ECE 202 HW #4
Spring 2007
Due 02/16/07

- Office Hours: MW 3:30-5:00 p.m.
- Read Chapters 9.1-9.3 from the book and the lecture notes.

1. [50] Find the Laplace transform of the following signals using transform pairs and properties (Tables 9.1 and 9.2 in the book) and locate the poles and zeros of F(s).

   a) $f(t) = A\delta(t) - 5te^{-t}u(t)$

   b) $f(t) = e^{-4t}u(t) + 5\int_0^t \sin(4x)dx$

   c) $f(t) = e^{-50(t-2)}u(t-2)$

   d) $f(t) = \frac{d}{dt}(10e^{-5t}\cos(20t))$

   e) $f(t) = [5 + e^{-20t} - 6\cos(10t) + 2\sin(10t)]u(t)$

   f) $f(t) = e^{-3t}[u(t-1) - u(t-5)]$

   g) $f(t) = 2t^2[u(t) - u(t-4)]$

2. [15] 9.13

3. [15] 9.14

4. [20] Explain whether the Laplace transform of e^{t^2} exists or not.