Homework 1

Math 232 section 006

August 24, 2007

Note: This homework is due on Thursday, August 30th (in class). Please print this out, and do all calculations on the printout. Please, please, please staple all sheets together. Remember, no points if I can't read your work.

1. Find $g'(x)$ if
   - $g(x) = \int_0^x \ln t \; dt$
   - $g(x) = \int_x^a \frac{1}{1+t^2} dt$
2. Evaluate the integrals:
   - $\int \left(4x^4 - \frac{2}{x}\right) dx$
   - $\int_0^{\pi/2} (2\sin\theta - \pi)\, d\theta$
   - $\int x e^{-x^2} dx$

- $\int_1^{10} \frac{3x}{x^2+1} dx$

- $\int_1^{10} \frac{3}{x^2+1} dx$

Bonus: Read sections 5.1 and 5.2 and then evaluate the following integral using limits of Riemann sums:

$$\int_1^4 \left(x^2 + 1\right) dx$$