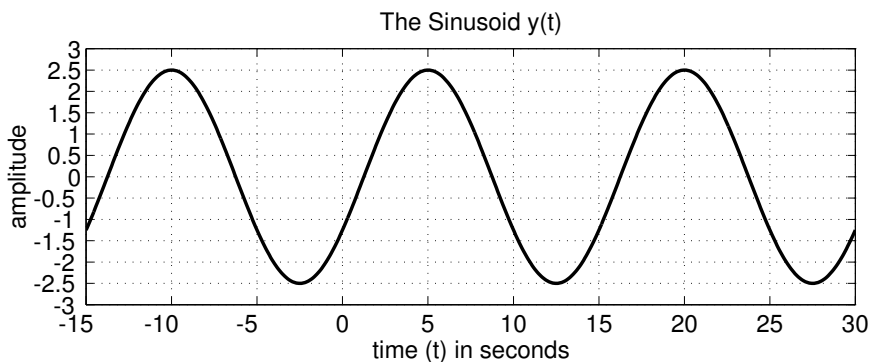
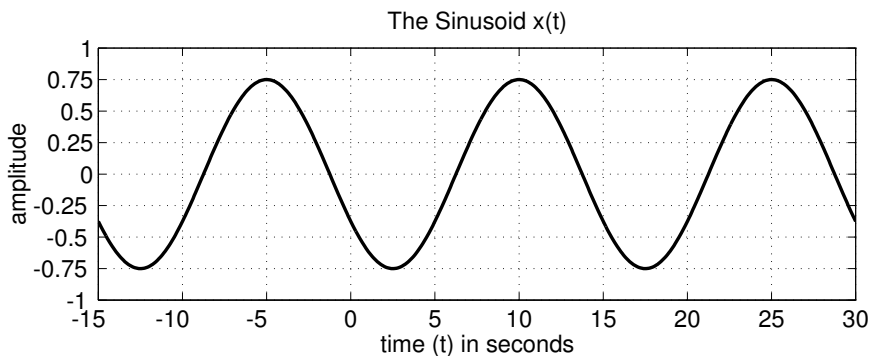


PROBLEM:

Consider the sinusoidal signals $x(t)$ and $y(t)$ plotted below.



- (a) Determine A , f_0 , and ϕ in the representation of $x(t)$ as $x(t) = A \cos(2\pi f_0 t + \phi)$.

$A =$ ----- $\phi =$ ----- $f_0 =$ ----- (in Hz)

- (b) Now suppose that $B \cos(\omega_0 t + \psi) = x(t) + 0.375 \cos(\omega_0 t)$. Determine B , ω_0 , and ψ .

$B =$ -----

$\omega_0 =$ -----

$\psi =$ -----

- (c) The signal $y(t)$ can be expressed in terms of $x(t)$. That is, we can write $x(t) = C y(t - t_1)$. Determine the numerical values of the scale factor C and the time shift t_1 , where $t_1 \geq 0$.

$C =$ ----- $t_1 =$ -----