

**Math 142, Exam 1, Fall 2013**

Write everything on the blank paper provided. **You should KEEP this piece of paper.** If possible: return 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. Your work must be coherent, complete, and correct.

*CIRCLE* your answer. **CHECK** your answer whenever possible.

**No Calculators or Cell phones.**

1. (9 points) Define the definite integral. Give a complete definition. Be sure to explain all of your notation. **Write in complete sentences.**
2. (9 points) Find  $\int \sin^4 x \cos^5 x dx$ . **Check your answer.**
3. (8 points) Find  $\int \frac{dx}{4x^2+12x+13}$ . **Check your answer.**
4. (8 points) Find  $\int \frac{dx}{x^2+x-12}$ . **Check your answer.**
5. (8 points) Find  $\int_{-2}^4 \frac{dx}{(x-1)^2}$ .
6. (8 points) Find  $\int e^{2x} \cos(3x) dx$ . **Check your answer.**