

Power

$P = IV$ instantaneous always true

- Difficult for Generator, Inductor and Capacitor because of phase
- Resistor I, V are always in phase!

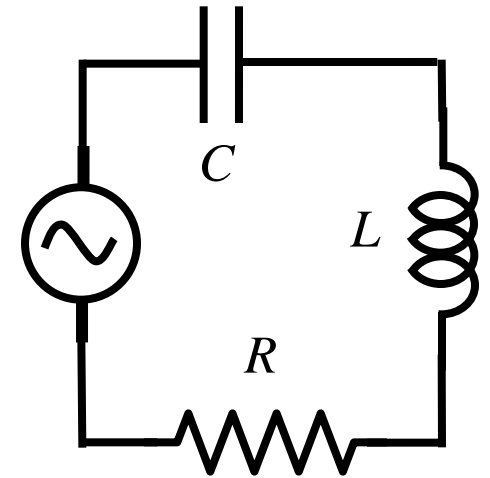
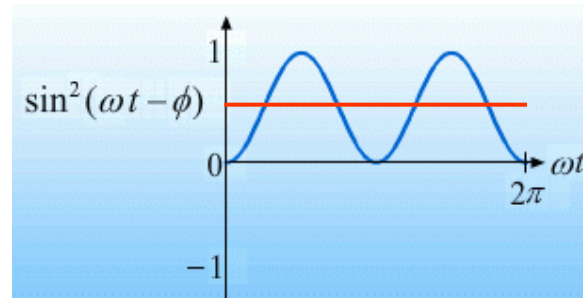
$$P = IV$$
$$= I^2 R$$

Average Power

Inductor and Capacitor = 0 ($\langle \sin(\omega t) \cos(\omega t) \rangle = 0$)

Resistor

$$\langle I^2 R \rangle = \langle I^2 \rangle R = \frac{1}{2} I_{\text{peak}}^2 R$$



RMS = Root Mean Square

$$I_{\text{peak}} = I_{\text{rms}} \sqrt{2}$$



$$\langle I^2 R \rangle = I_{\text{rms}}^2 R$$