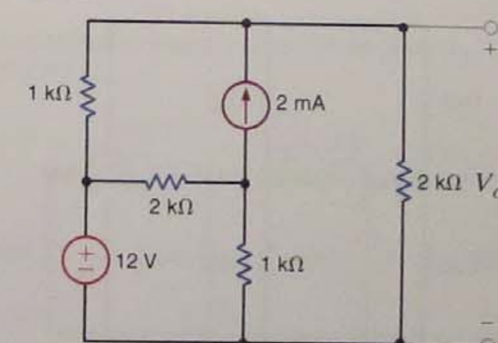

Figure P5.39

5.91 Find I_o in the circuit in Fig. P5.91 using source transformation.

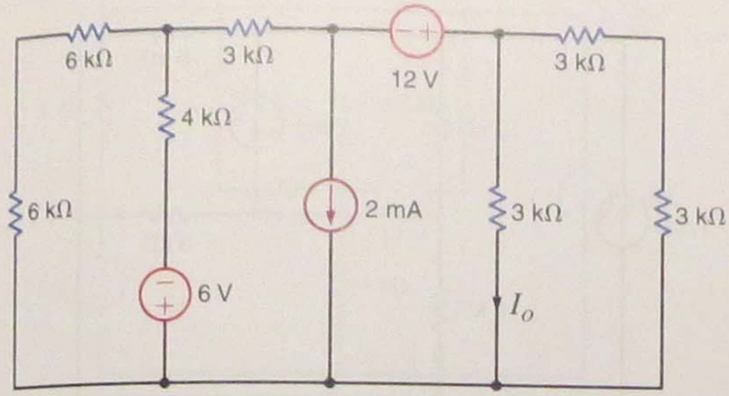

Figure P5.91

5.92 Use source exchange to find I_o in the network in Fig. P5.92.

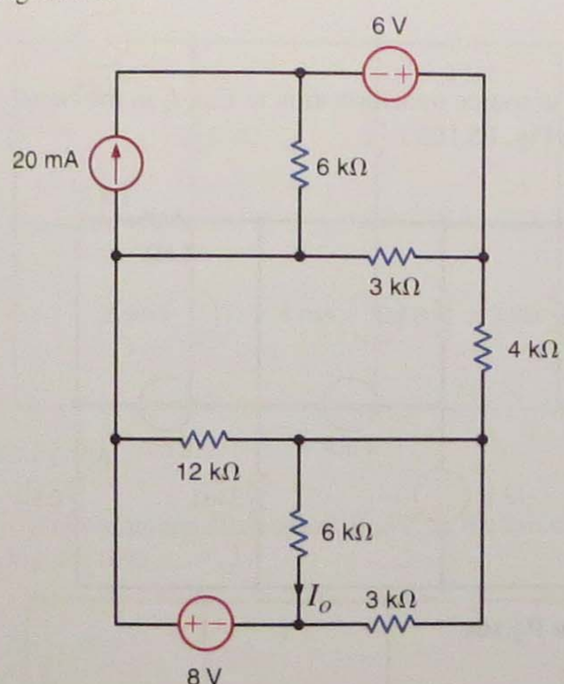

Figure P5.92

5.93 Use a combination of Y–Δ transformation source transformation to find I_o in the circuit in Fig. P5.93.

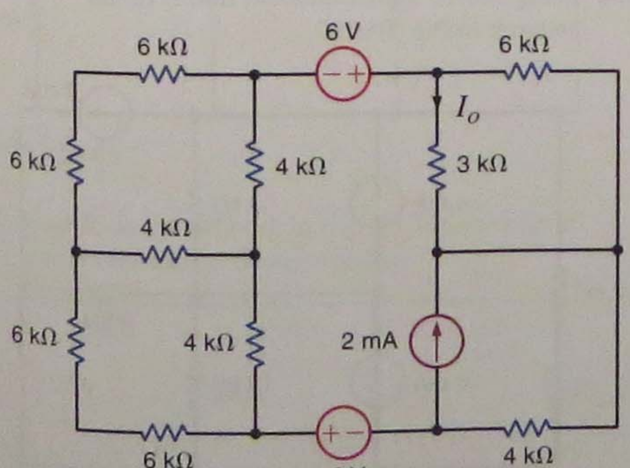

Figure P5.93

5.94 Find V_o in the network in Fig. P5.94 using source exchange.

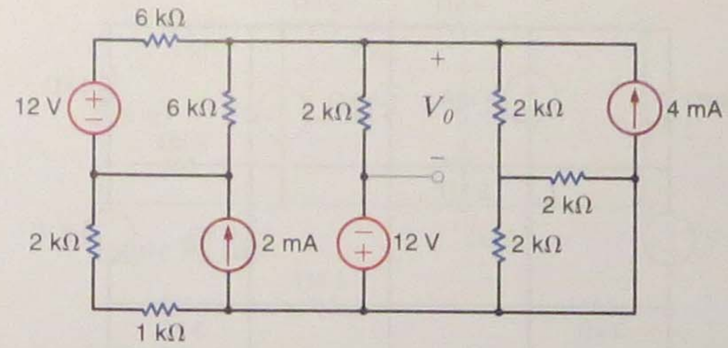

Figure P5.94

5.95 Use source exchange to find I_o in the circuit in Fig. P5.95.

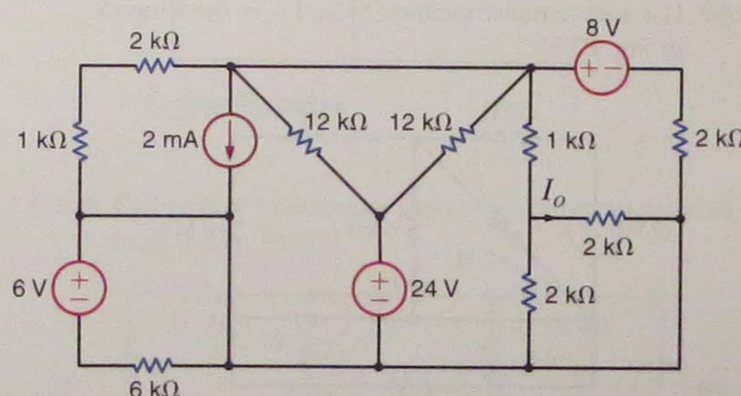

Figure P5.95

5.96 Use source exchange to find I_o in the network in Fig. P5.96.

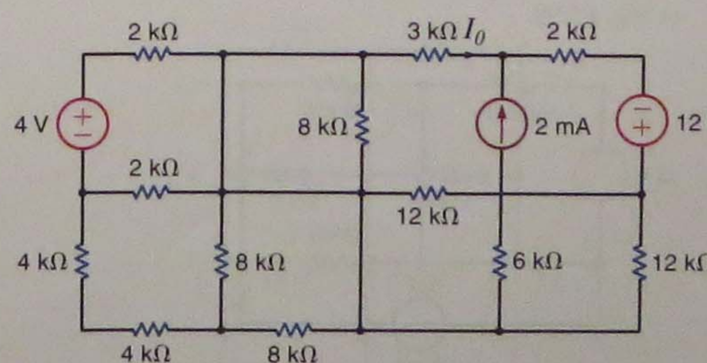

Figure P5.96

6.42 The inductor in Fig. P6.42a is 4.7 μH with a tolerance of 20%. Given the current waveform in Fig. 6.42b, graph the voltage $v(t)$ for the minimum and maximum inductor values.

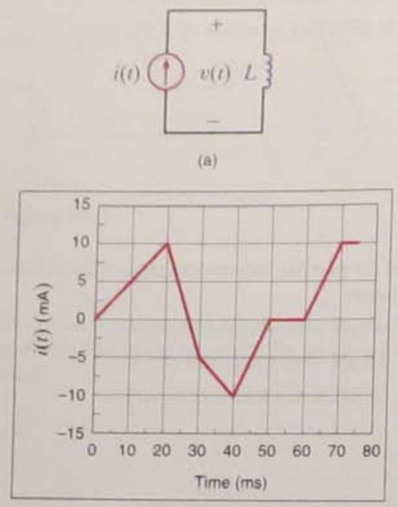

Figure P6.42

6.43 If the total energy stored in the circuit in Fig. P6.43 is 80 mJ, what is the value of L?

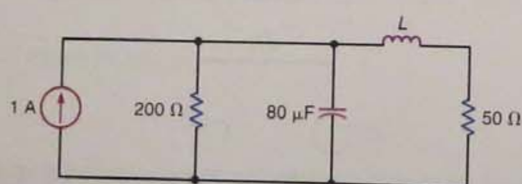

Figure P6.43

6.44 Find the value of C if the energy stored in the capacitor in Fig. P6.44 equals the energy stored in the inductor.

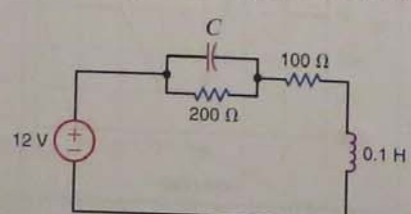

Figure P6.44

6.45 Given the network in Fig. P6.45, find the power dissipated in the 3-Ω resistor and the energy stored in the capacitor.

