EE-125 Lecture 4 Assignment
Due Monday, Sept 20

Proakis & Manolakis,Chapter 3 and 4 (section 4.1 and 4.2)

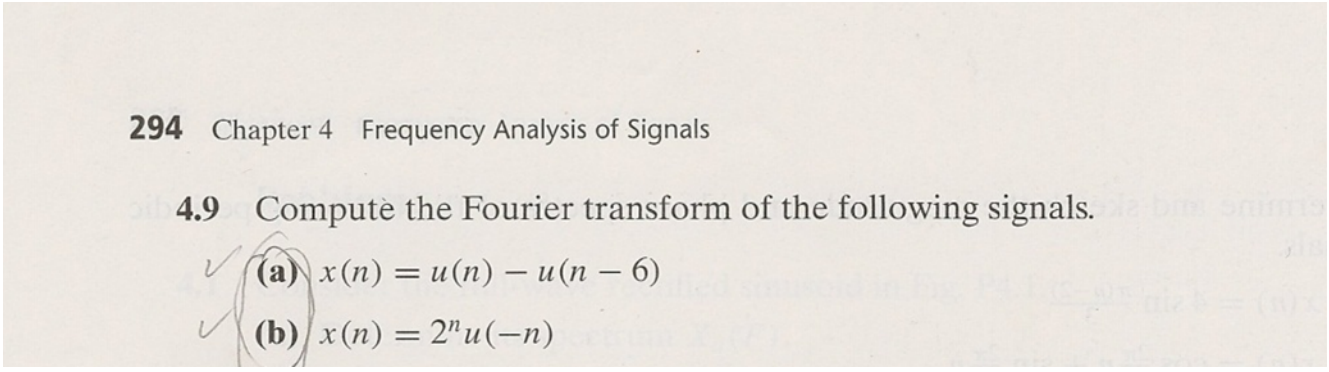
Problems:

4.9, a) and b) (Hints: On both of these, you could grind through the math, but it may be worth thinking awhile about Fourier transform pairs and properties summarized in Table 4.5 and Fig 4.6. In particular: for a) before crunching through the math, plot out what this function looks like. Are there Fourier transform pairs and properties that can help? b) remember similar problems we saw in class for Z-transform.) For part a only, sketch the magnitude of the transform (not phase)

4.10, a) and b) (photo of problem in Lecture 4 folder)
(for b) think about convolution /multiplication

4.14, a), b) and e) (photo of problem in Lecture 4 folder)
These use Fourier transform properties (Tables 4.4 and 4.5). If you think about the properties carefully, you should be able to solve these without a lot of calculation.

If for b), you get down to two possible answers and are not sure how to proceed, look again at your answer to a) (and if this hint is confusing, just ignore it!)



294 Chapter 4 Frequency Analysis of Signals

4.9 Compute the Fourier transform of the following signals.

(a) $x(n) = u(n) - u(n-6)$

(b) $x(n) = 2^n u(-n)$