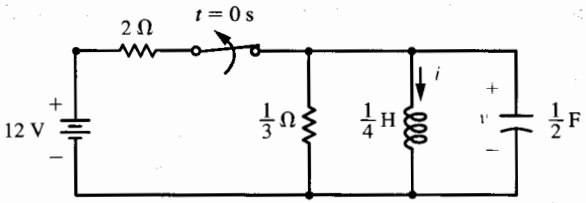


Fig. P3.60

3.63 For the series *RLC* circuit shown in Fig. P3.63, suppose that $R = 7\ \Omega$, $L = 1$ H, $C = 0.1$ F, $v_s(t) = 12$ V for $t < 0$ s and $v_s(t) = 0$ V for $t \geq 0$ s. Find $v(t)$ and $i(t)$ for all time.

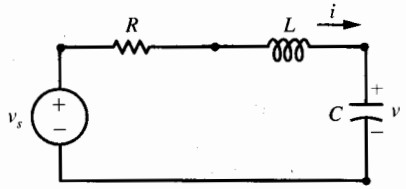


Fig. P3.63

3.64 For the series *RLC* circuit shown in Fig. P3.63, suppose that $R = 2\ \Omega$, $L = 0.25$ H, $C = 0.2$ F, $v_s(t) = 10$ V for $t < 0$ s and $v_s(t) = 0$ V for $t \geq 0$ s. Find $v(t)$ and $i(t)$ for all time.

3.65 For the series *RLC* circuit shown in Fig. P3.63, suppose that $R = 2\ \Omega$, $L = 1$ H, $C = 1$ F, $v_s(t) = 6$ V for $t < 0$ s and $v_s(t) = 0$ V for $t \geq 0$ s. Find $v(t)$ and $i(t)$ for all time.

3.66 For the circuit shown in Fig. P3.66, suppose that $v_s(t) = 6$ V for $t < 0$ s and $v_s(t) = 0$ V for $t \geq 0$ s. Find $v_2(t)$ and $v_1(t)$ for all time.

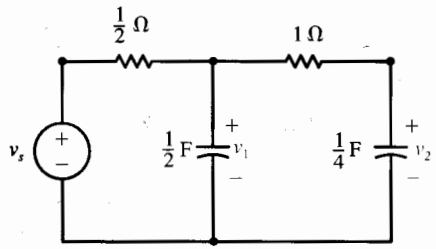


Fig. P3.66

3.67 For the circuit shown in Fig. P3.67, suppose that $v_s(t) = 6$ V for $t < 0$ s and $v_s(t) = 0$ V for $t \geq 0$ s. Find $i(t)$ and $v(t)$ for all time.

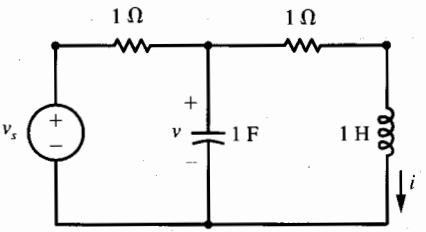


Fig. P3.67

3.68 For the circuit shown in Fig. P3.67, interchange the inductor and the capacitor. Suppose that $v_s(t) = 6$ V for $t < 0$ s and $v_s(t) = 0$ V for $t \geq 0$ s. Find the capacitor voltage $v(t)$ and the inductor current $i(t)$ for all time.

3.69 For the parallel RLC circuit shown in Fig. P3.69, suppose that $R = 0.5\ \Omega$, $L = 0.2$ H, $C = 0.25$ F, and $i_s(t) = 2u(t)$ A. Find the step responses $i(t)$ and $v(t)$.

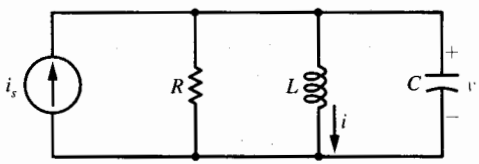


Fig. P3.69

3.70 For the parallel *RLC* circuit shown in Fig. P3.69, suppose that $R = 3\ \Omega$, L = 3 H, $C = \frac{1}{12}$ F, and $i_s(t) = 4u(t)$ A. Find the step responses $i(t)$ and $v(t)$.

