Series AC Circuits (23:42)
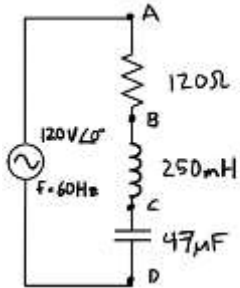
Identify the formula used to calculate total impedance of a series AC circuit.

Determine the total impedance of this series AC circuit.

Identify the most fundamental series AC circuit property.

Determine the source current in the above circuit. Illustrate supply voltage and source current on a phasor diagram. Compare phasors with time domain representations of the same properties.

Determine voltage across each element in the above circuit. Illustrate voltage and current on phasor diagrams. Determine the relative phase shift of current with respect to voltage for each element.
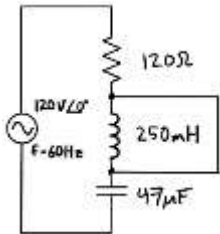
Describe Kirchhoff's Voltage Law and write the Kirchhoff's Voltage Law equation for the above series circuit. Identify the implications of Kirchhoff's Voltage Law when solving for instantaneous values, checking calculations, and solving for unknown voltages.

Compare and contrast impedance, current, and voltage measurements for these two series AC circuits.
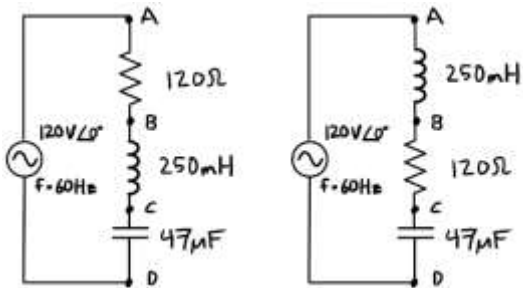
Identify the influence of shorts and opens in series AC circuits.

Determine the electrical properties of this series AC circuit including a short.

120Ω

120V∠0°
f-60Hz

250mH

47μF

Determine the electrical properties of this series AC circuit including an open.

120Ω

120V∠0°
f-60Hz

250mH

47μF