

MATH 227: Calculus II

**MIDTERM I**

Spring 2007

NAME :

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*NOTE:* There are 5 problems on this midterm (total of 6 pages). Use of calculators to check your work is permitted; however, in order to receive full credit for any problem, you must show work leading to your answer. You have 50 minutes to complete this test.

Problem	Possible points	Score
1	20	
2	20	
3	20	
4	20	
5	20	
Total	100	

**Problem 1.** (20pts) Evaluate the definite integral

$$\int_0^2 \frac{x \, dx}{1 + x^2}$$

**Problem 2.** (20pts) Find the area enclosed between the curves  $y = x^2 - 1$  and  $y = 2x + 2$ .

**Problem 3.** (20pts) Find the volume of the solid obtained by rotating the region bounded by the given curves about the  $x$ -axis:

$$y = x^2, \quad x = 2, \quad y = 0$$

**Problem 4.** (20pts) Find the average of the function

$$f(x) = 2x - x^2$$

on the interval from 0 to 2.

**Problem 5.** (20pts) Evaluate the definite integral

$$\int_0^{\pi} x \sin x \, dx$$