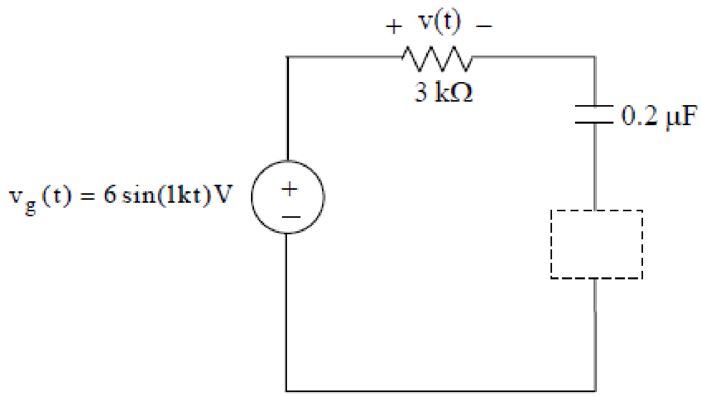
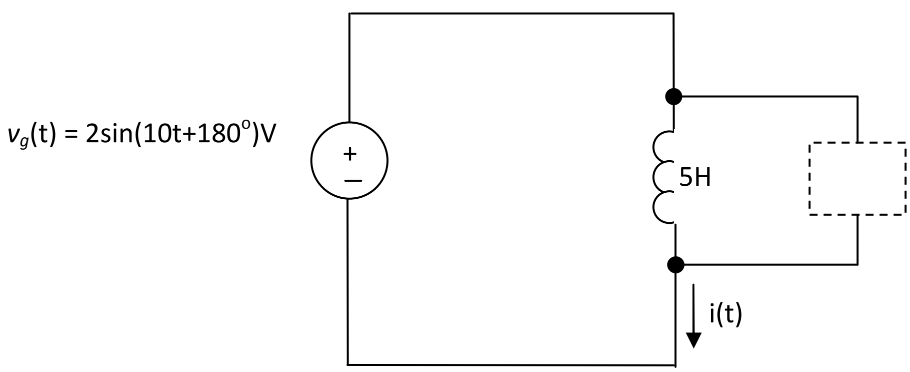
1.



Choose an R, an L, or a C to be placed in the dashed-line box to make $v(t) = V_o\cos(1kt - 45^\circ)$ where I_o is a positive, (i.e., nonzero), real constant. State the value of the component you choose.

2. With your component from problem 1 in the circuit, calculate the resulting value of I_o.

3.

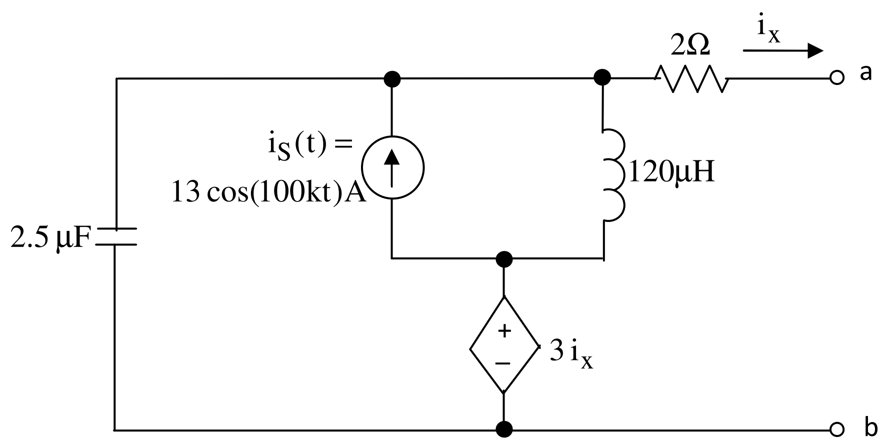


Choose an R, an L, or a C to be placed in the dashed-line box to make $i(t) = I_o\cos(10t+45^\circ)$A

where $\mathbf{I_o}$ is a real constant. State the value of the component you choose.

