Chapter 6, Problem 46.

Find v_C, i_L, and the energy stored in the capacitor and inductor in the circuit of Fig. 6.69 under dc, steady-state, conditions.

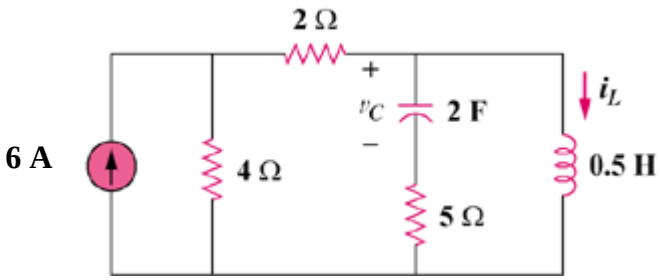

Figure 6.69

Chapter 6, Problem 49.

Find the equivalent inductance of the circuit in Fig. 6.72. Assume all inductors are 10 mH.

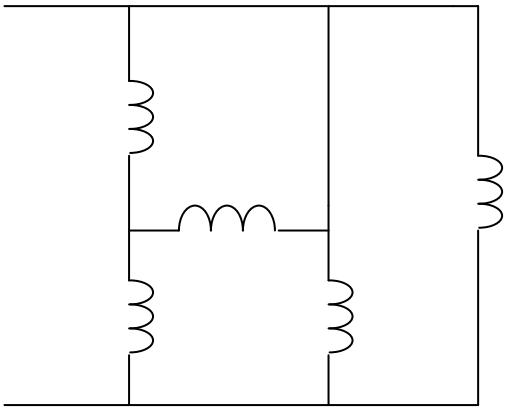

Figure 6.72 For Prob. 6.49.

Chapter 6, Problem 56.

Find L_{eq} in the circuit in Fig. 6.78.

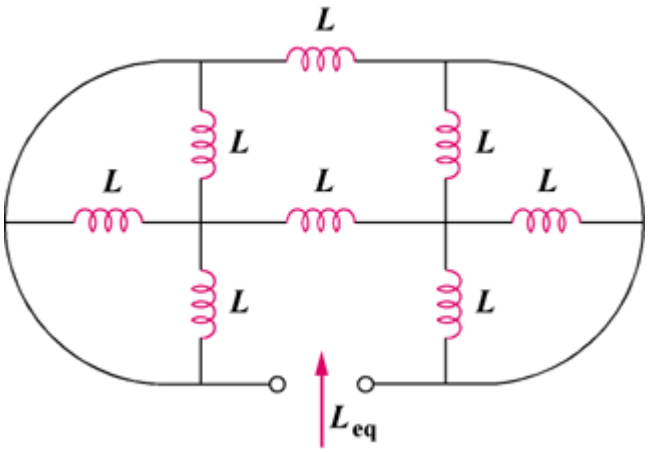

Figure 6.78

Chapter 6, Problem 71.

Show how you would use a single op amp to generate

$$v_0 = -\int \left(v_1 + 4v_2 + 10v_3\right) dt$$

If the integrating capacitor is $\boldsymbol{C}$ = 2 μF, obtain other component values.

Chapter 6, Problem 73.

Show that the circuit in Fig. 6.90 is a noninverting integrator.

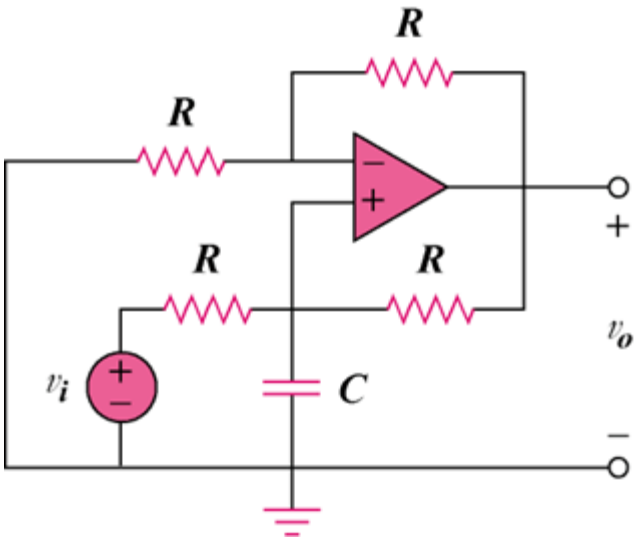

Figure 6.90

Chapter 7, Problem 1.

