

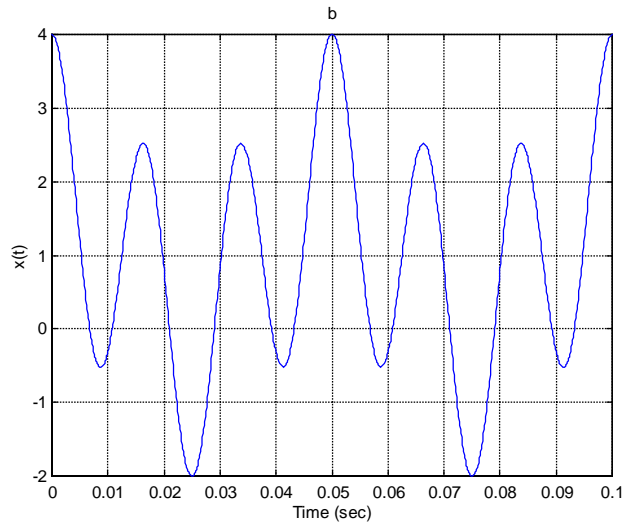
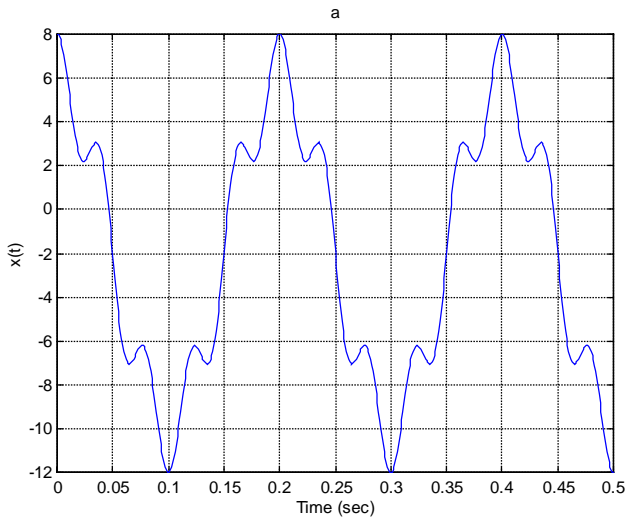
Spectrum

1. Determine the fundamental frequency of the following signals, and plot their sinusoidal spectra (both magnitude and phase) and their exponential spectra.

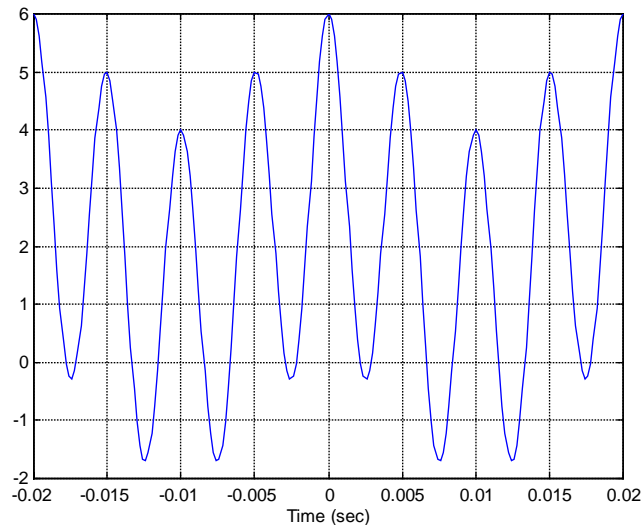
a) $x(t) = 2 + 3\cos(0.2t) + \cos(0.25t + \pi/2) + 4\cos(0.3t - \pi)$

b) $x(t) = 1 + 10\cos(2\pi(60)t + \pi/8) + 2\cos(2\pi(300)t - \pi/4)$

2. Find an expression for $x(t)$ and plot the spectrum for each graph.



3. Repeat Problem 2 for the following plot:



4. Draw the spectrum for the following signal, and make a *rough* sketch of $x(t)$.

$$x(t) = 10\cos(200\pi t)\cos(2000\pi t)$$

5. Time signals and their corresponding spectra are shown below. However, they are in random order. Match them up.

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