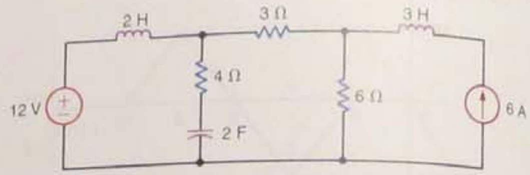

Figure P6.45

6.46 Calculate the energy stored in the inductor in the circuit shown in Fig. P6.46.

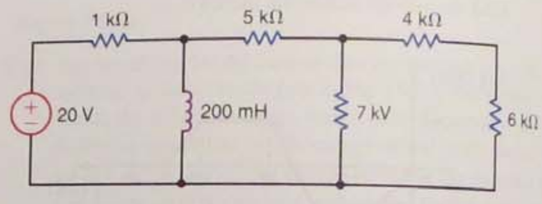

Figure P6.46

6.47 Calculate the energy stored in both the inductor and the capacitor shown in Fig. P6.47.

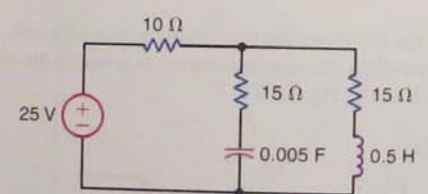

Figure P6.47

6.48 Given a 1-, 3-, and 4-μF capacitor, can they be interconnected to obtain an equivalent 2-μF capacitor?

6.49 Find the total capacitance C_T of the network in Fig. P6.49.

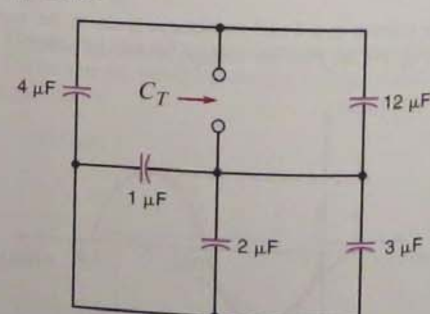

Figure P6.49

6.50 Find the total capacitance C_T of the network in Fig. P6.50.

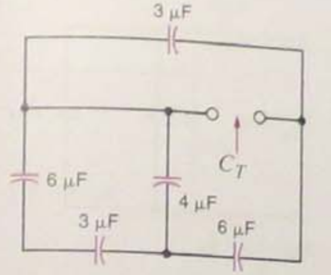

Figure P6.50

6.51 Find C_T in the network shown in Fig. P6.51.

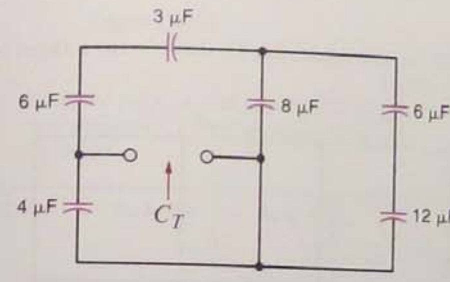

Figure P6.51

6.52 Find C_T in the circuit in Fig. P6.52.

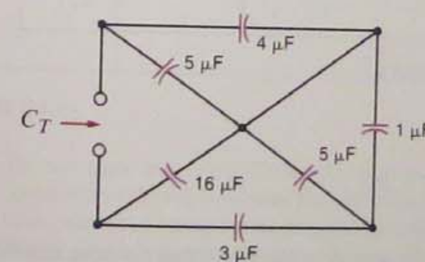

Figure P6.52

6.53 Determine the value of C_T in the circuit in Fig. P6.53.

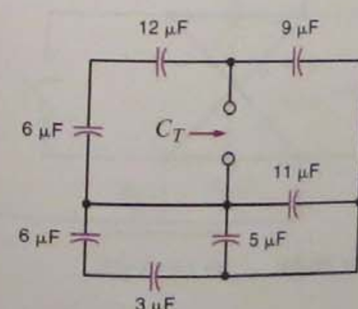

Figure P6.53

7.28 Find $i_o(t)$ for $t > 0$ in the circuit in Fig. P7.28.

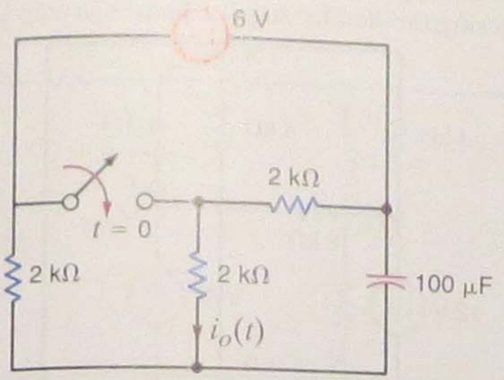

Figure P7.28

7.29 Find $i_o(t)$ for $t > 0$ in the circuit in Fig. P7.29.

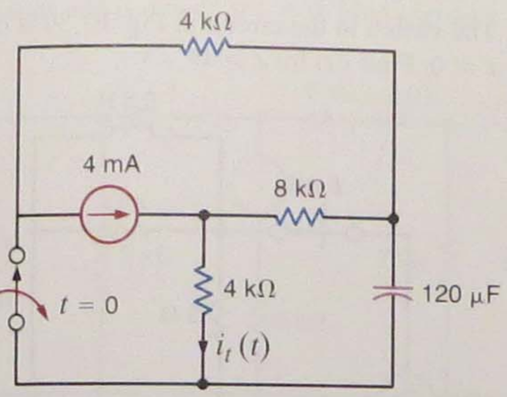

Figure P7.29

7.30 Find $i_o(t)$ for $t > 0$ in the network in Fig. P7.30.

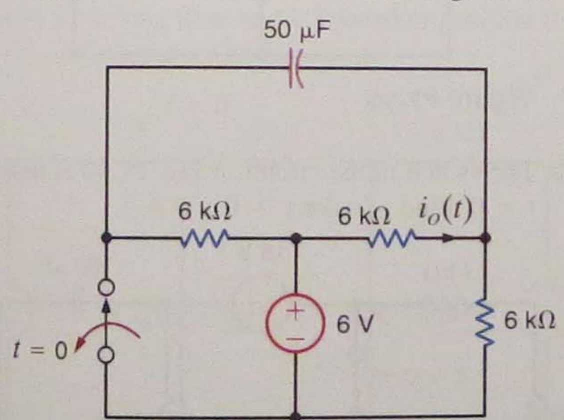

Figure P7.30

7.31 Find $i_o(t)$ for $t > 0$ in the circuit in Fig. P7.31.

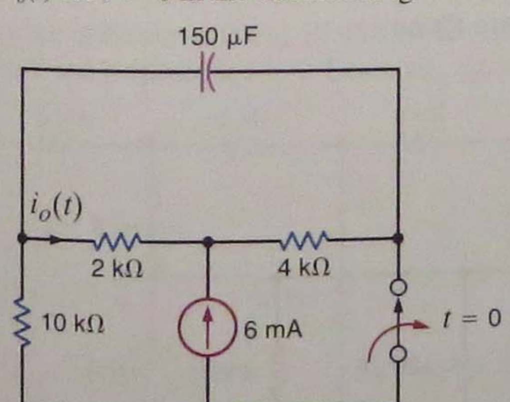

Figure P7.31

7.32 Use the step-by-step method to find $v_o(t)$ for $t > 0$ in the network in Fig. P7.32.

