

**Take Quiz 2**  
**Due Wednesday, November 6**  
**Math 251 Lecture 01**

You will have one more attempt to improve your score on this quiz. Each attempt replaces the previous quizzes. Good luck!

[5 pts]

1. Let  $f(x) = 2x - 1$ ,  $a = 0$  and  $L = -1$ . Find a number  $\delta > 0$  such that if  $|x - a| < \delta$ , then  $|f(x) - L| < 0.5$ .

[5 pts]

2. Use the formal definition of the limit to verify:

$$\lim_{x \rightarrow 0} x^2 = 0.$$

[5 pts]

3. If  $\lim_{x \rightarrow a} f(x) = L$  and  $\lim_{x \rightarrow a} g(x) = M$  prove that  $\lim_{x \rightarrow a} f(x)g(x) = LM$ . For hints, see number 33 on page 94.