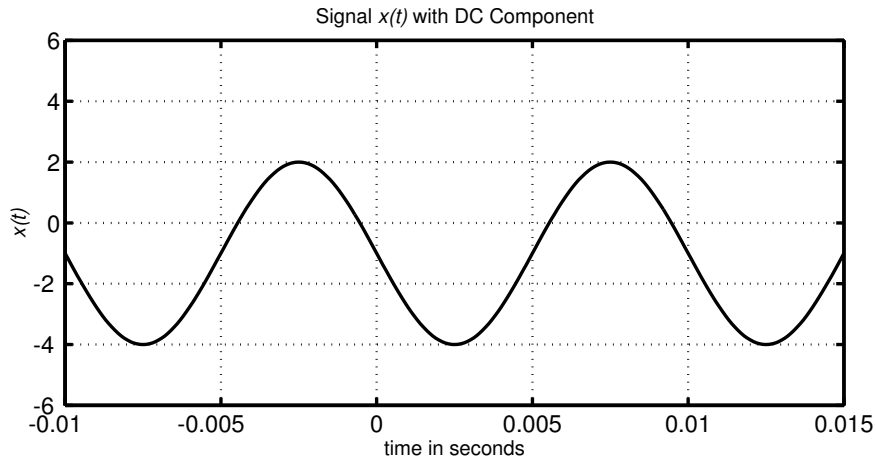


PROBLEM:



The above signal $x(t)$ consists of a DC component plus a cosine signal. The terminology *DC component* means a component that is constant versus time.

- What is the frequency of the DC component? What is the frequency of the cosine component?
- Write an equation for the signal $x(t)$. You should be able to determine numerical values for all the amplitudes, frequencies, and phases in your equation by inspection of the above graph.
- Expand the equation obtained in the previous part into a sum of positive and negative frequency complex exponential signals.
- Then plot the two-sided spectrum of the signal $x(t)$. Show the complex amplitudes for each positive and negative frequency contained in $x(t)$.