Topic: Bilinear Transformation

1. Convert the analog filter with system function

Into a digital filter by means of the **bilinear transformation**. The digital filter is to have a resonant frequency of and note that the resonant frequency of analog filter is

1. An ideal analog integrator is described by the system function. Obtain the digital integrator with system function using bilinear transformation, assume T = 0.2.

For the above questions plot the following:

* 1. Plot the pole zero locations of the analog filter(use the Matlab keyword:pzmap)
  2. Plot the magnitude response of the analog filter (use the Matlab keyword: freqs)
  3. Plot the pole zero locations of the digital filter (use the Matlab keyword: zplane)
  4. Plot the magnitude response of the analog filter (use the Matlab keyword: freqz)

Note:

1. Generalize your program as much as possible, which will be helpful for further labs
2. Zip all your files (includes soft copy and ‘.m’ files) and submit to respective lab TA.