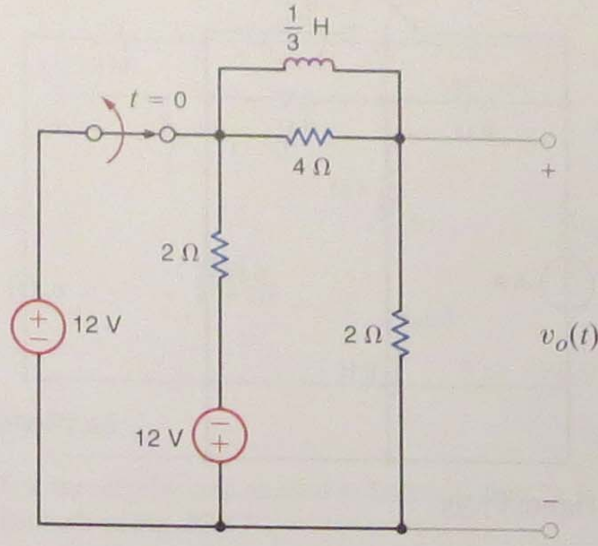

Figure P7.32

7.33 Find $v_c(t)$ for $t > 0$ in the network in Fig. P7.33 using the step-by-step method.

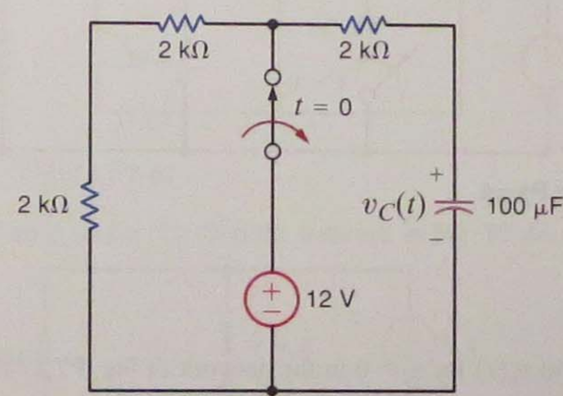

Figure P7.33

7.34 Find $v_o(t)$ for $t > 0$ in the network in Fig. P7.34 using the step-by-step method.

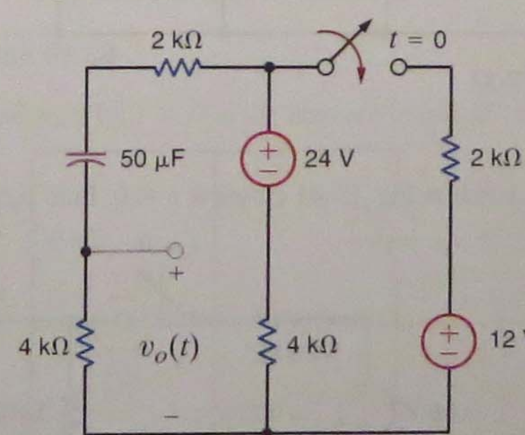

Figure P7.34

7.58 Find $i_o(t)$ for $t > 0$ in the network in Fig. P7.58.

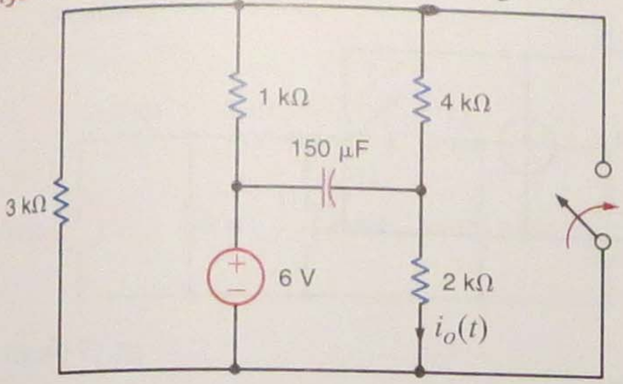

Figure P7.58

7.59 Find $v_C(t)$ for $t > 0$ in the circuit in Fig. P7.59 using the step-by-step method.

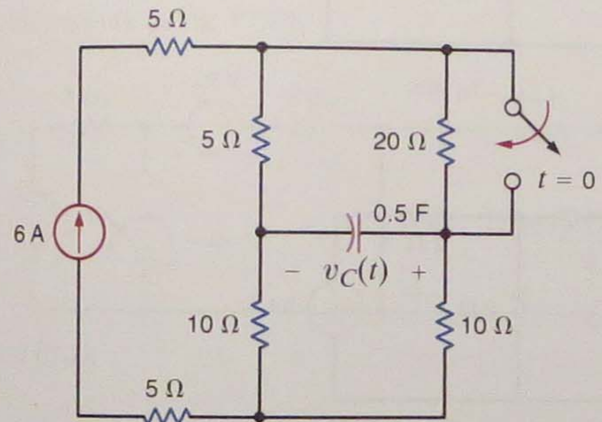

Figure P7.59

7.60 Find $i(t)$ for $t > 0$ in the circuit in Fig. P7.60 using the step-by-step method.

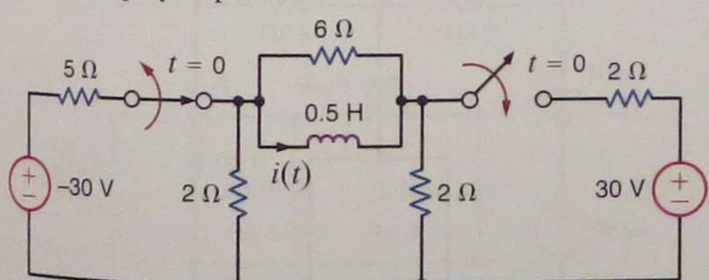

Figure P7.60

7.61 Find $i(t)$ for $t > 0$ in the circuit in Fig. P7.61 using the step-by-step method.

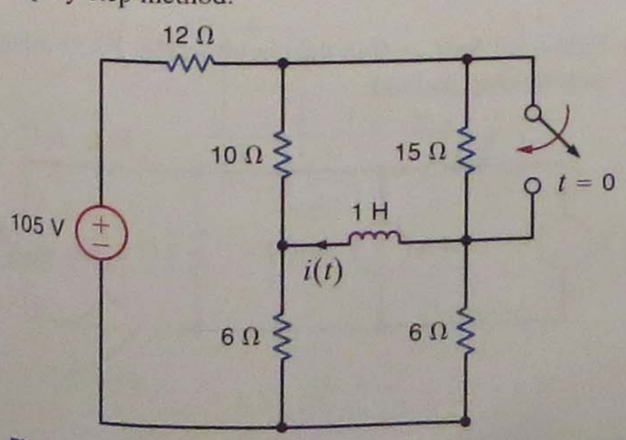

Figure P7.61

7.62 Find $v_o(t)$ for $t > 0$ in the circuit in Fig. P7.62.

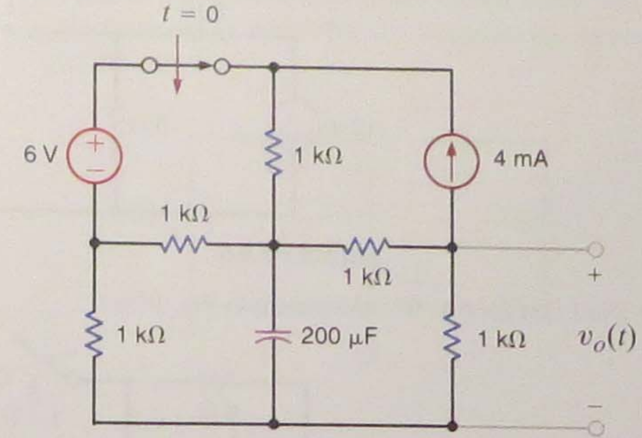

Figure P7.62

7.63 Find $i_o(t)$ for $t > 0$ in the network in Fig. P7.63.

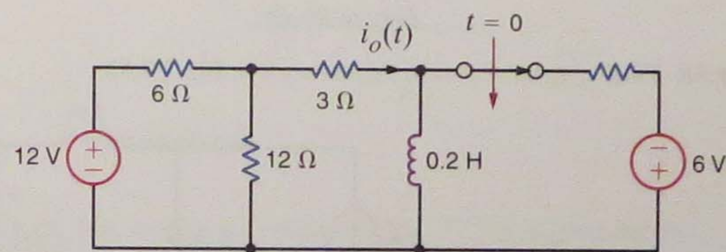

Figure P7.63

7.64 Find $v_o(t)$ for $t > 0$ in the circuit in Fig. P7.64.

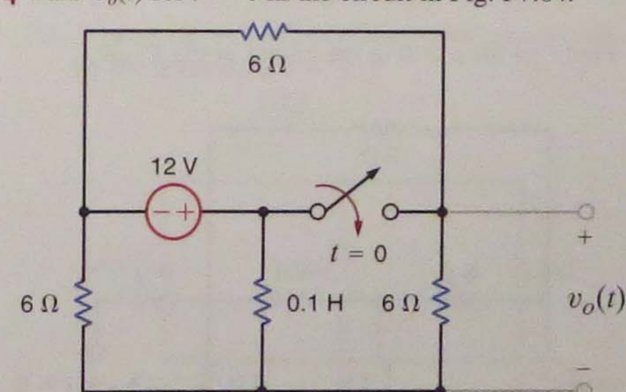

Figure P7.64

7.65 Find $i_o(t)$ for $t > 0$ in the circuit in Fig. P7.65.

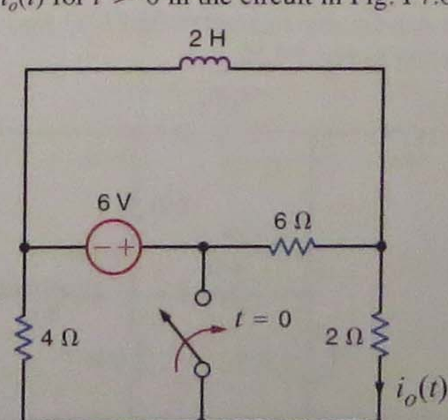

Figure P7.65

8.45 If $\mathbf{V}_1 = 4\angle 0^\circ$ V, find $\mathbf{I}_o$ in Fig. P8.45.

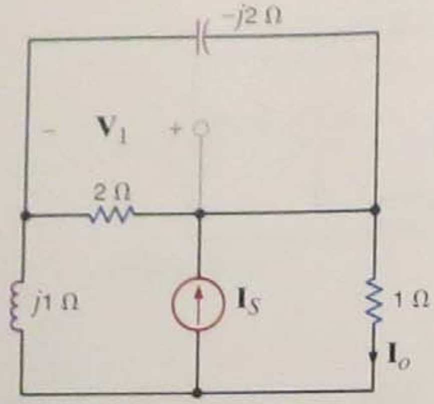

Figure P8.45

8.46 Find $\mathbf{V}_S$ in the network in Fig. P8.46, if $\mathbf{V}_1 = 4\angle 0^\circ$ V.

