Math 142,   Exam 1,   Fall 2016

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. Each problem is worth 10 points. Please make your work coherent, complete, and correct. Please $\boxed{CIRCLE}$ your answer. Please **CHECK** your answer whenever possible.

The solutions will be posted later today. The quiz on Tuesday will be one problem from this exam.

No Calculators or Cell phones.

(1) Find $\int \cos^5 x \, dx$. **Please check your answer.**

(2) Find $\int \cos^4 x \, dx$.

(3) Find $\int \dfrac{dz}{e^z + e^{-z}}$. **Please check your answer.**

(4) Find $\int e^{5x} \sin x \, dx$. **Please check your answer.**

(5) Find the area of the region bounded by $x + 4 = y^2$ and $y = x + 2$. **Please draw a meaningful picture.**