Homework #2

Principles of Communications, Fall 2009

Due on Oct. 19, 2009

1. Problem 2.28 on page 104. (11%)

2. Problem 2.46 on page 105. (11%)

3. Problem 2.54 on page 107. (11%)

4. Problem 2.56 on page 107. (11%)

5. Problem 2.58(a) on page 107. (11%)

6. Problem 2.69 on page 109. (11%)

7. Problem 2.70 on page 109. (11%)

8. Compute the FFT (DFT) of a rectangular pulse and plot its magnitude and phase spectra for the following cases. (Ref: Computer Example 2.3 on page 93) The rectangular pulse has unit height (height =1) and unit duration (width=1) and is centered at 0 (coordinate). (23%)
   (a) Take 8 samples at nT, T=1/4, n=-3,…,4.
   (b) Take 256 samples at nT, T=1/128, n=-127,…,128.
   (c) Take 256 samples at nT, T=1/64, n=-127,…,128.