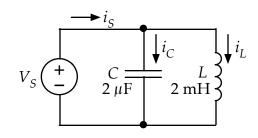
In the circuit shown at right, the voltage source is sinusoidal with

$$V_S(t) = V_m \cos(\omega t),$$

where $V_m = 5$ V and $\omega = 2500$ rad/s. Write the expression for the total current flowing through the source. Then repeat for $\omega = 5000$ rad/s.



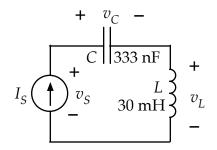
$$i_{\rm S}$$
 ($\omega=2500~{\rm rad/s}$) = _____

$$i_S$$
 ($\omega = 5000 \text{ rad/s}$) = _____

In the circuit shown at right, the current source is sinusoidal with

$$I_S(t) = I_m \sin(\omega t),$$

where I_m = 20 mA and ω =20,000 rad/s. Write the expression for the total voltage across the source. Then repeat for ω = 10,000 rad/s.



$$v_{S}$$
 ($\omega = 20,000 \text{ rad/s}$) = _____

$$v_S$$
 ($\omega = 10,000 \text{ rad/s}$) = _____