Notes for lecture 8

1. Date: May 30th. This lecture is based on Sections 4.3 and 4.4 of Chapter 4 of the main textbook (see Chapter4.3-4.4.pdf). These sections are extensions of Sections 3.5 and 3.6.
2. Section 4.3 (see Chapter4.3-4.4.pdf and Lecture8.pdf) consider solutions of nonhomogeneous (with non-zero right hand side) linear differential equation of n-th order, where n>2, by the method of undetermined coefficients. The key point is as follows.
    a. Counting roots and their multiplicity is important. Table 3.5.1 (see Chapter 3.5) is instrumental and shall be in constructing partial solution. Note, however, that now s is not limited to be less or equal to 2 (as was the case for 2nd order equations).
3. Section 4.4 (see Chapter4.3-4.4.pdf and Lecture8.pdf) consider solutions of nonhomogeneous (with non-zero right hand side) linear differential equation of n-th order, where n>2, by the method of variation of parameters. The key point is as follows.
    a. The extension to n-th order is pretty much straightforward. Again, we are using Cramer's rule of solving linear equations.
4. Explanation of the content is accompanied by examples. In addition, you can look at sample problems (see SampleProblems8.pdf file)
5. The deadline for submitting homework, Assignment 8 (refer to Assignment8.pdf) is June 6th, 13:00. Solutions to this assignment (refer to Assignment8_sol.pdf) will be uploaded to Resource Section on June 6th after the class.