**10.1** Determine $i$ in the circuit of Fig. 10.50.

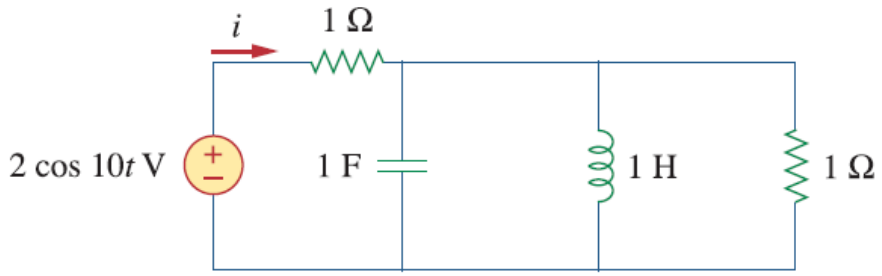


**Figure 10.50**
For Prob. 10.1.

**10.25** Solve for $i_o$ in Fig. 10.73 using mesh analysis.

ML

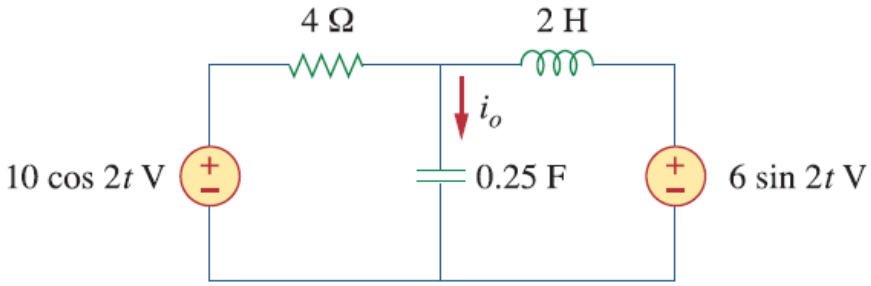


**Figure 10.73**
For Prob. 10.25.

**10.49** Using source transformation, find $i$ in the circuit of Fig. 10.94.

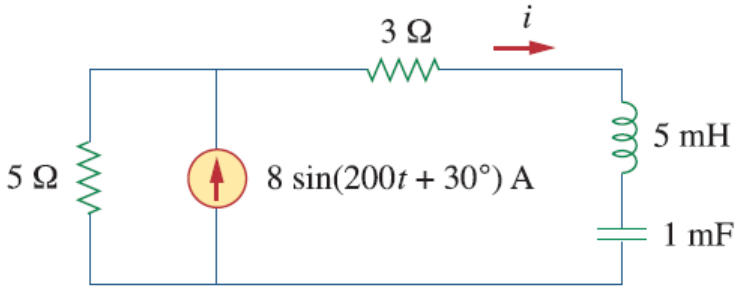


**Figure 10.94**
For Prob. 10.49.

**10.58** For the circuit depicted in Fig. 10.101, find the Thevenin equivalent circuit at terminals *a*-*b*.

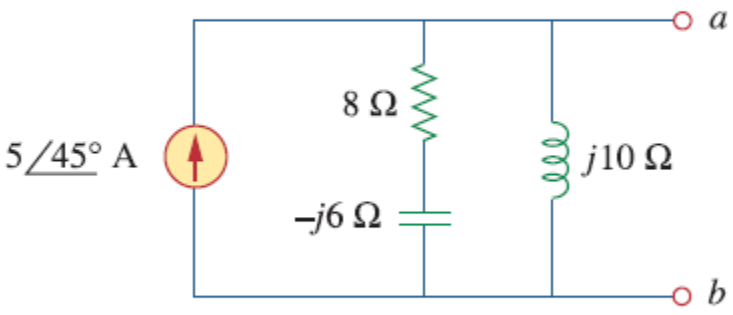


**Figure 10.101**
For Prob. 10.58.

**10.79** For the op amp circuit in Fig. 10.122, obtain $v_o(t)$.

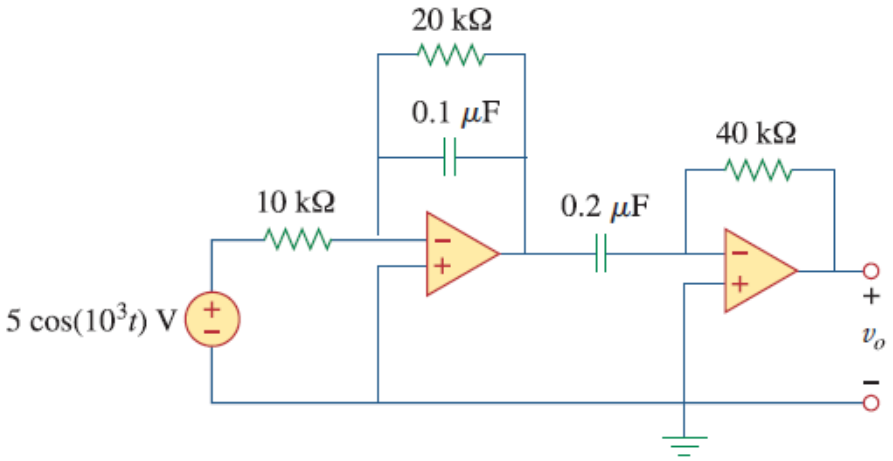


**Figure 10.122**
For Prob. 10.79.

**10.89** The op amp circuit in Fig. 10.131 is called an *inductance simulator*. Show that the input impedance is given by

$$\mathbf{Z}_{\text{in}} = \frac{\mathbf{V}_{\text{in}}}{\mathbf{I}_{\text{in}}} = j\omega L_{\text{eq}}$$

where

$$L_{\text{eq}} = \frac{R_1 R_3 R_4}{R_2} C$$

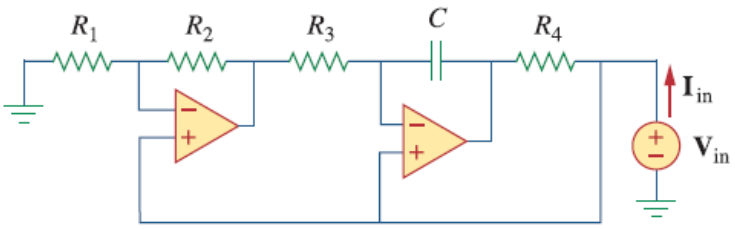


**Figure 10.131**
For Prob. 10.89.

**10.92** The oscillator circuit in Fig. 10.134 uses an ideal op amp.

(a) Calculate the minimum value of $R_o$ that will cause oscillation to occur.

(b) Find the frequency of oscillation.

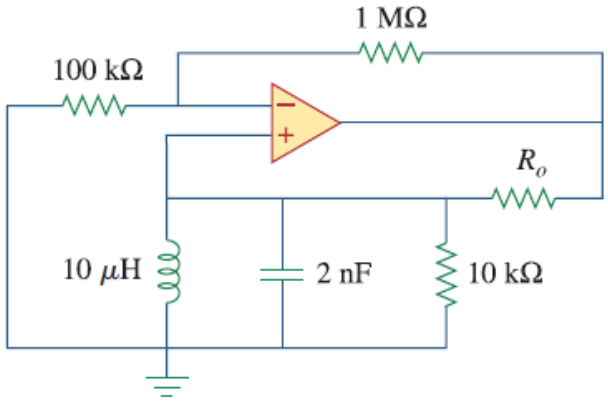


**Figure 10.134**
For Prob. 10.92.