

Phasors

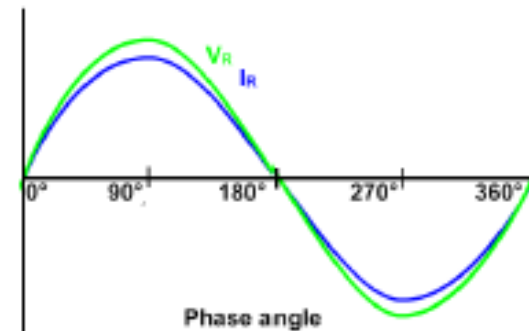
Dr. T. S. Sidhu



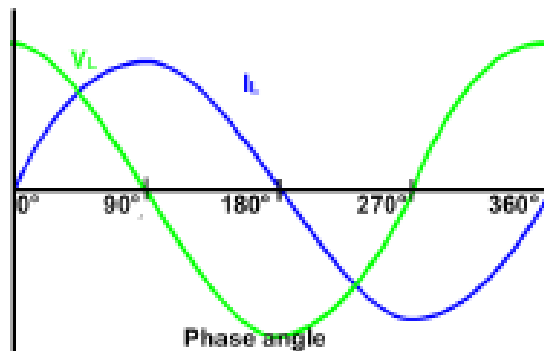
AC Voltages and Currents

- Phase shift
- Frequency

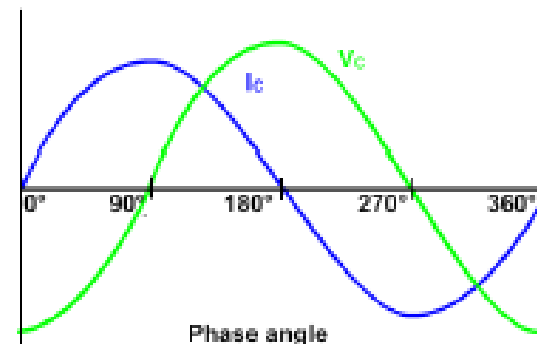
In a pure resistance, Voltage (V_R) & Current (I_R) are in phase



