

# Math 131 - Quiz 1 (IC)

August 24, 2022

Name \_\_\_\_\_

Score \_\_\_\_\_

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

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1. (1.5 points) Use a table of values to estimate the following limit. Your table must show function values at four or more points.

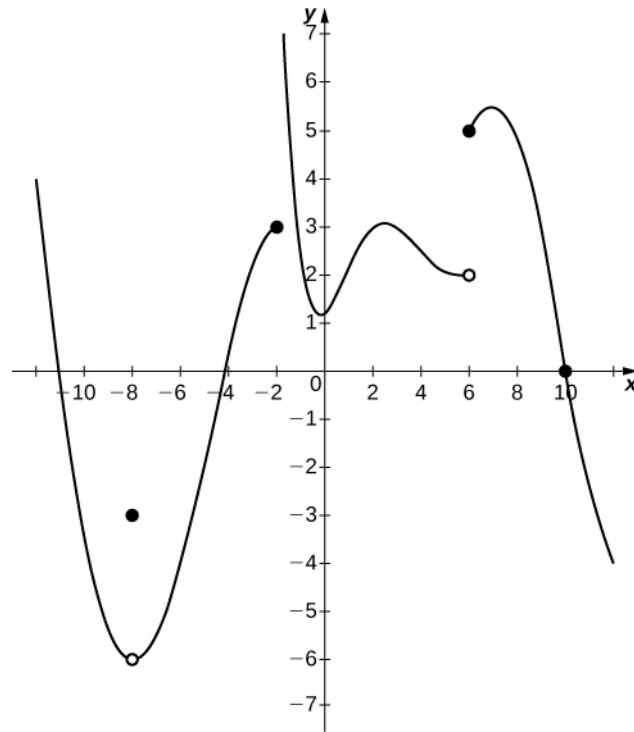
$$\lim_{x \rightarrow 1} \frac{|x|}{x^2 + 4x}$$

2. (1.5 points) Use a table of values to estimate the following limit. Your table must show function values at four or more points.

$$\lim_{x \rightarrow 0} \frac{|x|}{x^2 + 4x}$$

*Turn over.*

3. (2 points) The graph of the function  $f$  is shown below. Use the graph to estimate each limit.



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

(b)  $\lim_{x \rightarrow 6} f(x)$

# Math 131 - Quiz 1 (TH)

August 24, 2022

Name \_\_\_\_\_

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary. This quiz is due August 29.

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1. (2 points) Each limit below does not exist. Explain why, and provide your evidence. (Refer to the four ways that limits may fail to exist.)

(a)  $\lim_{x \rightarrow 5} \left( \frac{x^2 + 7x}{x^2 - 25} \right)$

(b)  $\lim_{x \rightarrow 0} \frac{x}{\ln x}$

2. (3 points) Suppose that  $\lim_{x \rightarrow 2} f(x) = 9$  and  $\lim_{x \rightarrow 2} g(x) = -3$ . Determine each limit.

(a)  $\lim_{x \rightarrow 2} [2f(x) - g(x)]$

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

(c)  $\lim_{x \rightarrow 2} [(x^2 - 2x)f(x)g(x)]$