

## Math 2 – Winter 2006

## Even More Fun With Integration!

**Instructions:** Working in groups of two or three, complete problems 1-8. In addition, choose one of the challenging problems to do (9 or 10). You may complete both of the challenging problems for bonus points. Your solutions are due on Monday, March 6th, at the start of class. While you are encouraged to complete this project in groups, **each person is responsible for handing in their own solutions.**

1.  $\int e^{x^2} e^x (4x + 2) dx$

2.  $\int z 10^{1-z} dz$

3.  $\int (2x + 3)e^x dx$

4.  $\int \sin^3(2x) dx$

5.  $\int_1^2 \frac{\ln x}{x^2} dx$

6.  $\int e^x \cos^7(e^x) dx$

7.  $\int \cos(2 \sin(x)) \cos(x) dx$

8.  $\int \frac{1}{\sqrt{x^2 - a^2}} dx$

9. \*  $\int x^5 e^{x^2} dx$

10. \*  $\int \frac{1}{x^2 \sqrt{x^2 + 4}} dx$

\* denotes a more challenging integral.