Calculus II, Exam II, Spring 2009

Name:_____

Student signature:_____

Show all your work and give reasons for your answers. Good luck!

Part I

Each problem in part I is worth 5 points; Show your work!!

Evaluate the following integrals

(1) $\int_0^1 x(x^{25}+1)\,dx$

(2) $\int \frac{x^2}{\sqrt[5]{2x^3+1}}\,dx$

(3) $\int_0^{\pi} \sin^2(x)\, dx$

(4) $\int x \sin(x)\, dx$

(5) $\int \frac{x^3+\sqrt{x}}{x}\, dx$

(6) $\int \ln(x)\,dx$

(7) If $F(x) = \int_1^x \sqrt{t^3+1}\,dt$, find $F'(x)$

(8) Set up a Riemann sum with 3 terms, using the midpoint rule, for $\int_1^4 \frac{1}{x}\,dx$

Part II

Each problem in part II is worth 15 points. Justify all your work for full credit!!

Evaluate the following integrals.

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

10. $\int e^{2x}\sin(x)\,dx$

11. $\int_0^1 \frac{1}{x^2+4x-5}\,dx$

12. $\int \frac{1}{(x+1)(x-1)^2}\,dx$