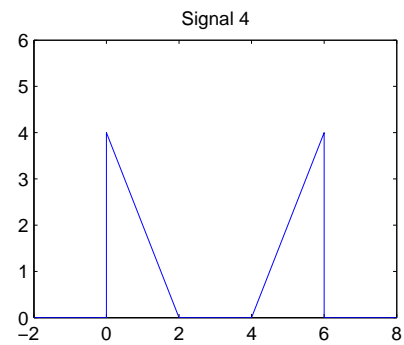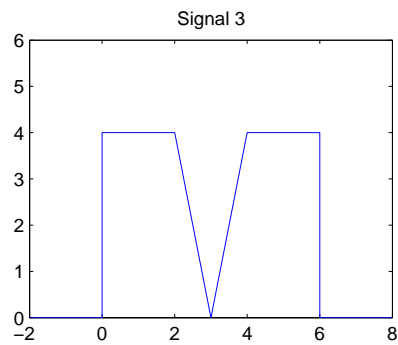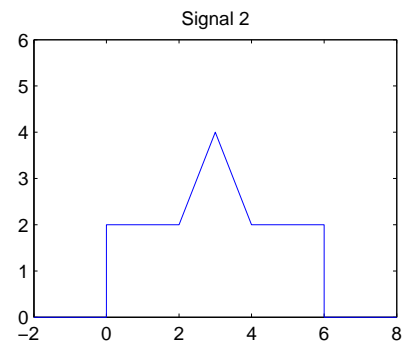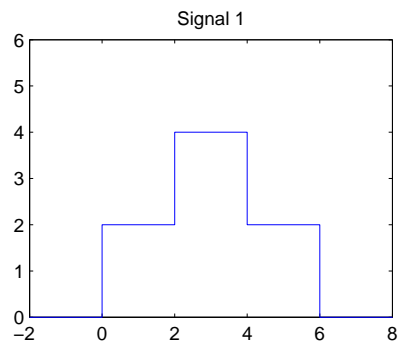**EE 341 - Homework 1**

Due August 31, 2005

1. Problem 1.1. Instead of the figures in the text, use the followin figures:

2. Problem 1.3 (d) (e) (f) (j).

3. Problem 1.4 (b) (c). Do part (e) for signals (b) and (c).

4. Problem 1.7. Do parts (a) and (b) for signals (b) and (d).

5. Determine if the following signals are periodic. If they are, determine their fundamental period and fundamental frequency.

   (a) $x(t) = \cos(\frac{4}{5}t)$

   (b) $x(t) = \cos(\frac{4}{5}t) - 2\sin(\frac{3}{4}\pi t)$

   (c) $x(t) = \cos\left(t + \frac{\pi}{4}\right) + \sin\left(2t + \frac{1}{4}\right)$

   (d) $x(t) = \cos^2\left(\frac{\pi}{8}t\right)$

   (e) $x[n] = \cos(\frac{4}{5}n)$

   (f) $x[n] = \cos(\frac{4}{5}\pi n) - 2\sin(\frac{3}{4}\pi n)$

   (g) $x[n] = \cos\left(\frac{\pi}{3}n\right) + \cos\left(\frac{\pi}{4}n\right)$

6. Problem 1.10 (c) (e) (g) (i).

7. Problem 1.16.

8. Problem 1.22 (a) (c).