Math 171 - Quiz 2

Name _____

September 2, 2010

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (3 points) Use a table of values to estimate the following limit. Your table must show function values at six or more points.

$$\lim_{x \to 0} \frac{\tan 3x}{5x \cos x}$$

2. (2 points) Why can't the limit laws be used to evaluate the following limit? Use a graph or table (you need not show work) to estimate the limit.

$$\lim_{x \to 3} \frac{2x^2 - 18}{x - 3}$$

3. (3 points) Evaluate each limit analytically. DO NOT USE A CALCULATOR.

   (a) $\lim_{x \to 4} (5\sqrt{x} - \sin(\pi x) + x^2 - 1)$

   (b) $\lim_{x \to 1} \frac{x^5 - 7x}{2x^2 - x}$

4. (2 points) In which of the four ways does the following limit fail to exist? Briefly explain your reasoning.

$$\lim_{x \to 0} \frac{(x^3 + 1)|x|}{x}$$