31.15

Datos

$R = 200\ \Omega$

$L = 0.4\ H$

$C = 6 \cdot 10^{-6}\ F$

$V_{MAX} = 30\ V$

$\omega = 250\ rad/s$

$$Z = \sqrt{R^2 + \left(\omega L - \frac{1}{\omega C}\right)^2}$$

$$Z = \sqrt{(200)^2 + \left((250)(0.4) - \frac{1}{(250)(6 \cdot 10^{-6})}\right)^2}$$

$$Z = 601\ \Omega$$

b) $I_{MAX} = \frac{V_{MAX}}{Z} = \frac{30}{601} = 0.049\ A$

c) $\phi = \arctan\left(\frac{\omega L - 1/\omega C}{R}\right) = \left(\frac{100 - 667}{200}\right) = -70.$