Math 385, Section M1

Homework 6

Due March 8, 2007, before class

**Problem I:** Textbook page 97, Exercises: 21, 22.

**Problem II:** Show that $y_1 = e^x$, $y_2 = e^{-x}$ are solutions of
\[ y'' - y = 0. \]

Can you find other solutions? Can you find the solution that satisfies the initial value problem $y(0) = 0$, $y'(0) = 5$.

**Problem III:** Repeat Problem II for the exercises 3 and 13 in the textbook at page 155-156.

**Problem IV:** Textbook page 156, Exercise: 17.

**Problem V:** Determine whether $\sin x$, $\cos x$ are linearly dependent.

**Problem VI:** Textbook page 156, Exercises: 24, 26.