In the circuit shown in Fig. 7.81

$v(t)=56e^{-200t}$ V, $t>0$

$i(t)=8e^{-200t}$ mA, $t>0$

(a) Find the values of R and C.

(b) Calculate the time constant τ

(c) Determine the time required for the voltage to decay half its initial at t=0.

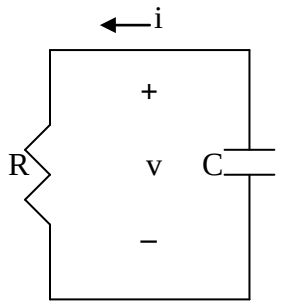

Figure 7.81 For Prob. 7.1.

Chapter 7, Problem 2.

Find the time constant for the *RC* circuit in Fig. 7.82.

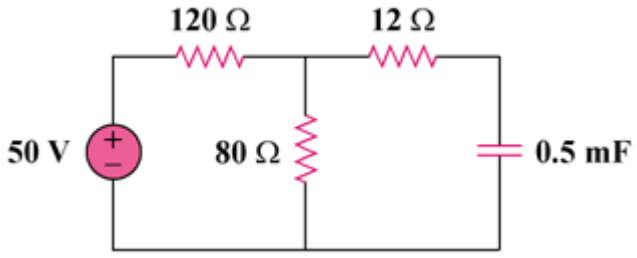

Figure 7.82

Chapter 7, Problem 3.

Determine the time constant for the circuit in Fig. 7.83

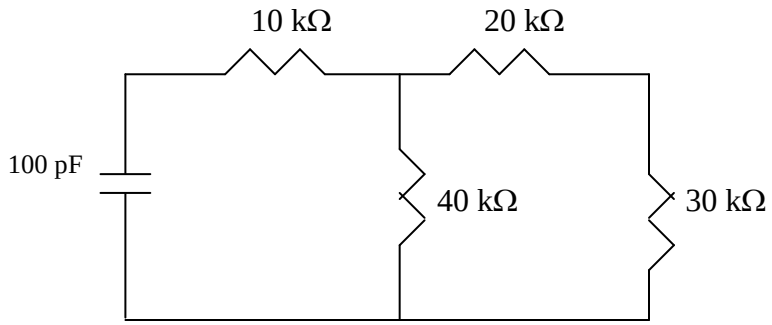

Figure 7.83 For Prob. 7.3.

Chapter 7, Problem 8.

For the circuit in Fig. 7.88 if $v = 10e^{-4t}$ V and $i = 0.2e^{-4t}$ A, $t > 0$

(a) Find R and C.
(b) Determine the time constant.
(c) Calculate the initial energy in the capacitor.
(d) Obtain the time it takes to dissipate 50 percent of the initial energy.

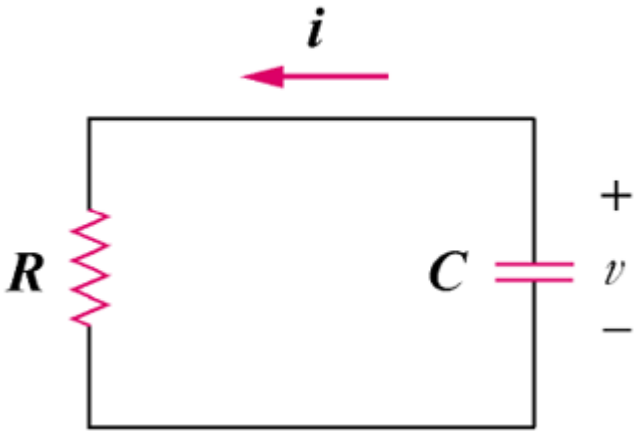

Figure 7.88