

Math 140, Section 5

Quiz #2

January 19, 2001

Note: Calculators are not allowed.

1. It can be shown that $\lim_{x \rightarrow 1} \frac{2x^2 - x - 1}{x - 1} = 3$. In terms of the formal definition of limits, this means that for all $\epsilon > 0$ there exists $\delta > 0$ such that for all x , $0 < |x - 1| < \delta$ implies $\left| \frac{2x^2 - x - 1}{x - 1} - 3 \right| < \epsilon$. If $\epsilon = 0.01$, find a corresponding δ .

2. What can you say about one-sided limits of $\frac{1}{x}$ as $x \rightarrow 0$?