*Student Name:*_____ *Student Number:* _____ *Serial No.:*_____

Instructor: M. Z. Abu-Sbeih   *Math - 260.1*   *Quiz No. 4*   *Date: 6-8-2005.*

**Show all your work. No credits for answers without work.**

Problem 1: given that $y = e^{-3x}$ is a solution of the homogeneous equation
$y''' + 5y'' + 8y' + 6y = 0$, find the general solution.

Problem 2: Set up the appropriate form of the particular solution y_p (DO NOT FIND THE COEFFICIENTS)
$(D^2 + 2D)(D^2 + 1)y = 3 + e^{-2x} + \cos x$

Problem 3: Use the method of undetermined coefficients to find the solution of
$y'' + y = \sin x + x \cos x$