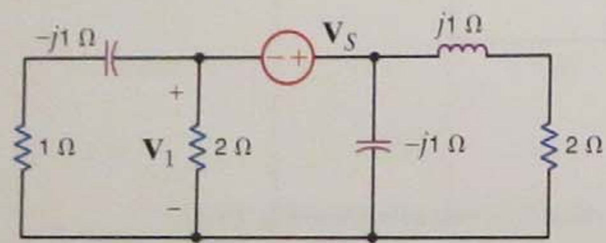

Figure P8.46

8.47 In the network in Fig. P8.47, $\mathbf{V}_o$ is known to be $4\angle 45^\circ$ V. Find **Z**.

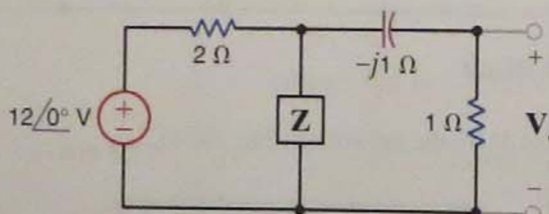

Figure P8.47

8.48 In the network in Fig. P8.48, $\mathbf{I}_o = 4\angle 0^\circ$ A. Find $\mathbf{I}_x$.

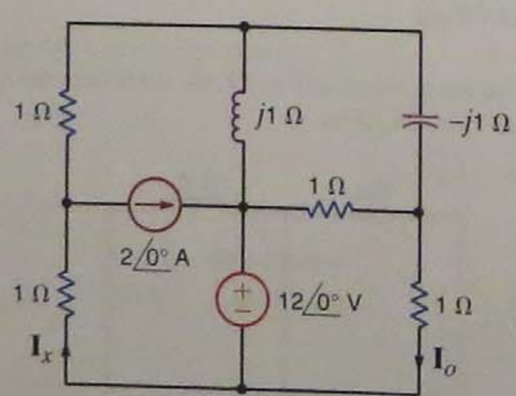

Figure P8.48

8.49 If $\mathbf{I}_o = 4\angle 0^\circ$ A in the circuit in Fig. P8.49, find $\mathbf{I}_x$.

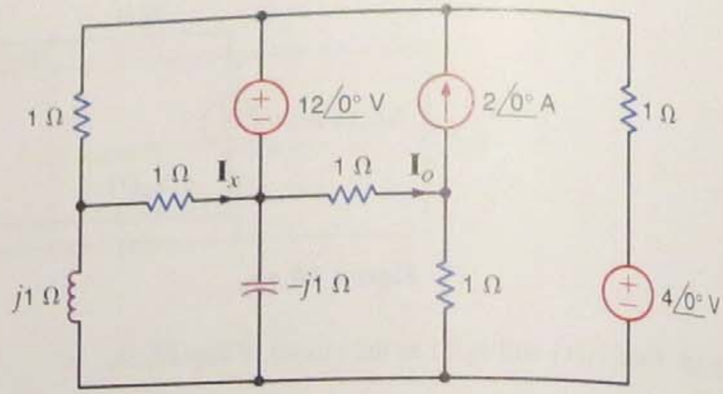

Figure P8.49

8.50 If $\mathbf{I}_o = 4\angle 0^\circ$ A in the network in Fig. P8.50, find $\mathbf{I}_x$.

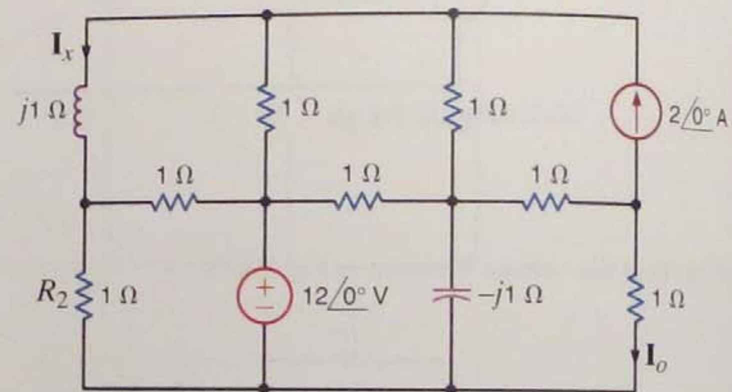

Figure P8.50

8.51 Using nodal analysis, find $\mathbf{I}_o$ in the circuit in Fig. P8.51.

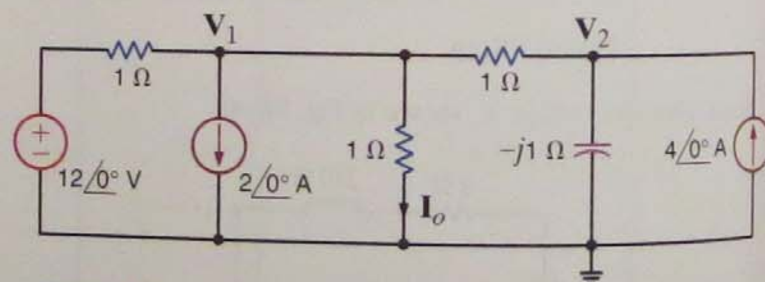

Figure P8.51

8.52 Use nodal analysis to find $\mathbf{I}_o$ in the circuit in Fig. P8.52.

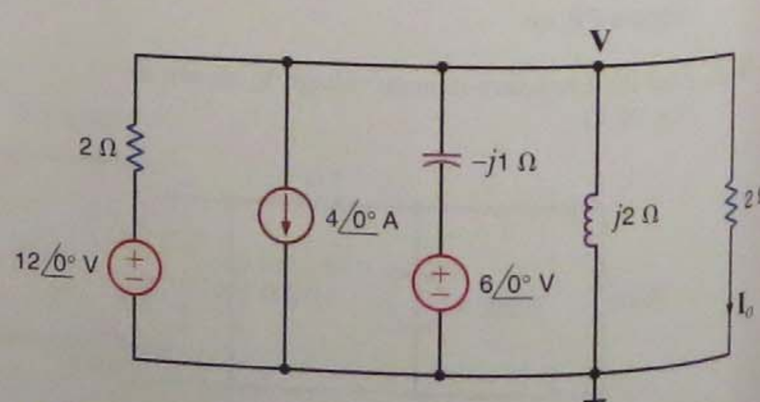

Figure P8.52

8.133 Find $\mathbf{I}_o$ in the network in Fig. P8.133.

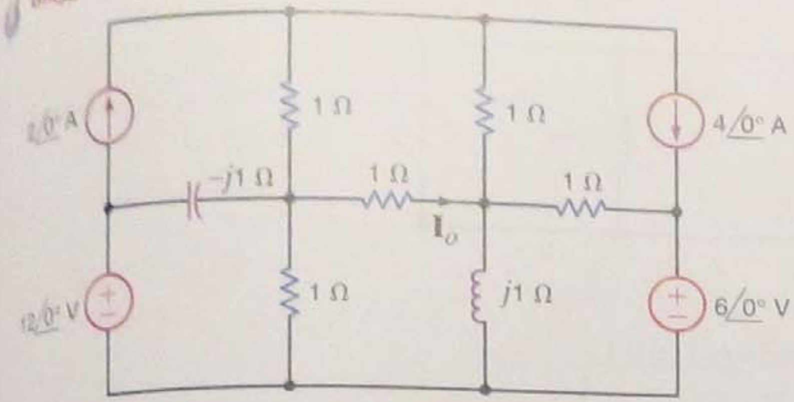

Figure P8.133

8.134 Use both nodal analysis and loop analysis to find $\mathbf{I}_o$ in the network in Fig. P8.134.

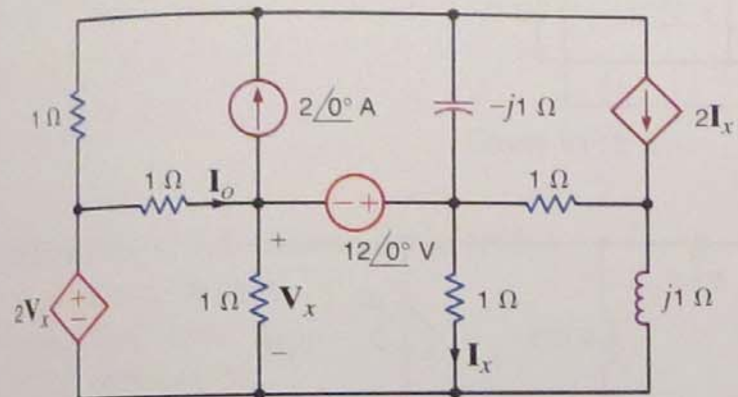

Figure P8.134

8.135 Given the circuit in Fig. P8.135, at what frequency are the magnitudes of $i_C(t)$ and $i_L(t)$ equal?

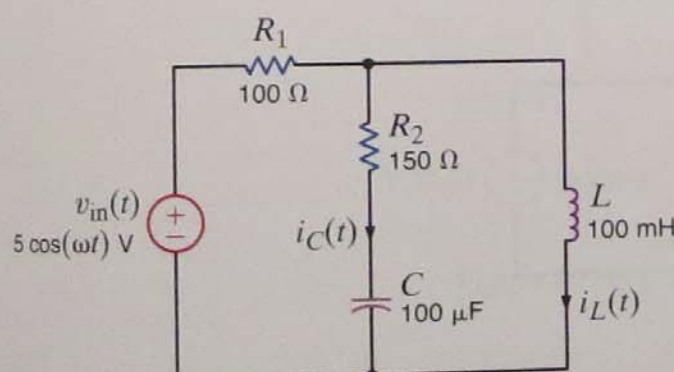

Figure P8.135

8.137 The network in Fig. P8.137 operates at $f = 60$ Hz. Find the voltage $\mathbf{V}_o$.

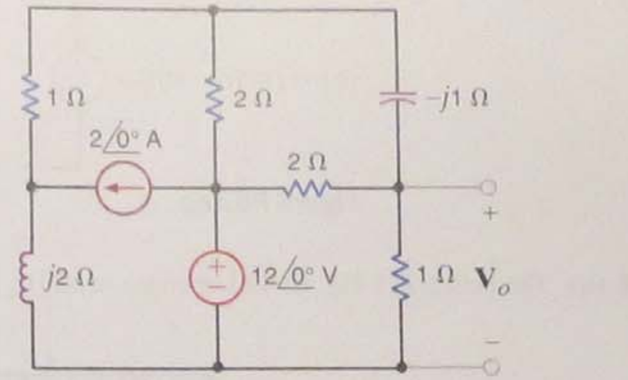

Figure P8.137

8.138 Find $\mathbf{I}_o$ in the network in Fig. P8.138.

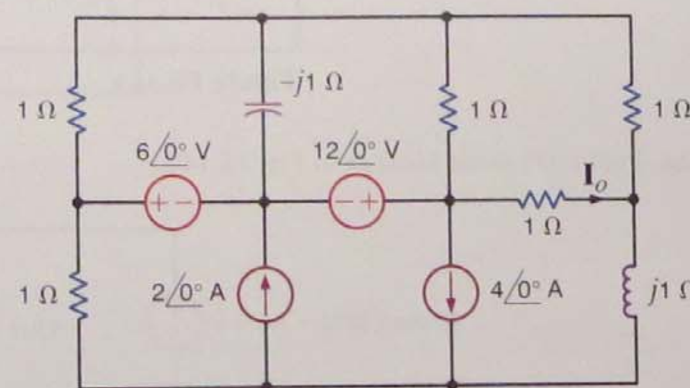

Figure P8.138