In a pure inductance, Current (I_L) LAGS Voltage (V_L) by 90°



In a pure capacitance, Voltage (V_C) LAGS Current (I_C) by 90°



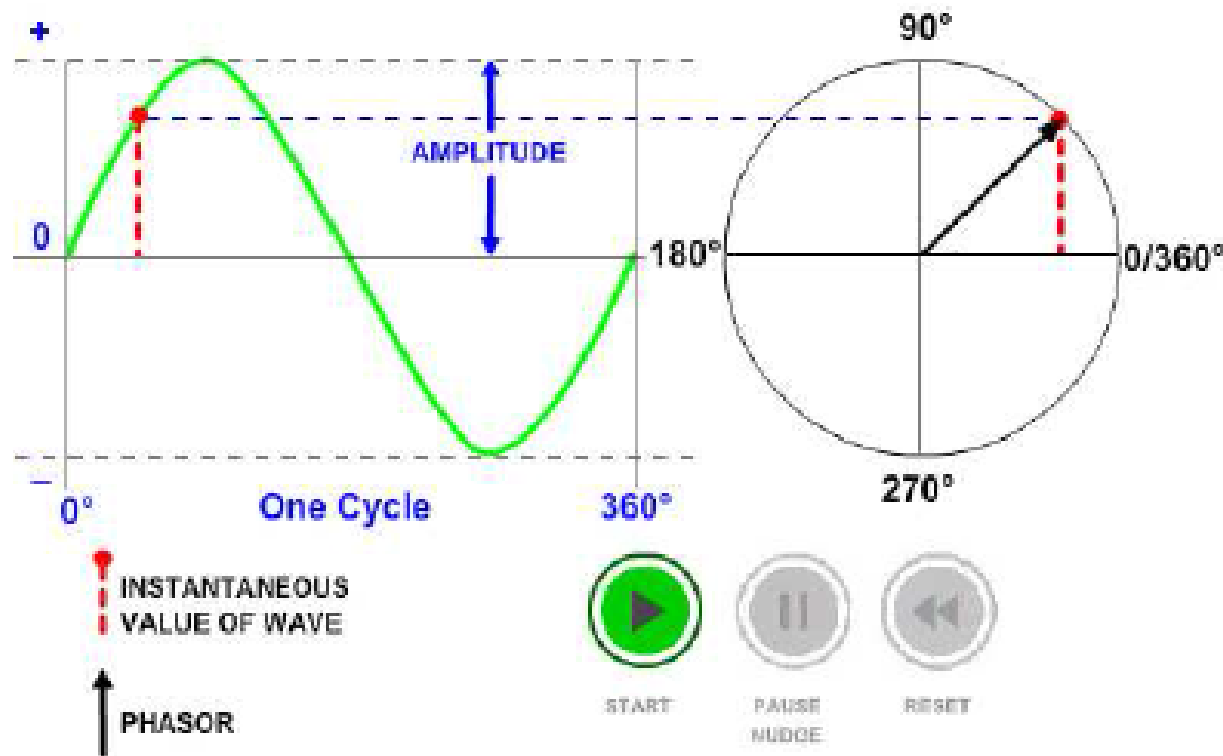
Phasor representation

- A simple sine wave



Simplifying a Sine Wave

Sinusoidal Signal and Phasor

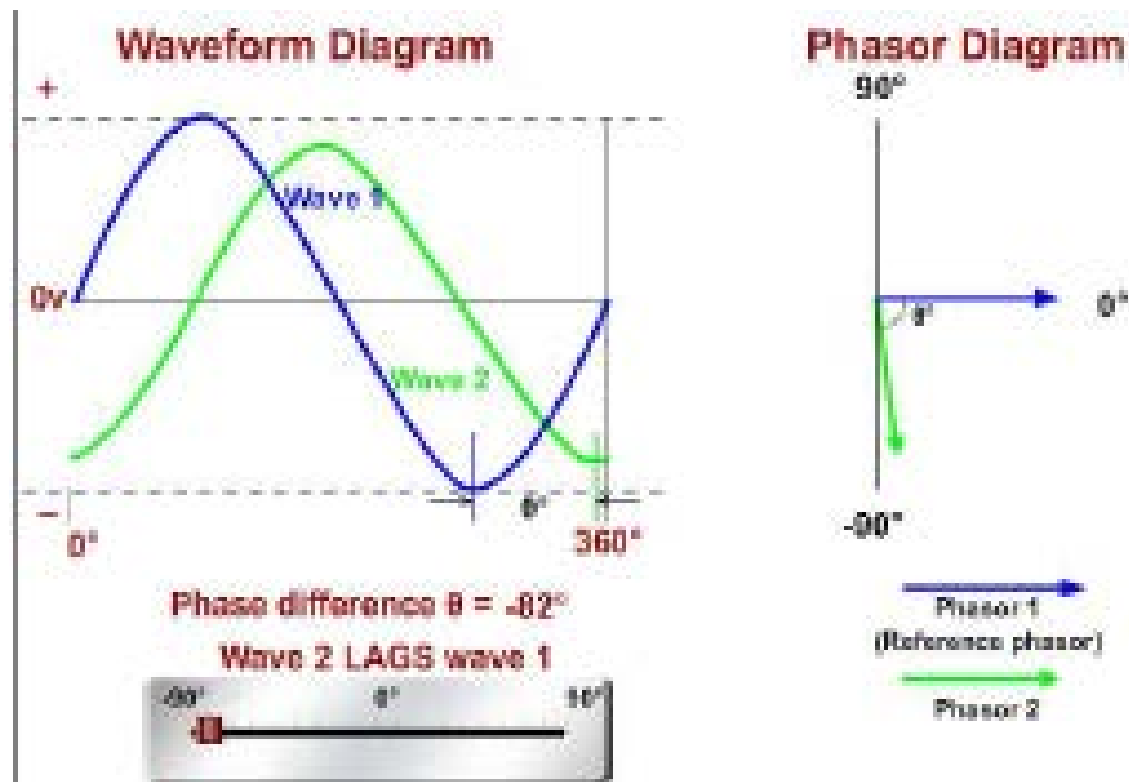


Source: www.learnabout-electronics.org

Angular velocity

- As a phasor is rotating, a speed at which it rotates is the angular velocity
- $\omega = 2\pi f$
 - For 60Hz system, phasors will rotate at 377 rad/sec

Phasor Diagram



Phasor Math

- Addition
- Subtraction
- Multiplication
- Division

Real and Imaginary Parts

