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. $\boxed{CIRCLE}$ 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.**