NAME: _____

MATH 12002 **HOMEWORK #7 (16 pts)** **SPRING 2009**

SHOW ALL WORK FOR FULL CREDIT — PLEASE CIRCLE YOUR FINAL ANSWER

DUE: TUESDAY, APRIL 7, 2009 AT THE BEGINNING OF CLASS

(2 pts each) For #1–#7, evaluate the following integrals.

1. $\displaystyle\int_1^2 \left(x + \frac{1}{x}\right)^2 \, dx$

2. $\displaystyle\int_{-2}^5 \left|x^2 - 2x - 3\right| \, dx$

3. $\displaystyle\int_{-8}^{-1} \frac{x - x^2}{2\sqrt[3]{x}}\, dx$

4. $\displaystyle\int \cot^2\theta\, d\theta$ (HINT: use a trig identity)

5. $\int \cos^8 9x \, \sin 9x \, dx$

6. $\int 3x^6(x^7+9)^4 \, dx$

7. $\displaystyle\int \left(x^{\frac{3}{4}} - 2\sqrt{x} + \frac{x^3}{4} + 5 \right) \, dx$

8. (2 pts) Use Part I of the Fundamental Theorem of Calculus to find the derivative of the following function.

$$y = \int_{\sin x^4}^{5} \frac{11t}{\sqrt{4t^2 + 7}} \, dt.$$