

**Math 173 04,  
the course of Dr. Mihailovs**

**Midterm 1**

**September 18, 1998**

Name \_\_\_\_\_

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

1. Find  $\lim_{x \rightarrow 1} (3x + 2)$ .

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

3. Find  $\lim_{x \rightarrow 4} \frac{\sqrt{x}-2}{x-4}$  .

4. Find  $\lim_{x \rightarrow 1} \frac{\sqrt{4x} - \sqrt{3x+1}}{\sqrt{2x+2} - \sqrt{x+3}}$ .

5. Find vertical asymptotes for  $y = \frac{1}{x^2+x}$ .

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

7. Find  $f'(x)$  for  $f(x) = x^7 + x + 1$  .

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

9. Find an equation of the tangent line to the curve  $y = x^4 + x$  at the point  $(0, 0)$  .