HW5 Fourier Analysis of Discrete-Time Signals 4331

Due Oct 14

October 6, 2015

`KandH Chapter 4`

Problem 1
50 Points

(a) Compute the analytical DFT (Equation 4.33 Page 180) of the sequence $f = \{1\ 1\ 1\ 0\ 0\ 0\ 0\ 0\}$.

(b) Compute by hand the IDFT (Equation 4.40 Page 182) of the sequence for the element $x[2]$.

Problem 2 50 Points
K&H describe the Fast Fourier Transform (fft) and the inverse FFT (ifft)in Section 4.4 pages 195-205. Use a MATLAB program to compute the FFT and IDFT of the sequence in problem 1 to check your hand calculations and compare the results to the DFT result in Problem 1.