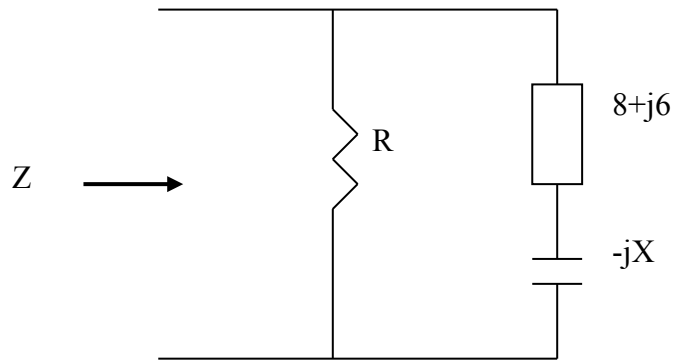


Chapter 9, Solution 78.



$$Z = R // [8 + j(6 - X)] = \frac{R[8 + j(6 - X)]}{R + 8 + j(6 - X)} = 5$$

$$\text{i.e. } 8R + j6R - jXR = 5R + 40 + j30 - j5X$$

Equating real and imaginary parts:

$$8R = 5R + 40 \quad \text{which leads to} \quad \mathbf{R=13.333\Omega}$$

$$6R - XR = 30 - 5X \quad \text{which leads to} \quad \mathbf{X= 6 \Omega}.$$