Phase Shift (36:05)

Define phase shift with respect to the circular origins of the sine wave.

Differentiate between positive and negative phase shift.

Plot a full cycle of the function v(t)=100V sin(360°*66.7*t+30°) and compare it to an otherwise identical function with no phase shift.

Determine the instantaneous value of v(t)=100V sin(360°*66.7*t+30°) at t=0.

Determine the instantaneous value of v(t)=100V sin(360°*66.7*t+30°) at t=2.4ms,4ms, and 8ms.

For the function v(t)=100V sin(360°*66.7*t+30°) convert the 30° phase shift into an equivalent amount of time. Comment which direction a positive phase shift moves the waveform.

Plot a full cycle of the function v(t)=80V sin(360*100*t-15) and compare it to an otherwise identical function with no phase shift.

Determine the instantaneous value of v(t)=80V sin(360*100*t-15°) at t=0.

For the function v(t)=80V sin(360*100*t-15°) convert the phase shift into an equivalent amount of time. Comment which direction a positive phase shift moves the waveform.

Determine the instantaneous value of v(t)=80V sin(360*100*t-15°) at t=2ms and 6ms.

Given the following data determine the desired properties:

1) V_{PEAK} = 325.3V
   T = 20ms
   phase shift = +10°
   v(3ms)
2) V_{RMS} = 120V
   f = 60Hz
   phase shift = -20°
   v(4ms)
3) $V_{PEAK\ TO\ PEAK}$ = 400V
   T = 12ms
   phase shift = left 1ms
   v(1.5ms)

Compare the functions v_1(t)=150sin(360*40*t+0°) and v_2(t)= 150sin(360*40*t+35°) on the same plot. Determine the time shift between the two waveforms. Determine the relative nature of these two functions.

Define the term "relative" phase shift.

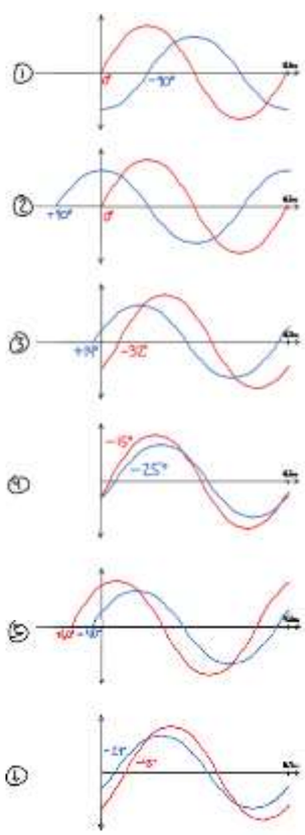
Compare the functions $v_1(t)$= 169.7sin(360*60*t) and i(t)= 200mAsin(360*60*t-20°) on the same plot. Determine the time shift between the two waveforms. Determine the relative nature of these two functions.

Identify which quantity, voltage or current, is customarily employed as the reference when measuring phase shift of the other quantity.

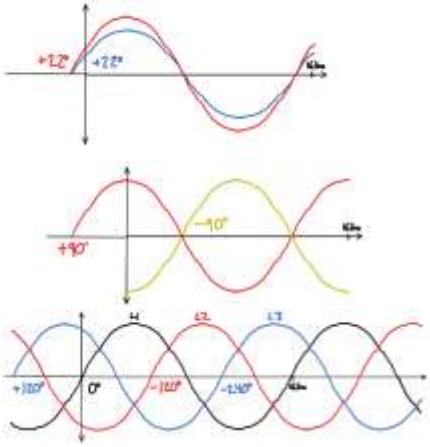
Compare the functions $v_1(t)$= 21.7sin(360*35*t+23.6°) and expression i(t)= 71.4mAsin(360*35*t+55.7°) on the same plot. Determine the time shift between the two waveforms. Determine the relative nature of these two functions.

Given the plot below identify the phase shift of current in blue with respect to voltage in red. Convert the phase shifts to time.

Given the plots below identify the phase shift of current in blue with respect to voltage in red.



Determine the relative phase shift between these waveforms.



Identify a reliable means of determining phase shift.

Identify the problems associated with time variant sinusoidal properties using the general expression $v(t)=V_{PEAK}\sin(2\pi ft\pm\Theta°)$