MATH 215/255, SECTION 102, Homework - 7,
Due: 2nd Nov. 2012

Do the following problems from the textbook.

Section 3.7: 2, 3, 5, 11, 21.

Section 3.8: 5 (solution not required), 12.

In addition, do the following problems:

Extra Problem - 1 Consider the equation $y''+y'+2y = F_0\cos(\omega t)$, F_0=constant. Obtain the steady-state response as a function of ω. At which value of ω is the maximum of this amplitude obtained. **Note:** Solve the problem without assuming numerical values for F_0 and ω.

Extra Problem - 2 Find the general solution of the following differential equation of fourth order:

(i) $y'''' - 4y = 0$,

(ii) $y'''' - 4y'' + 3y = t^2$.

Hint: The above equations have constant coefficients. Try solving them in exactly the same way you would for a second order equation with constant coefficients.