Relevant Formulas

$$Z = R + jX \qquad \text{(complex impedance)}$$
$$X_L = j\omega L \qquad \text{(reactance of an inductor)}$$
$$X_C = \frac{-j}{\omega C} \qquad \text{(reactance of a capacitor)}$$
$$|Z| = \sqrt{\Re(Z)^2 + \Im(Z)^2} \qquad \text{(magnitude of impedance)}$$
$$Z_{eq} = Z_1 + Z_2 + Z_3 + \dots \qquad \text{(series connection)}$$
$$\frac{1}{Z_{eq}} = \frac{1}{Z_1} + \frac{1}{Z_2} + \frac{1}{Z_3} + \dots \qquad \text{(parallel connection)}$$
$$\tilde{V} = V_0 e^{j\omega t} \qquad \text{(voltage phasor)}$$
$$\tilde{I} = I_0 e^{j(\omega t - \phi)} = \frac{\tilde{V}}{Z} \qquad \text{(current phasor)}$$
$$I_0 = \frac{V_0}{|Z|} \qquad \text{(current amplitude)}$$
$$\tan\phi = \frac{\Im(Z)}{\Re(Z)} \qquad \text{(tangent of phase angle)}$$
$$\tilde{I}_C = \frac{\tilde{V}_C}{X_C} \qquad \text{(capacitor current phasor)}$$
$$\tilde{I}_L = \frac{\tilde{V}_C}{X_L} \qquad \text{(inductor current phasor)}$$
$$\phi = 0 \qquad \text{(resonance condition)}$$
$$P_{av} = \frac{I_0 V_0}{2}\cos\phi = I_{rms} V_{rms} \cos\phi \qquad \text{(average power)}$$
$$P_{av,R} = I_{rms}^2 R \qquad \text{(average power dissipated in resistor)}$$

In simple (all parallel or all series) AC RLC Circuits, a helpful mnemonic is:

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In inductors, current lags voltage by $\pi/2$ and in capacitors, current leads voltage by $\pi/2$, and in resistors, in phase with the voltage
Therefore:

$$\tilde{I}_L = I_{0,L}\, e^{j(\omega t - \frac{\pi}{2})}$$
$$\tilde{I}_C = I_{0,C}\, e^{j(\omega t + \frac{\pi}{2})}$$
$$\tilde{I}_R = I_{0,R}\, e^{j(\omega t)}$$