8.139 Find $\mathbf{I}_o$ in the network in Fig. P8.139.

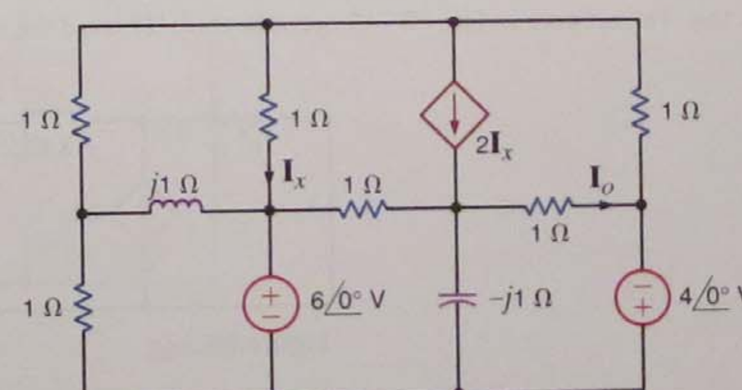

Figure P8.139

12.52 The source in the network in Fig. P12.52 is $i_S(t) = \cos 1000t + \cos 1500t$ A. $R = 200\ \Omega$ and $C = 500\ \mu F$. If $\omega_0 = 1000$ rad/s, find L, Q, and the BW. Compute the output voltage $v_o(t)$ and discuss the magnitude of the output voltage at the two input frequencies.

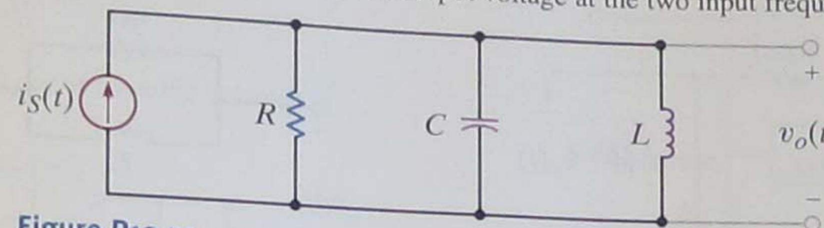

Figure P12.52

12.53 Consider the network in Fig. P12.53. If $R = 1\ k\Omega$, $L = 20$ mH, $C = 50\ \mu F$, and $R_S = \infty$, determine the resonant frequency ω_0 the Q of the network, and the bandwidth of the network. What impact does an R_S of 10 kΩ have on the quantities determined?

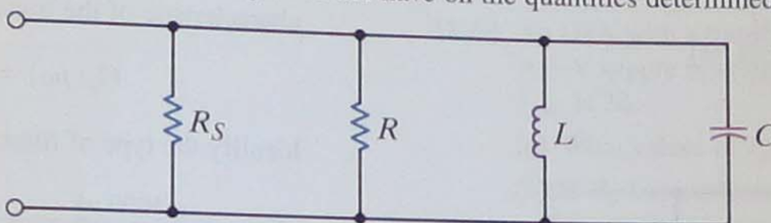

Figure P12.53

12.54 Determine the value of C in the network shown in Fig. P12.54 for the circuit to be in resonance.

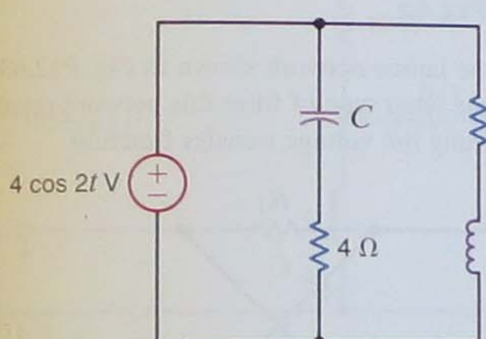

Figure P12.54

12.55 Determine the equation for the nonzero resonant frequency of the impedance shown in Fig. P12.55.

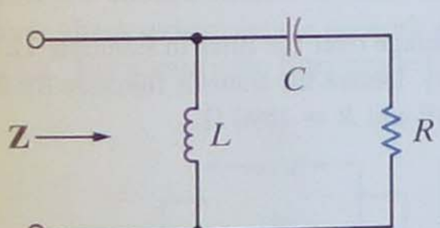

Figure P12.55

12.56 Determine the new parameters of the network in Fig. P12.56 if $\omega_{new} = 10^4 \omega_{old}$.

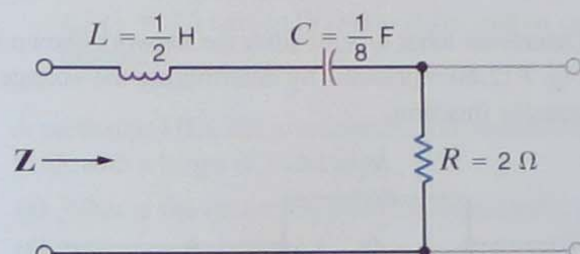

Figure P12.56

12.57 Determine the new parameters of the network shown in Fig. P12.57 if $\mathbf{Z}_{new} = 10^4 \mathbf{Z}_{old}$.

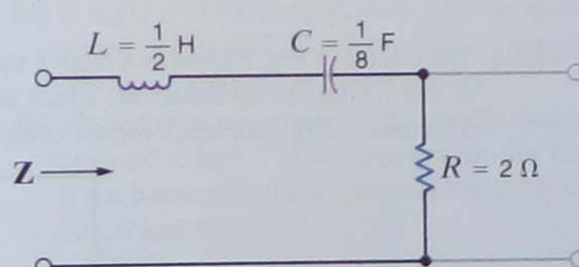

Figure P12.57

12.26 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$\mathbf{H}(j\omega) = \frac{+6.4(j\omega)}{(j\omega + 1)(-\omega^2 + 8j\omega + 64)}$$

