

**ECE 366 HW #5**  
**Fall 2008**  
**Due 10/03/08**

- Office Hours: MW 3:30-5:00 p.m.
  - The following questions are from Lathi's book, Second Edition.
  - Read Chapter 2.5, 2.6, and 6.3.
  - You should turn in your solutions to all of the problems.
1. [30] 2.5-1 a,b Find the zero-state and the zero-input responses.
  2. [20] 2.6-1
  3. [25] Consider a LTI system with transfer function  $H(s) = \frac{s+5}{s^2+2s+5}$ . Given the following inputs, find the zero-state response of the system in each case. Verify your results using MATLAB (Hint: Use polyval function.).
    - a)  $x(t) = 4$
    - b)  $x(t) = e^{-2t}$
    - c)  $x(t) = 5 \sin(4t)$
    - d)  $x(t) = 4e^{j3t}$
  4. [15] 6.3-3 a,b,c
  5. [10] 6.3-7 (a)