

88. (a) We observe that  $\omega_d = 12566$  rad/s. Consequently,  $X_L = 754 \, \Omega$  and  $X_C = 199 \, \Omega$ . Hence, Eq. 33-65 gives

$$\phi = \tan^{-1} \left( \frac{X_L - X_C}{R} \right) = 1.22 \text{ rad} .$$

- (b) We find the current amplitude from Eq. 33-60:

$$I = \frac{\mathcal{E}_m}{\sqrt{R^2 + (X_L - X_C)^2}} = 0.288 \text{ A} .$$