

Phasor Notation (34:55)

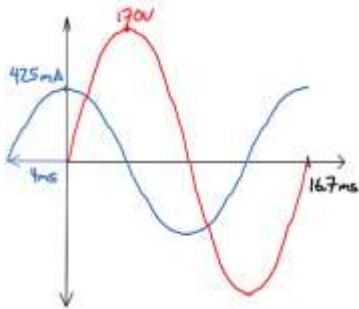
Identify the most useful and informative sinusoidal properties.

Describe phasor notation and identify which properties are utilized in phasor notation.

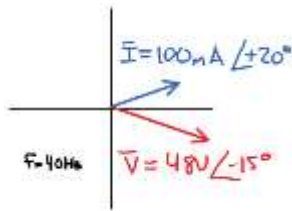
Given the time variant expressions $v(t) = 33.9V \sin(360^\circ \cdot 60t + 0^\circ)$ and $i(t) = 17mA \sin(360^\circ \cdot 60t - 20^\circ)$ place them in phasor format. Draw them on a phasor diagram. Identify how frequency is specified using phasor notation.

Describe the advantages of phasor notation.

Given this plot of voltage and current as a function of time place them in phasor format and draw them on a phasor diagram.

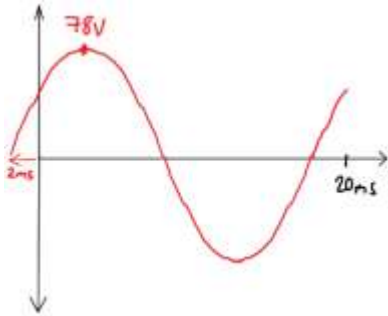


Given this phasor diagram represent these quantities as a time variant expression and plot them as functions of time. Compare and contrast the ease of determining relative phase shift between voltage and current using the phasor domain vs the time domain.

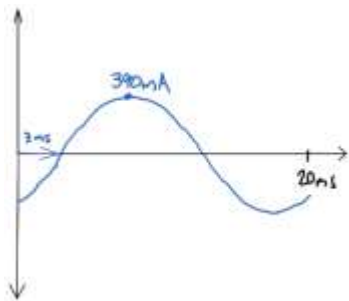


Use phasors to add $v_1(t) = 20V \sin(360^\circ \cdot 60t + 12^\circ)$ and $v_2(t) = 30V \sin(360^\circ \cdot 60t + 28^\circ)$. Plot these properties in the phasor and time domain.

Given this plot of voltage as a function of time, express it in both the time and phasor domain. Draw it on a phasor diagram.

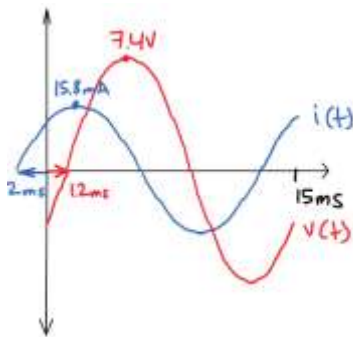


Given this plot of current as a function of time, express it in both the time and phasor domain. Draw it on a phasor diagram.

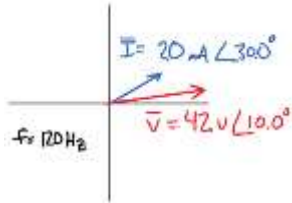


Simultaneously plot the previous two example problems in both the time and phasor domain. Identify the more compact, informative, and efficient means of representation. Determine the relative phase shift of current with respect to voltage.

Given this plot of voltage and current as functions of time, express them in the phasor domain, draw them on a phasor diagram, and determine the relative phase shift of current with respect to voltage.



Given this phasor diagram plot voltage and current as functions of time. Determine the relative phase shift of current with respect to voltage.



Given a DMM in AC voltmeter mode displaying a reading of roughly 4.5V, assume this is reference waveform and place it in phasor form.

Identify which properties voltmeters and ammeters measure. Identify which properties oscilloscopes measure.