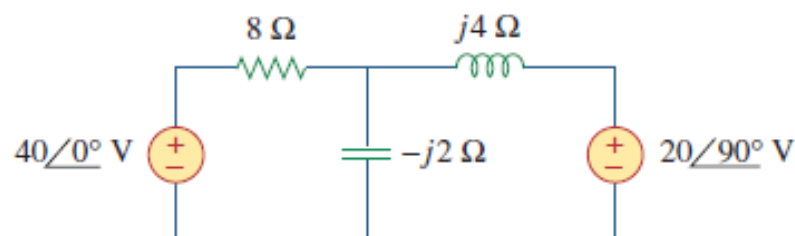


# C11 problems

### Practice Problem 11.4

Calculate the average power absorbed by each of the five elements in the circuit of Fig. 11.6.



**Figure 11.6**

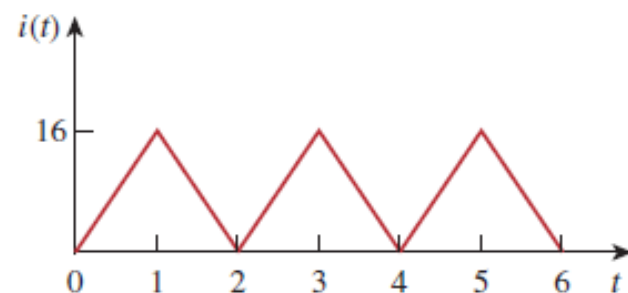
For Practice Prob. 11.4.

**Answer:** 40-V Voltage source:  $-60$  W;  $j20$ -V Voltage source:  $-40$  W; resistor:  $100$  W; others:  $0$  W.

Find the rms value of the current waveform of Fig. 11.15. If the current flows through a  $9\text{-}\Omega$  resistor, calculate the average power absorbed by the resistor.

**Answer:** 9.238 A, 768 W.

### Practice Problem 11.7



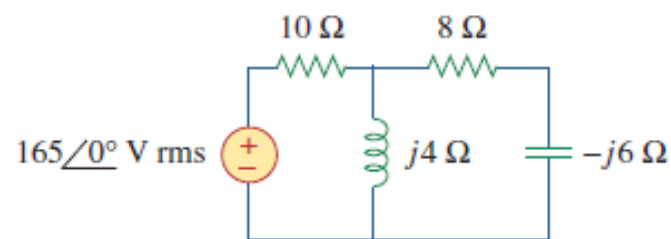
**Figure 11.15**

For Practice Prob. 11.7.

Calculate the power factor of the entire circuit of Fig. 11.19 as seen by the source. What is the average power supplied by the source?

**Answer:** 0.936 lagging, 2.008 kW.

### Practice Problem 11.10



**Figure 11.19**

For Practice Prob. 11.10.

## Practice Problem 11.12

A sinusoidal source supplies 100 kVAR reactive power to load  $Z = 250 \angle -75^\circ \Omega$ . Determine: (a) the power factor, (b) the apparent power delivered to the load, and (c) the rms voltage.

**Answer:** (a) 0.2588 leading, (b) 103.53 kVA, (c) 5.087 kV.

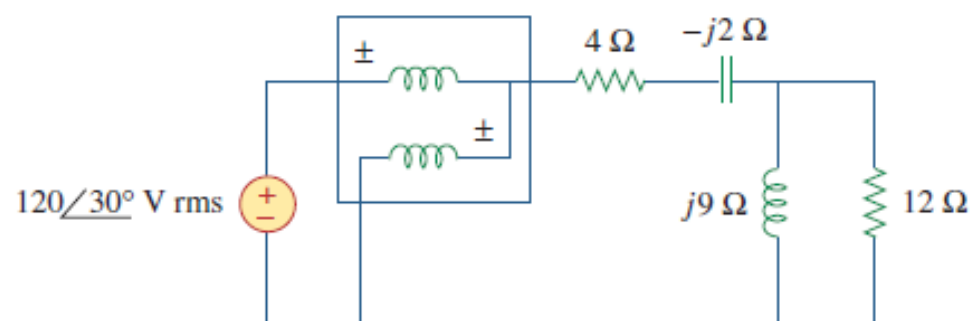
## Practice Problem 11.15

Find the value of parallel capacitance needed to correct a load of 140 kVAR at 0.85 lagging pf to unity pf. Assume that the load is supplied by a 110-V (rms), 60-Hz line.

**Answer:** 30.69 mF.

## Practice Problem 11.16

For the circuit in Fig. 11.33, find the wattmeter reading.



**Figure 11.33**

For Practice Prob. 11.16.

**Answer:** 1.437 kW.

- 11.4 (s11.2)
- 11.7 (s11.4)
- 11.10 (11.5)
- 11.12 (11.6)
- 11.15 (11.8)
- 11.16 (11.9)