12.27 Find $\mathbf{H}(j\omega)$ if its magnitude characteristic is shown in Fig. P12.27.

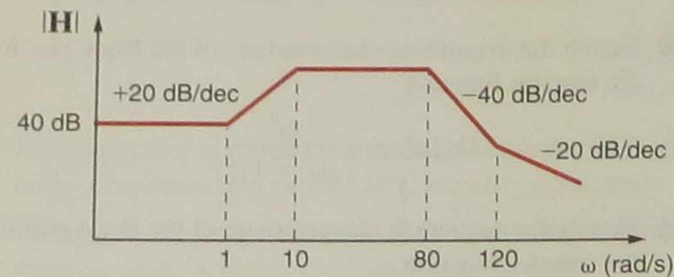

Figure P12.27

12.28 Determine $\mathbf{H}(j\omega)$ from the magnitude characteristic shown in Fig. P12.28.

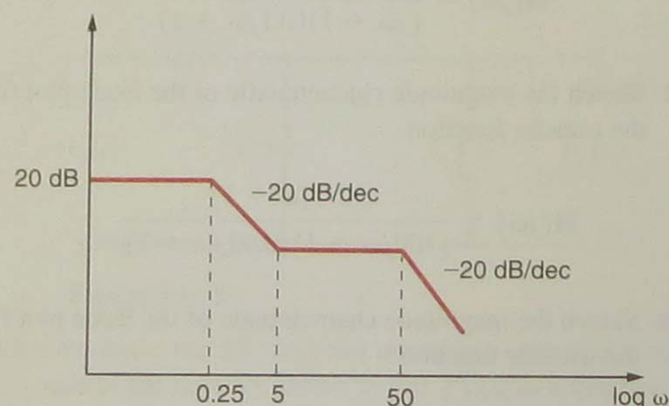

Figure P12.28

12.29 Determine $\mathbf{H}(j\omega)$ from the magnitude characteristic of the Bode plot shown in Fig. P12.29.

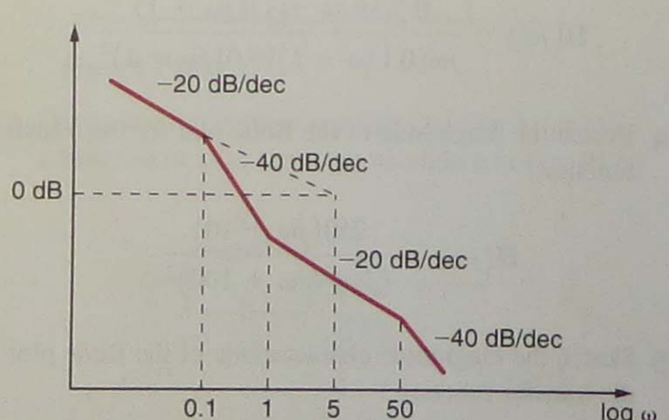

Figure P12.29

12.30 Determine $\mathbf{H}(j\omega)$ from the magnitude characteristic of the Bode plot shown in Fig. P12.30.

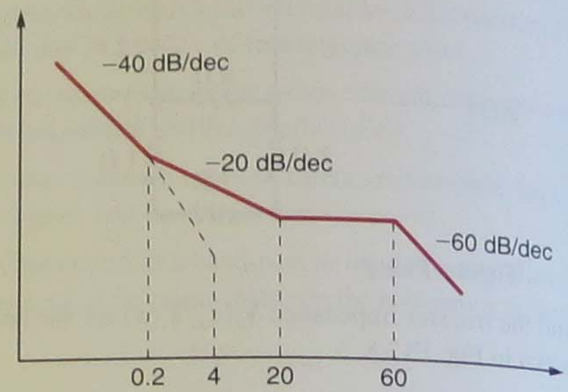

Figure P12.30

12.31 The magnitude characteristic of a band-elimination filter is shown in Fig. P12.31. Determine $\mathbf{H}(j\omega)$.

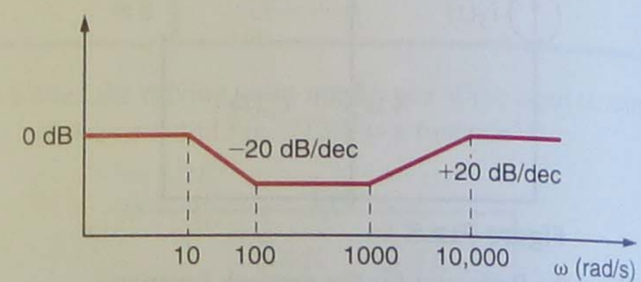

Figure P12.31

12.32 Given the magnitude characteristic in Fig. P12.32, find $\mathbf{H}(j\omega)$.

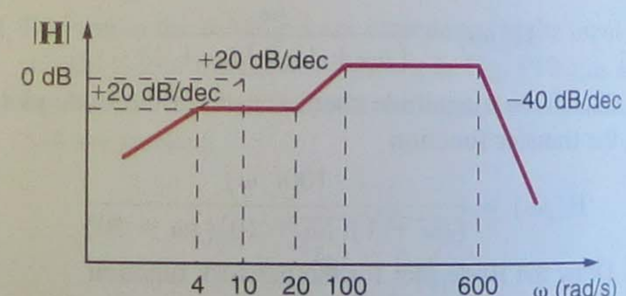

Figure P12.32

12.33 Find $\mathbf{H}(j\omega)$ if its magnitude characteristic is shown in Fig. P12.33.

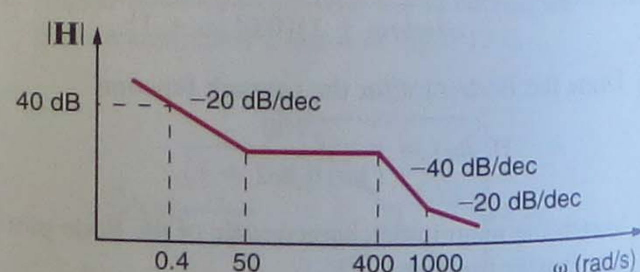

Figure P12.33

13.54 The switch in the circuit in Fig. P13.54 opens at $t = 0$. Find $i(t)$ for $t > 0$ using Laplace transforms.

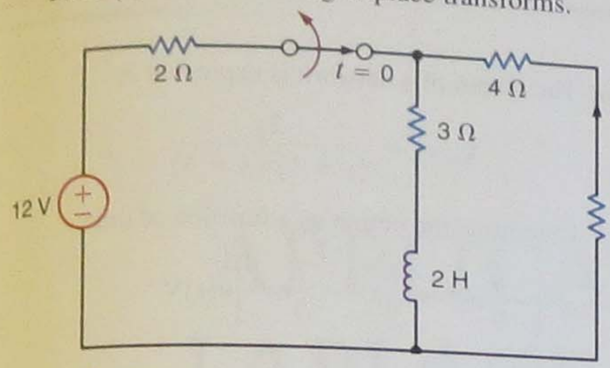

Figure P13.54

13.55 The switch in the circuit in Fig. P13.55 has been closed for a long time and is opened at $t = 0$. Find $i(t)$ for $t > 0$ using Laplace transforms.

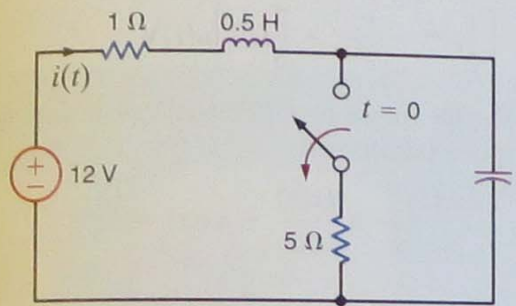

Figure P13.55

13.56 In the network in Fig. P13.56, the switch opens at $t = 0$. Use Laplace transforms to find $i_L(t)$ for $t > 0$.

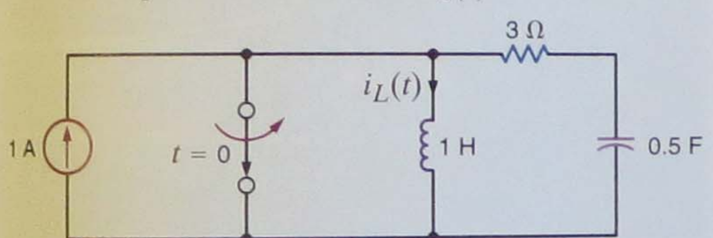

Figure P13.56

13.57 The switch in the circuit in Fig. P13.57 has been closed for a long time and is opened at $t = 0$. Find $i(t)$ for $t > 0$, using Laplace transforms.

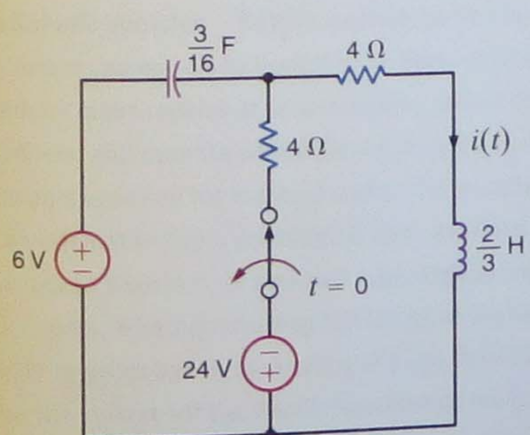

Figure P13.57

13.58 The switch in the circuit in Fig. P13.58 has been closed for a long time and is opened at $t = 0$. Find $i(t)$ for $t > 0$ using Laplace transforms.

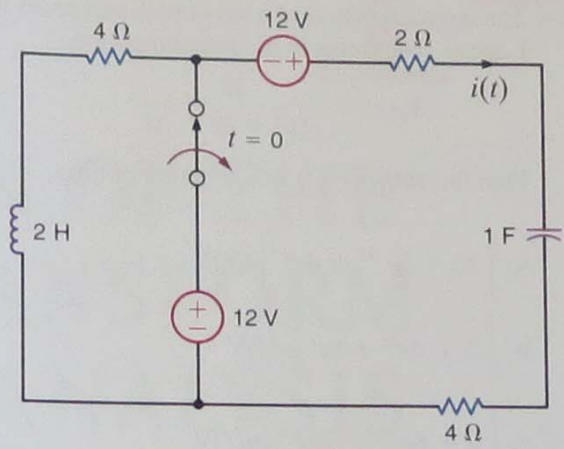

Figure P13.58

13.59 The switch in the circuit in Fig. P13.59 has been closed for a long time and is opened at $t = 0$. Find $i(t)$ for $t > 0$ using Laplace transforms.

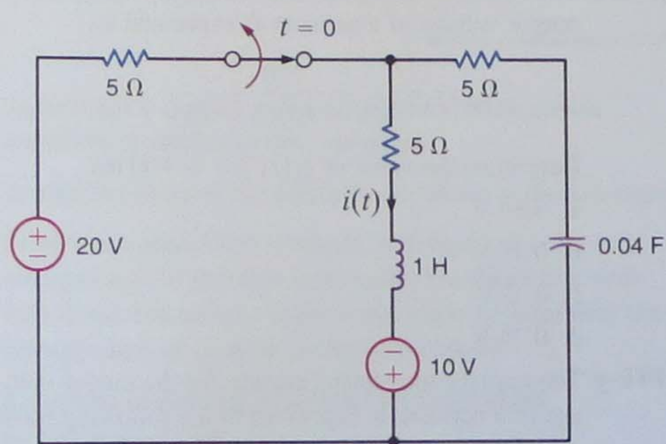

Figure P13.59

13.60 In the circuit shown in Fig. P13.60, switch action occurs at $t = 0$. Determine the voltage $v_o(t)$, $t > 0$ using Laplace transforms.

