

**Math 174 02,  
the course of Dr. Mihailovs**

**Midterm 2**

**October 28, 1998**

Name \_\_\_\_\_

Problem	1	2	3	4	5	6	7	8	9	Extra	Total
Points											

1. Evaluate  $y''' - 2y'' - 2y' - 3y$  for  $y = e^{3x}$ .

2. Find  $\lim_{x \rightarrow 0} \frac{\sin x - x}{x^3}$  .

3. Evaluate  $\int \ln(x + \sqrt{x^2 - 1}) dx$  .

4. Find  $\int \sin^6 x \cos^3 x \, dx$  .

5. Find  $\int_0^3 \frac{x^3}{\sqrt{9-x^2}} \, dx$  .

6. Find  $\int \frac{x^4+2x^3-8x+16}{x^3-4x} dx$  .

7. Evaluate  $\int \frac{dx}{1+\sqrt{3x-2}}$  .

8. Solve the initial-value problem  $y' = \frac{y}{1+x^2}$  ,  $y(0) = 1$  .

9. Use Simpson's Rule with  $n = 4$  to estimate the length of the curve  $y = 2 \cos x$  ,  $-\pi/3 \leq x \leq \pi/3$  .