ECE 220 Signals and Systems I

**Problem Set 3**

Fall 2006

**Issued:** Friday, September 15, 2006
**Due:** Wednesday, September 20, 2006

Reading in *Lathi*

9/18/06 — Sections 2.4-2.5
9/25/06 — Sections 2.6-2.9
10/2/06 — Sections 4.1-4.2

**Exercise E1.18** on page 116 in *Lathi*
Note: the answer to this exercise is provided in the book. You must show how this answer is obtained.

**Problem 2.3-2** in *Lathi*

**Problem 2.4-16** in *Lathi*
Provide the necessary sketches to support your answer.

**ECE-220 Problem 3**
Consider the signals $x(t)$ and $h(t)$ defined below.

$$x(t) = u(t - 2) - u(t - 3)$$
$$h(t) = 9(u(t + 3) - u(t - 3))$$

(a) Sketch $x(t)$ and $h(t)$.

(b) Compute $y(t) = x(t) * h(t)$ (the convolution of $x(t)$ and $h(t)$). Provide the necessary sketches to support your answer.