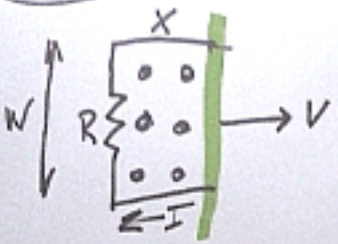
220



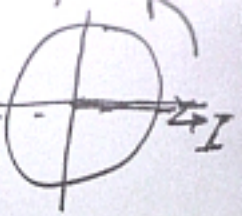
$x = x_0 + vt$ $\quad \frac{\Delta x}{\Delta t} = v$

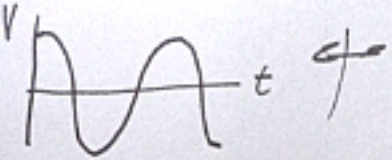
$\mathcal{E} = -\frac{\Delta \phi_M}{\Delta t}$

$\phi_M = BWx \Rightarrow \frac{\Delta \phi_M}{\Delta t} = Bvw$

$|\mathcal{E}| = Bvw$

$\frac{\mathcal{E}}{R} = I \Rightarrow I = \frac{Bvw}{R}$





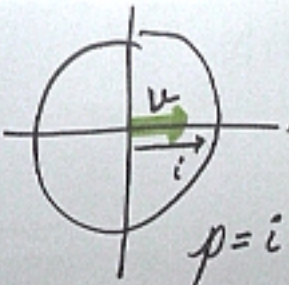
$$V = V_m \sin(\omega t)$$

$$\omega = 2\pi f$$

$$i = \frac{V_m}{R} \sin(\omega t)$$

$v = V_m \sin(\omega t)$

$\omega = 2\pi f$



$p = i^2 R$

$\langle p \rangle = I_m^2 R \langle \sin^2(\omega t) \rangle$

$\langle \sin^2(\omega t) \rangle = \frac{1}{2}$

$\langle p \rangle = \frac{1}{2} I_m^2 R$

$V_{RMS} = \frac{V_m}{\sqrt{2}}; \; I_{RMS} = \frac{I_m}{\sqrt{2}}$

$\langle p \rangle = I^2 R = IV = \frac{V^2}{R}$

$v = V_m \sin(\omega t)$

$C = \frac{Q}{V} \Rightarrow Q = CV$

$I = \frac{\Delta Q}{\Delta t} \Rightarrow$

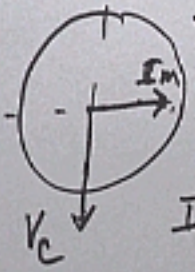
$i = \omega C V_m \cos(\omega t)$

$i = \omega C V_m \sin(\omega t + \frac{\pi}{2})$

$$i = \frac{dq}{dt} \Rightarrow$$

$$i = \omega C V_m \cos(\omega t)$$

$$i = \omega C V_m \sin(\omega t + \frac{\pi}{2})$$



$\phi = 0$

$$I_m = \omega C V_m$$

$V = IR$

$$X_C = \frac{1}{\omega C}$$

Cap. Reactance

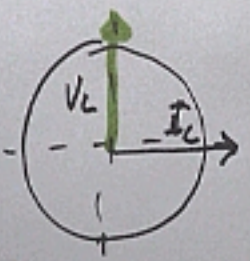
$$I_m X_C = V_m$$

$V = V_m \sin(\omega t)$

$\varepsilon = -L\frac{\Delta I}{\Delta t}$

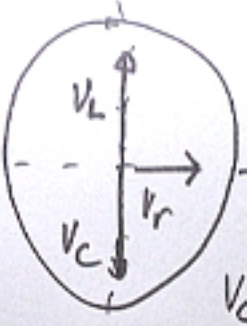
$i_L = -\frac{V_m}{\omega L}\cos(\omega t)$

$i_L = \frac{V_m}{\omega L}\sin(\omega t - \frac{\pi}{2})$



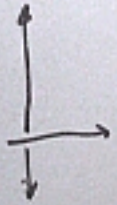
$X_L \equiv \omega L$

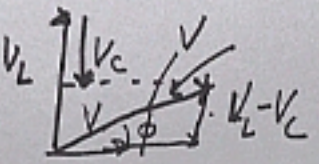
$V_m = I_m X_L$



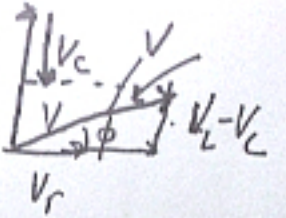
$V_C = I X_C$

$V_L = I X_L$





$$V = \sqrt{V_r^2 + (V_L - V_C)^2}$$

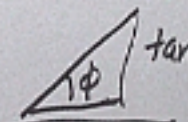


$$V = \sqrt{V_r^2 + (V_L - V_C)^2}$$

$$V_r = IR$$

$$V_L = IX_L$$

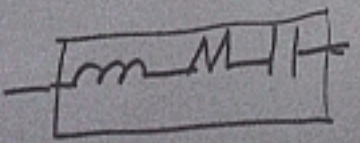
$$V_C = IX_C$$



$$\tan\phi = \frac{X_L - X_C}{R}$$

$$V = I\sqrt{R^2 + (X_L - X_C)^2}$$

$$Z = \sqrt{R^2 + (X_L - X_C)^2}$$



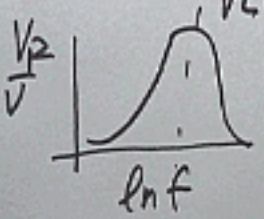
$$P = I_{Rms} V_{Rms} \cos\phi$$

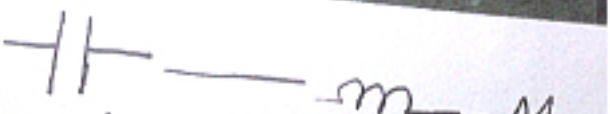
$$Z = \sqrt{R^2 + (X_L - X_C)^2}$$

if $X_L = X_C$

$$\omega L = \frac{1}{\omega C}$$

$$\omega_r = \frac{1}{\sqrt{LC}}$$

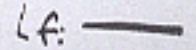




$X_C = \frac{1}{\omega C}$

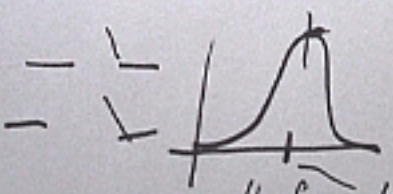
$X_L = \omega L$

Lf: 

Lf: 

Hf:

Hf: 



$\ln f$

$\omega = \frac{1}{\sqrt{LC}} = 2\pi f$

$f_{Res} = \frac{1}{2\pi\sqrt{LC}}$