Math 131 - Quiz 1

Name _____

January 23, 2020

Score _____

Show all work to receive full credit. Supply explanations when necessary. This quiz is due no later than 3:15pm on January 28.

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1. (2.5 points) Use a table of values to estimate the following limit. Your table must show function values at six or more points. (Be in radian mode!)

$$\lim_{x \to 0} \frac{\tan 2x}{5x \cos 7x}$$

2. (2.5 points) Use a table of values to estimate the following limit. Your table must show function values at six or more points.

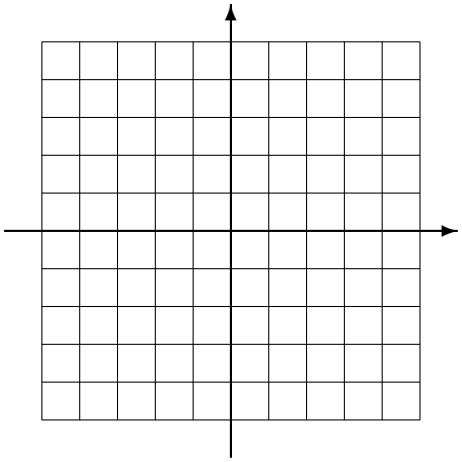
$$\lim_{x \to 3} \frac{e^{x^2} - e^9}{x - 3}$$

3. (2.5 points) We discussed four common ways a limit can fail to exist. In which of the four ways does the following limit fail to exist? Briefly explain your reasoning.

$$\lim_{x \to 0} \frac{(5x^2 + 6)|x|}{2x}$$

4. (2.5 points) Carefully sketch the graph of the following piecewise-defined function. Then use your graph to find each limit. Provide a short explanation for each answer.

$$f(x) = \begin{cases} e^x - 1, & x < 0 \\ 4 - x^2, & x \geq 0 \end{cases}$$



(a) $\lim_{x \to 0} f(x)$

(b) $\lim_{x \to 2} f(x)$