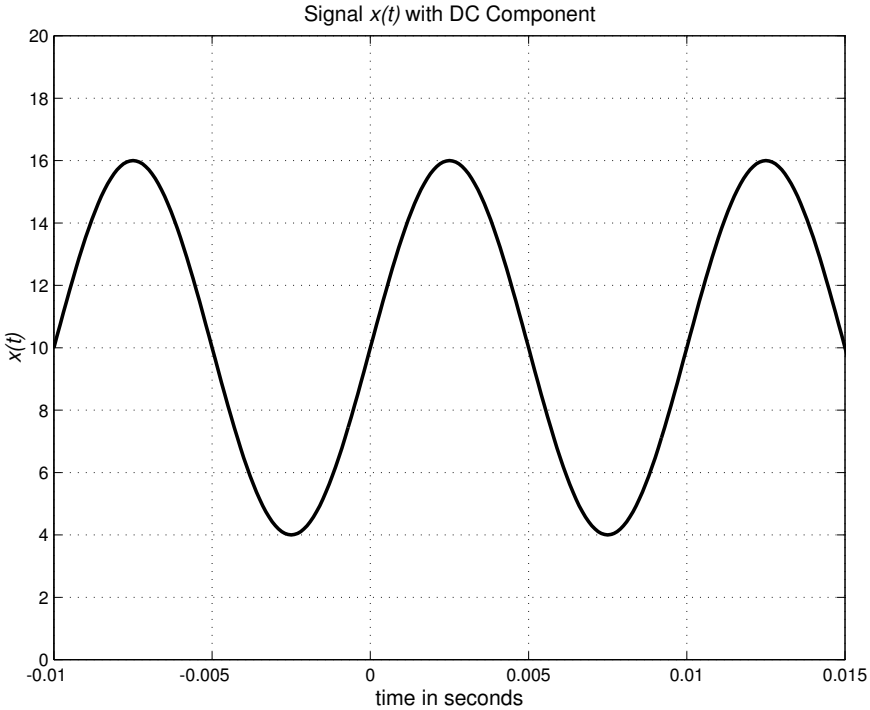
PROBLEM:



The above signal $x(t)$ consists of a DC (or constant) component plus a cosine signal.

(a) What is the frequency of the constant component? What is the frequency of the cosine component?

(b) 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.

(c) Expand the equation obtained in part (a) into a sum of positive and negative frequency complex exponential signals and plot the two-sided spectrum of the signal $x(t)$. Show the complex amplitudes for each positive and negative frequency contained in $x(t)$.