## Math 242, Exam 3, Spring 2010

Write everything on the blank paper provided.

**You should KEEP this piece of paper.**

If possible: turn the problems in order (use as much paper as necessary), use only one side of each piece of paper, and leave 1 square inch in the upper left hand corner for the staple. If you forget some of these requests, don't worry about it – I will still grade your exam.

The exam is worth 50 points. There are **4** problems.

SHOW your work. $\boxed{CIRCLE}$ your answer. Write **coherently**.

**No Calculators or Cell phones.**

I will post the solutions later today.

1. (12 points) Find the general solution of $y'' - 4y = 2e^{2x}$ .

2. (12 points) Find the general solution of $3y'' + y' - 2y = 2\cos x$ .

3. (13 points) Solve the Initial Value Problem $2y'' + 12y' + 50y = 0$ , $y(0) = 0$ , $y'(0) = -8$ .

4. (13 points) Find the general solution of $9y''' + 12y'' + 4y' = 0$ .