EE103L

Introduction to Python

Assignment 6

1. Assume that x(t)=sin (t) for t >0 and x(t)=1 for t <0, define odd and even decomposition function based on the x(t) and plot the output.
2. Use **for** loop to find the values of  for t = 0, 01, 0.2, 0.3, 0.4 s when f =10, 15, and 20 Hz. Use one set of statements to compute the values for all three frequencies and store the results in a two-dimensional array. Use two nested for loops and double indexing.

1. Use **while** loop to find the largest value of positive t for which  and  are both less than 10. Make the computation for ω=35, 40, and 45. Find your answers to the nearest 0.01.
2. Create a 15-element vector with values of  at equally spaced interval. Find the maximum element value, the minimum element value, the average of the element values, and the indices of the elements for which the element magnitude is greater than 4.
3. Assume,  and, where  and . Plot,  and  v/s  with  on the same graph (you have to use hold on command). Label the axes and create legends for each graph.
4. Sinc function is a function that arises frequently in our course. It is defined as



Create a Matlab function MySinc () that defines sinc(x) function following the above definition. Plot the value sinc(x) in the interval [-2π 2π] using MySinc () function and Matlab inbuilt sinc() function on the same graph.