

**Math 173 02,
the course of Dr. Mihailovs**

Midterm 1

February 19, 1999

Name _____

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

1. Find $\lim_{x \rightarrow 1} \frac{x^2 + 2x - 3}{x^2 - 1}$.

2. Find $\lim_{x \rightarrow 2} \frac{\sqrt{2x} - \sqrt{x+2}}{\sqrt{3x-2} - \sqrt{x+2}}$.

3. Use the Squeeze Theorem to find $\lim_{x \rightarrow 0} x^2 \sin \frac{\pi}{2x}$.

4. Find $f'(x)$ for $f(x) = \frac{2\sqrt{x}}{1+x}$.

5. Find $f'(x)$ for $f(x) = \cos(2x + 3)$.

6. Find an equation of the tangent line to the curve $y = x \tan 3x + \sin 2x$ at the point $(0, 0)$.

7. Find y' if $x^4 + 2y^2 = 3$.

8. Find the 100th derivative of $f(x) = x^{91} - 2x^{19} + 1$.

9. Find an approximate value for $\sqrt{102}$.