3.71 For the series *RLC* circuit shown in Fig. P3.63, suppose that $R = 7\ \Omega$, $L = 1$ H, $C = 0.1$ F, and $v_s(t) = 12u(t)$ V. Find the step responses $v(t)$ and $i(t)$.

3.72 For the series *RLC* circuit shown in Fig. P3.63, suppose that $R = 2\ \Omega$, $L = 1$ H, $C = 1$ F,

and $v_s(t) = 12u(t)$ V. Find the step responses $v(t)$ and $i(t)$.

3.73 For the *RLC* circuit shown in Fig. 3.43 on p. 172, suppose that $R = \frac{1}{2}\ \Omega$, $L = \frac{1}{3}$ H, $C = \frac{1}{4}$ F, and $v_s = 1$ V. Find the unit step responses $i(t)$ and $v(t)$.

3.74 For the *RLC* circuit shown in Fig. 3.43 on p. 172, suppose that $R = \frac{1}{2}\ \Omega$, $L = \frac{1}{4}$ H, $C = \frac{1}{2}$ F, and $v_s = 1$ V. Find the unit step responses $i(t)$ and $v(t)$.

3.75 For the circuit shown in Fig. P3.66, suppose that $v_s(t) = 9u(t)$ V. Find the step response $v_2(t)$.

3.76 For the circuit shown in Fig. P3.67, suppose that $v_s(t) = 6u(t)$ V. Find the step responses $i(t)$ and

3.77 Find the step response $v_o(t)$ for the op-amp circuit shown in Fig. P3.77 when $C = \frac{1}{3}$ F and $v_s = 4u(t)$ V.

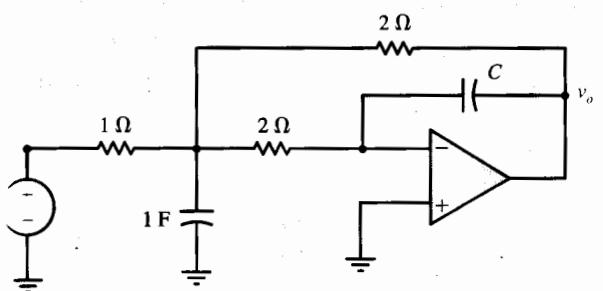
3.78 Find the step response $v_o(t)$ for the op-amp circuit shown in Fig. P3.77 when $C = \frac{1}{8}$ F and $v_s(t) = 8u(t)$ V.

3.79 Find the step response $v_o(t)$ for the op-amp circuit shown in Fig. P3.77 when $C = \frac{1}{4}$ F and $v_s(t) = 6u(t)$ V.

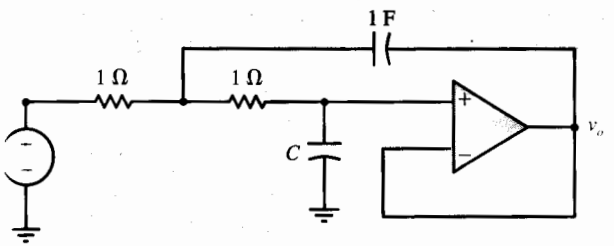
3.80 Find the step response $v_o(t)$ for the op-amp circuit shown in Fig. P3.80 when $C = \frac{4}{3}$ F and $v_s(t) = 4u(t)$ V.

3.81 Find the step response $v_o(t)$ for the op-amp circuit shown in Fig. P3.80 when $C = 1$ F and $v_s(t) = 3u(t)$ V.

3.82 Find the step response $v_o(t)$ for the op-amp circuit shown in Fig. P3.80 when $C = \frac{1}{5}$ F and $v_s(t) = 2u(t)$ V.



P3.77



P3.80