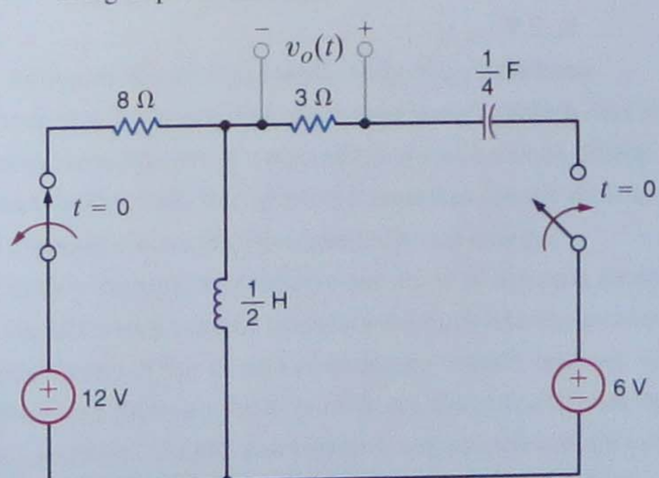

Figure P13.60

13.28 Given the following functions $\mathbf{F}(s)$, find $f(t)$.

(a) $\mathbf{F}(s) = \dfrac{s(s+6)}{(s+3)(s^2+6s+18)}$

(b) $\mathbf{F}(s) = \dfrac{(s+4)(s+8)}{s(s^2+8s+32)}$

13.29 Given the following functions $\mathbf{F}(s)$, find $f(t)$.

(a) $\mathbf{F}(s) = \dfrac{(s+1)(s+3)}{(s+2)(s^2+2s+2)}$

(b) $\mathbf{F}(s) = \dfrac{(s+2)^2}{s^2+4s+5}$

13.30 Given the following functions $\mathbf{F}(s)$, find $f(t)$.

(a) $\mathbf{F}(s) = \dfrac{6s+12}{(s^2+4s+5)(s^2+4s+8)}$

(b) $\mathbf{F}(s) = \dfrac{s(s+2)}{s^2+2s+2}$

13.31 Find the inverse Laplace transform of the following functions.

(a) $\mathbf{F}(s) = \dfrac{e^{-s}}{s+1}$

(b) $\mathbf{F}(s) = \dfrac{1-e^{-2s}}{s}$

(c) $\mathbf{F}(s) = \dfrac{1-e^{-s}}{s+2}$

13.32 Find $f(t)$ if $\mathbf{F}(s)$ is given by the following functions:

(a) $\mathbf{F}(s) = \dfrac{2(s+1)e^{-s}}{(s+2)(s+4)}$

(b) $\mathbf{F}(s) = \dfrac{10(s+2)e^{-2s}}{(s+1)(s+4)}$

(c) $\mathbf{F}(s) = \dfrac{se^{-s}}{(s+4)(s+8)}$

13.33 Find the inverse Laplace transform of the following functions.

(a) $\mathbf{F}(s) = \dfrac{(s+2)e^{-s}}{s(s+2)}$

(b) $\mathbf{F}(s) = \dfrac{e^{-10s}}{(s+2)(s+3)}$

(c) $\mathbf{F}(s) = \dfrac{(s^2+2s+1)e^{-2s}}{s(s+1)(s+2)}$

(d) $\mathbf{F}(s) = \dfrac{(s+1)e^{-4s}}{s^2(s+2)}$

13.34 Find $f(t)$ if $\mathbf{F}(s)$ is given by the following function:

$$\mathbf{F}(s) = \frac{(s+1)e^{-s}}{s(s+2)(s^2+2s+2)}$$

13.35 Find the inverse Laplace transform of the function

$$\mathbf{F}(s) = \frac{10s(s+2)e^{-4s}}{(s+1)^2(s^2+2s+2)}$$

13.36 Find $f(t)$ if $\mathbf{F}(s)$ is given by the expression

$$\mathbf{F}(s) = \frac{s^2e^{-2s}}{(s^2+1)(s+1)(S^2+2s-2)}$$

13.37 Solve the following differential equations using Laplace transforms.

(a) $\dfrac{dx(t)}{dt} + 4x(t) = e^{-2t}, \quad x(0) = 1$

(b) $\dfrac{dx(t)}{dt} + 6x(t) = 4u(t), \quad x(0) = 2$

13.38 Solve the following differential equations using Laplace transforms.

(a) $\dfrac{d^2y(t)}{dt^2} + \dfrac{2dy(t)}{dt} + y(t) = e^{-2t}, y(0) = y'(0) = 0$

(b) $\dfrac{d^2y(t)}{dt^2} + \dfrac{4y(t)}{dt} + 4y(t) = u(t), y(0) = 0, y'(0) = 1$

13.39 Solve the following integrodifferential equation using Laplace transforms.

$$\frac{dy(t)}{dt} + 2y(t) + \int_o^t y(\lambda)d\lambda = 1 - e^{-2t}, \quad y(0) = 0, \quad t > 0$$

13.40 Use Laplace transforms to find $y(t)$ if

$$\frac{dy(t)}{dt} + 3y(t) + 2\int_o^t y(x)dx = u(t), \quad y(0) = 0, \quad t > 0.$$

13.41 Use Laplace transforms to solve the following integro-differential equation.

$$\frac{dy(t)}{dt} + 2y(t) + \int_o^t y(\lambda)e^{-2(t-\lambda)}d\lambda = 4u(t),$$