4. With your component from problem 3 in the circuit, calculate the resulting value of I_o.

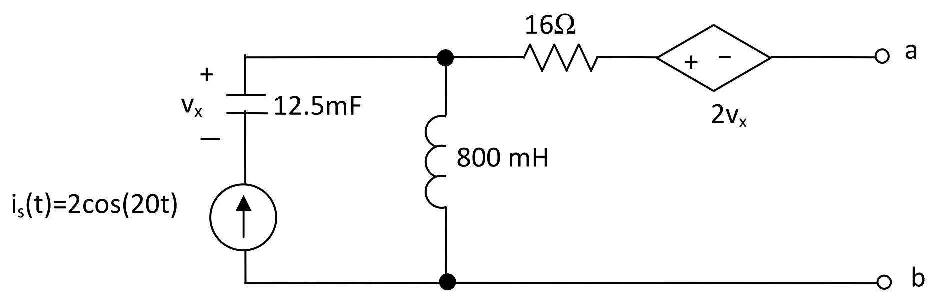
5.



Draw a frequency-domain equivalent of the above circuit. Show a numerical phasor value for $i_s(t)$, and show numerical impedance values for R, L, and C. Label the dependent source appropriately.

6. Find the Thevenin equivalent (in the frequency domain) for the circuit from Problem 6. Give the numerical phasor value for $\mathbf{V}_{Th}$ and the numerical impedance value of z_{Th}.

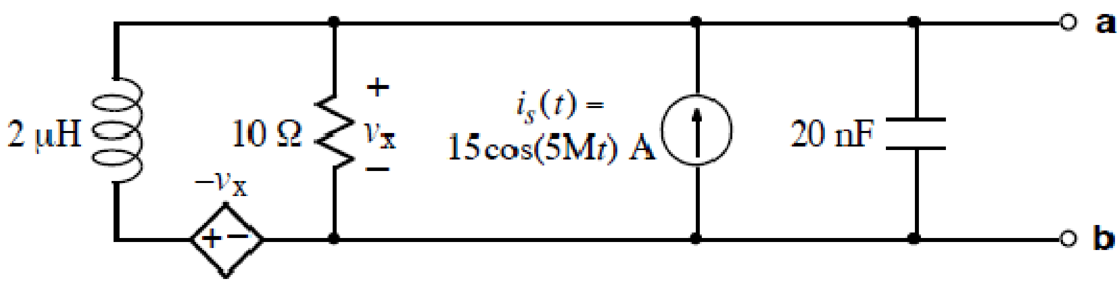
7.



Draw a frequency-domain equivalent of the above circuit. Show a numerical phasor value for $i_s(t)$, and show numerical impedance values for R, L, and C. Label the dependent source appropriately.

8. Find the Thevenin equivalent (in the frequency domain) for the circuit from Problem 8. Give the numerical phasor value for $\mathbf{V}_{Th}$ and the numerical impedance value of z_{Th}.

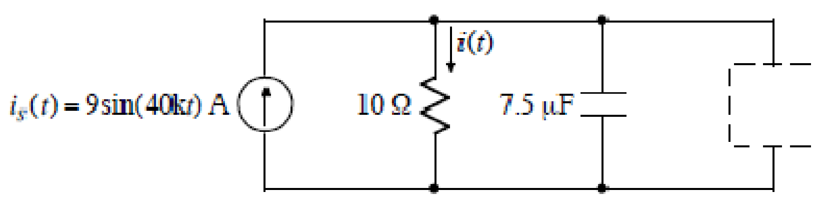
9.



a) Draw a frequency-domain equivalent of the above circuit. Show a numerical phasor value for $i_S(t)$, and show numerical impedance values for R, L, and C. Label the dependent source appropriately.

b) Find the Thevenin equivalent (in the frequency domain) for the above circuit. Give the numerical phasor value for V_{Th} and the numerical impedance value of z_{Th}.

10.



a. Choose an R, an L, or a C to be placed in the dashed-line box to make

$$i(t) = I_o \cos(40kt - 45°)$$

where I_o is a positive, (i.e., nonzero and non-negative), real constant with units of Amps. State the value of the component you choose.

b. Calculate the resulting value of I_o.