My NAME is:

Problem	1	2	3	4	Total
Score					

MAT 126
Calculus B
Midterm 2

April 5, 2000

Show all your work on these pages! Total score = 100

1. (30 points) Evaluate each of the following definite integrals.

   (a) $\int_0^1 \sin(\pi x)\, dx$

   (b) $\int_0^1 x\sqrt{1-x^2}\, dx$

   (c) $\int_{-1}^1 xe^x\, dx$

2. (30 points) Find the following antiderivatives.

(a) $\int x^2 \sin x \; dx$

(b) $\int \dfrac{x-1}{x^2+1} \; dx$

(c) $\int e^{-x} \sin(2x) \; dx$

3. (20 points) The function f is given by the table of values below.

x	0	0.5	1	1.5	2	2.5	3
$f(x)$	1	0.96	0.84	0.66	0.45	0.24	0.05

Approximate $\int_0^3 f(x)\,dx$ by using

(a) the left sum with 3 subintervals

(b) the trapezoid rule with 3 subintervals

(c) Simpson's rule with 6 subintervals.

4. (20 points)

Evaluate the following indefinite integrals.

(a) $\displaystyle\int \frac{2\ dx}{(2+x)(3-x)}$

(b) $\displaystyle\int \sin^3(x)\cos^4(x)\ dx$