

HW #3 Windows

- I.** Investigate the software necessary to generate window functions of length $N \leq 8192$. Window functions which should be available are: (1) rectangular, (2) triangular, (3) Hanning, (4) Hamming, and (5) Kaiser-Bessel.
- II.** Demonstrate that the software is operating correctly by plotting the following window sequences of length $N=32$: (1) rectangular, (2) triangular, (3) Hanning, (4) Hamming, and (5) Kaiser-Bessel ($\alpha = 2.5$ or $\beta = \pi\alpha = 7.85$)
- III.** Consider each of the window sequences plotted in II as the coefficients of a polynomial. Solve for the roots of each polynomial and plot their locations in the complex z -plane.

Reference

- [1] F. Harris, "On the Use of Windows for Harmonic Analysis with the Discrete Fourier Transform", Proc. IEEE 66: 51 - 83 (1978).