Math 150A, Section 2, Spring 2007
Homework Assignment 6

Name:

Show your work. No work, no credit.

1. (a) Use Part 2 of the Fundamental Theorem of Calculus to evaluate

   - $\int_1^2 \frac{3}{t^4} dt$

   - $\int_{-1}^3 (x-2)(x-3) dx$

(b) Use Part 1 of the Fundamental Theorem of Calculus to find the derivative of

- $\int_x^2 \cos(t^2)dt$

- $\int_3^{\sqrt{x}} \frac{\cos(t)}{t}dt$

2. Express the limit $\lim_{n\to\infty} \sum_{i=1}^{n} \big(\cos(x_i^*) - 3x_i^*\big)\Delta x$ as a definite integral on the interval $[0, \pi/2]$.

3. Use the Fundamental Theorem of Calculus to evaluate each of the following or explain why the theorem does not apply.

   - $\int_0^1 x^2(2+x^5)dx$

   - $\int_{-3}^2 \left(t^{-5/2} - 2t^{7/3}\right)dt$

- $\int_{-\pi/4}^{3\pi/2} 9\sin(\theta)d\theta$

- $\int_{1}^{3} \frac{4x^{3/2}-1}{x^2}dx$

Pledged
Honor code: I have neither given nor received help on this assignment.