Reading
Sections 3.6 (may omit pg. 182-183), 3.7, 3.8, 3.9.

Suggested Problems
Section 3.6: Exercise 1,3,7,8,13
Section 3.7: Exercise 5,7,8,13,14.

Problems to be handed in in class on Friday February 16-th

Problem 1 Consider the differential equation
\[ t^2 y'' - ty' + y = 0, \]
the function \( y_1 = t \) is a solution of this equation. Use reduction of the order to find another solution \( y_2 \) so that \( y_1 \) and \( y_2 \) form a fundamental set of solutions. Use \( y_1 \) and \( y_2 \) to write the general solution of this equation.

Problem 2 Use the method of undetermined coefficients to find the general solution of the equation
\[ y'' - 4y = e^{2t} + t \sin(t). \]

Problem 3 Use the method of variation of parameters to find the general solution of the equation
\[ y'' + y = \tan(t). \]