$$y(0) = 1, \quad t > 0$$

13.42 Find $f(t)$ using convolution if $\mathbf{F}(s)$ is

$$\mathbf{F}(s) = \frac{1}{(s+1)(s+2)}$$

13.43 Use convolution if $f(t)$ if

$$\mathbf{F}(s) = \frac{1}{(s+1)(s+2)^2}$$

14.20 Use superposition to find $v_o(t)$, $t > 0$, in the network shown in Fig. P14.20.

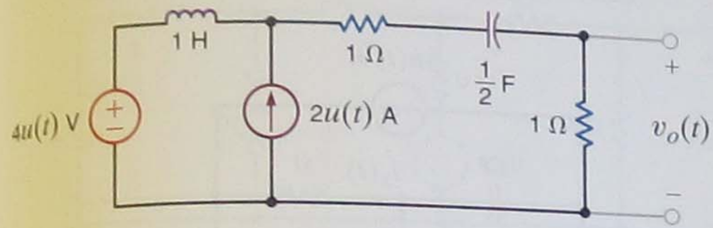

Figure P14.20

14.21 Use superposition to find $v_o(t)$, $t > 0$, in the network in Fig. P14.21.

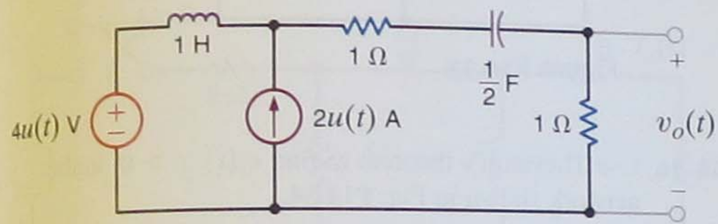

Figure P14.21

14.22 Use superposition to find $v_o(t)$, $t > 0$, in the network in Fig. P14.22.

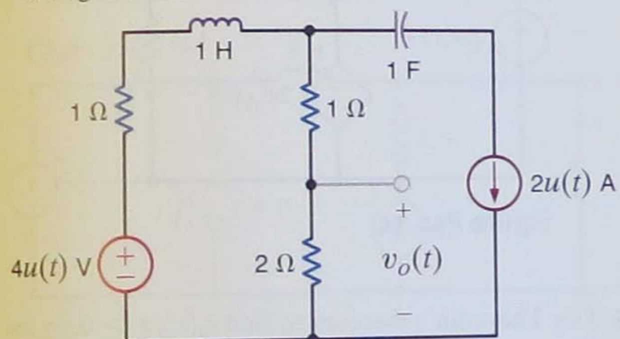

Figure P14.22

14.23 Use source transformation to find $v_o(t)$, $t > 0$, in the circuit in Fig. P14.23.

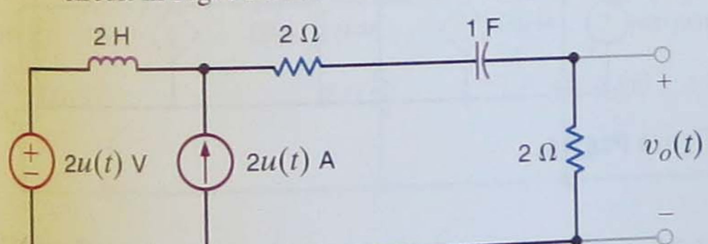

Figure P14.23

14.24 Use source transformation to solve Problem 14.21.

14.25 Use Thévenin's theorem to find $v_o(t)$, $t > 0$, in Fig. P14.25.

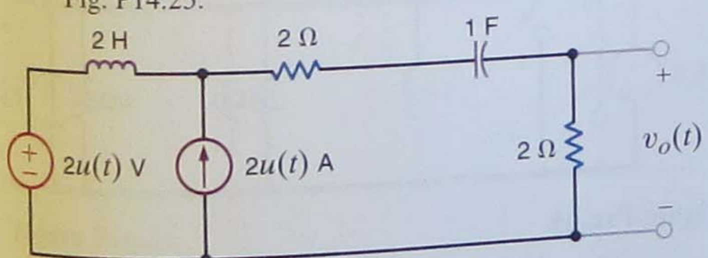

Figure P14.25

14.26 Use Thévenin's theorem to find $v_o(t)$, $t > 0$, in Fig. P14.26.

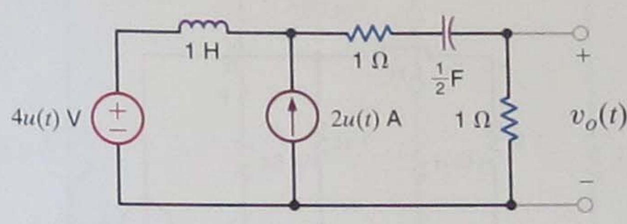

Figure P14.26

14.27 Use Thévenin's theorem to find $i_o(t)$, $t > 0$, in Fig. P14.27.

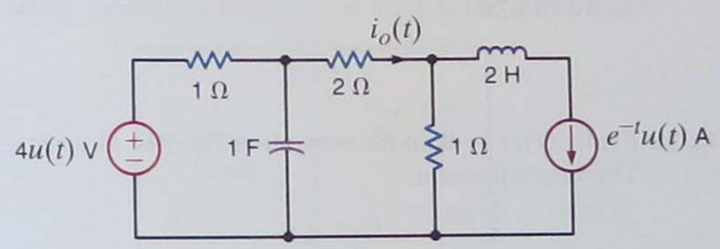

Figure P14.27

14.28 Use Thévenin's theorem to find $i_o(t)$, $t > 0$, in Fig. P14.28.

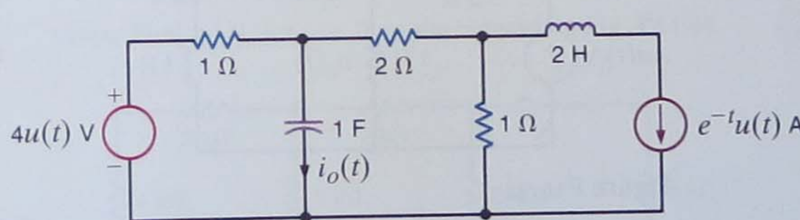

Figure P14.28

14.29 Use Thévenin's theorem to determine $i_o(t)$, $t > 0$, in the circuit shown in Fig. P14.29.

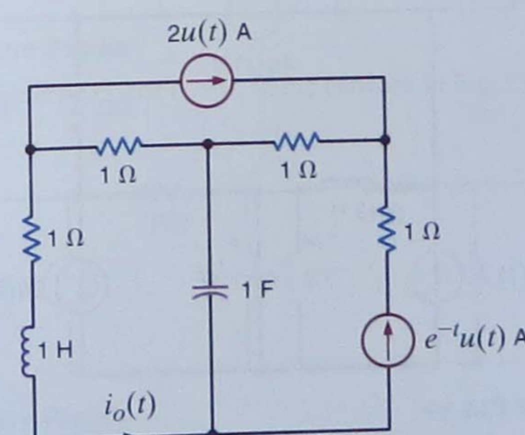

Figure P14.29

14.12 For the network shown in Fig. P14.12, find $v_o(t)$, $t > 0$, using loop equations.

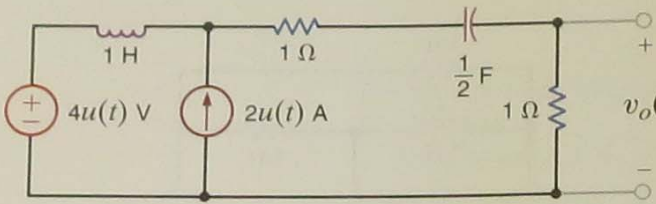

Figure P14.12

14.13 For the network shown in Fig. P14.13, find $v_o(t)$, $t > 0$, using mesh equations.

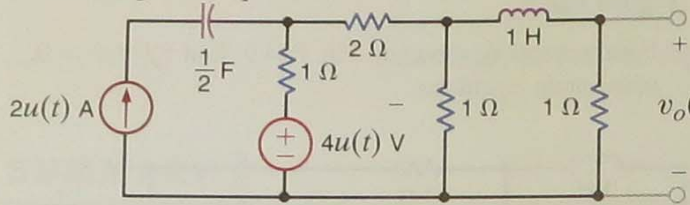

Figure P14.13

14.14 Use loop equations to find $i_o(t)$, $t > 0$, in the network shown in Fig. P14.14.

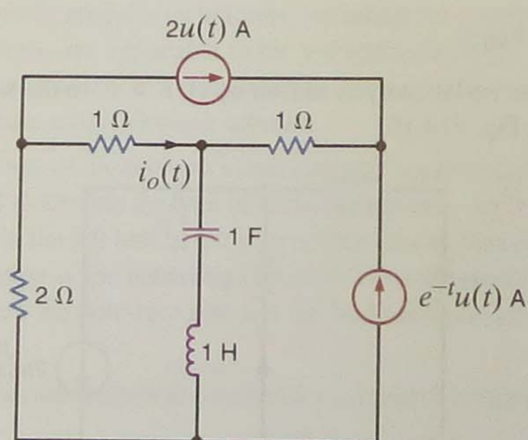

Figure P14.14

14.15 Given the network in Fig. P14.15, find $i_o(t)$ $t > 0$, using mesh equations.

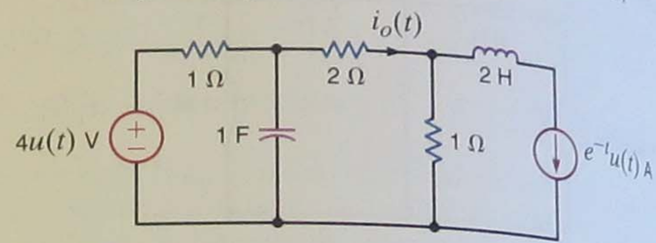

Figure P14.15

14.16 Use mesh analysis to find $v_o(t)$, $t > 0$, in the network in Fig. P14.16.

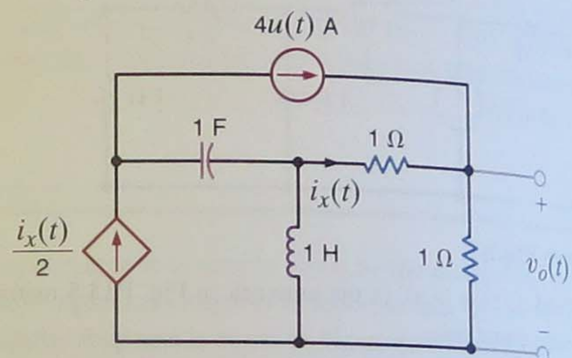

Figure P14.16

14.17 Use loop analysis to find $v_o(t)$ for $t > 0$ in the network in Fig. P14.17.

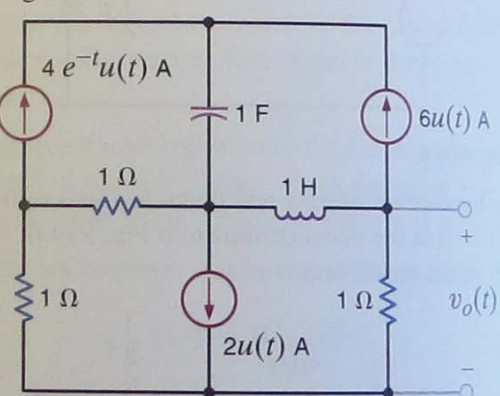

Figure P14.17

14.18 Use mesh analysis to find $v_o(t)$, for $t > 0$ in the network in Fig. P14.18.

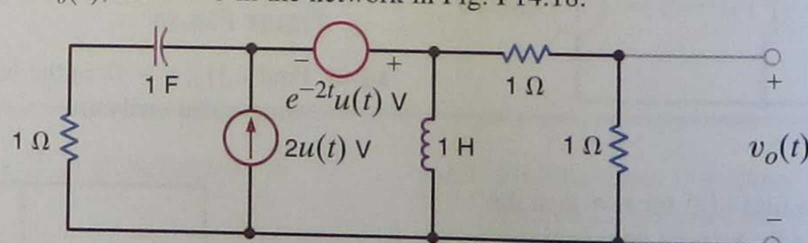

Figure P14.18

14.19 Use mesh analysis to find $v_o(t)$, for $t > 0$ in the network in Fig. P14.19.

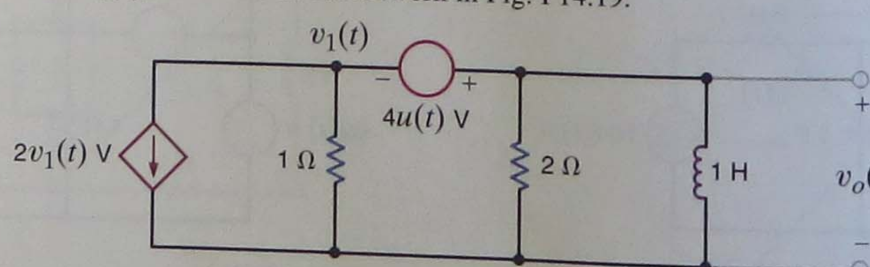

Figure P14.19