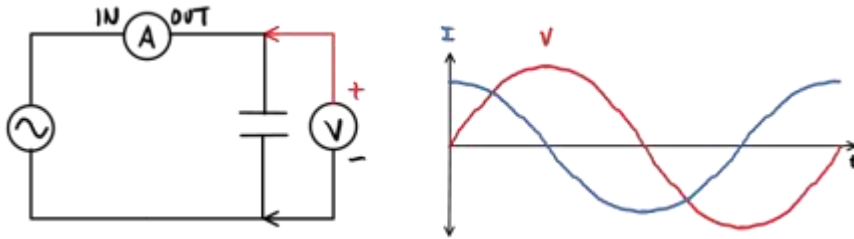


## Reactive Impedance (26:33)

Describe the relationship of current with respect to voltage for capacitive elements.

Describe the direction of current flow and the polarity of voltage across the capacitor in  $\frac{1}{4}$  cycle increments for the following circuit. Identify each phase (charge or discharge) the capacitor is experiencing.



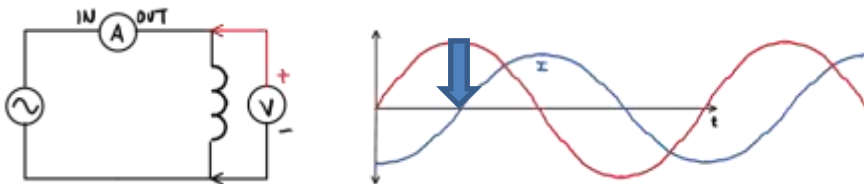
Illustrate and describe the transfer of power in a capacitive circuit for a full cycle of sinusoidal AC.

Given a  $15\mu\text{F}$  capacitor at 60Hz experiencing  $50\text{V}\angle-15^\circ$  use Ohm's law to determine current. Illustrate voltage and current on a phasor diagram.

Illustrate and describe how frequency and capacitance level affect capacitive complex impedance magnitude.

Describe the relationship of current with respect to voltage for inductive elements.

Describe the direction of current flow and the polarity of voltage across the inductor in  $\frac{1}{4}$  cycle increments for the following circuit. Identify each phase (storage or release) the inductor is experiencing.



Illustrate and describe the transfer of power in an inductive circuit for a full cycle of sinusoidal AC.

Given a  $120\text{mH}$  inductor at 400Hz experiencing  $60\text{V}\angle 20^\circ$  use Ohm's law to determine current. Illustrate voltage and current on a phasor diagram.

Illustrate and describe how frequency and inductance level affect inductive complex impedance magnitude.