

Math 131 - Quiz 1

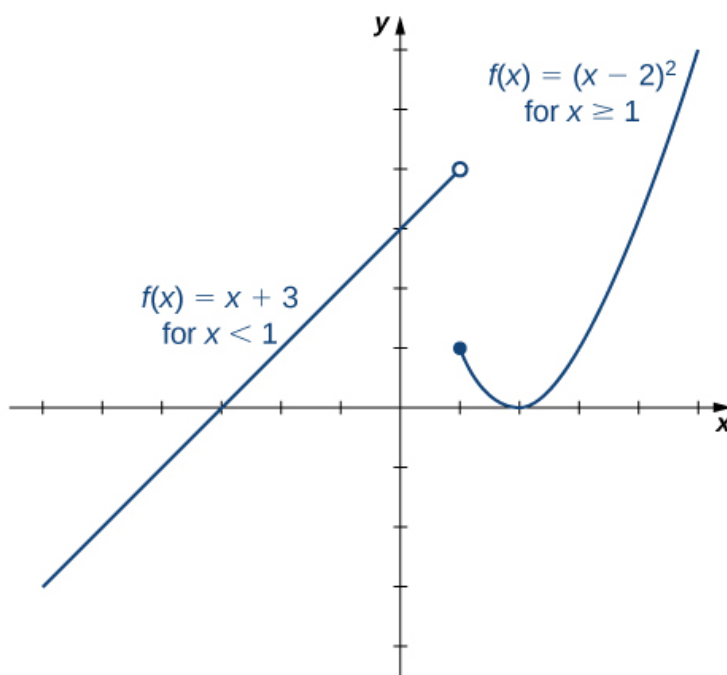
August 19, 2026

Name _____

Score _____

Show all work to receive full credit. Supply explanations where necessary. This quiz is due August 24.

1. (3 points) The graph of the function f is shown below. Use the graph to estimate each limit. If the limit does not exist, explain why.



(a) $\lim_{x \rightarrow -4} f(x)$

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

(c) $\lim_{x \rightarrow 1} f(x)$

2. (3 points) Use a table of values to estimate the following limit. Your table must show function values at six or more points.

$$\lim_{x \rightarrow 1} \frac{\tan(5x - 5)}{7 \sin(3x - 3)}$$

3. (4 points) Think about the four common ways that limits can fail to exist. Each limit below does not exist. For each limit, describe the way in which it fails to exist. Show work to support your answer.

(a) $\lim_{x \rightarrow 5} \frac{x + 5}{(2x - 10)^2}$

(b) $\lim_{x \rightarrow 0} \frac{x^3 - 6x}{|x|}$

(c) $\lim_{x \rightarrow 1} \frac{\ln(x - 1)}{5x}$

(d) $\lim_{x \rightarrow 1} f(x)$ where $f(x) = \begin{cases} \cos \pi x, & x < 1 \\ x^2 - 1, & x > 1 \end{cases}$