

# Math 131 - Quiz 2

January 25, 2023

Name \_\_\_\_\_

Score \_\_\_\_\_

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

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1. (4.5 points) For each part of this problem, assume that  $\lim_{x \rightarrow 2} f(x) = 3$ ,  $\lim_{x \rightarrow 2} g(x) = 7$ , and  $\lim_{x \rightarrow 2} h(x)$  exists.

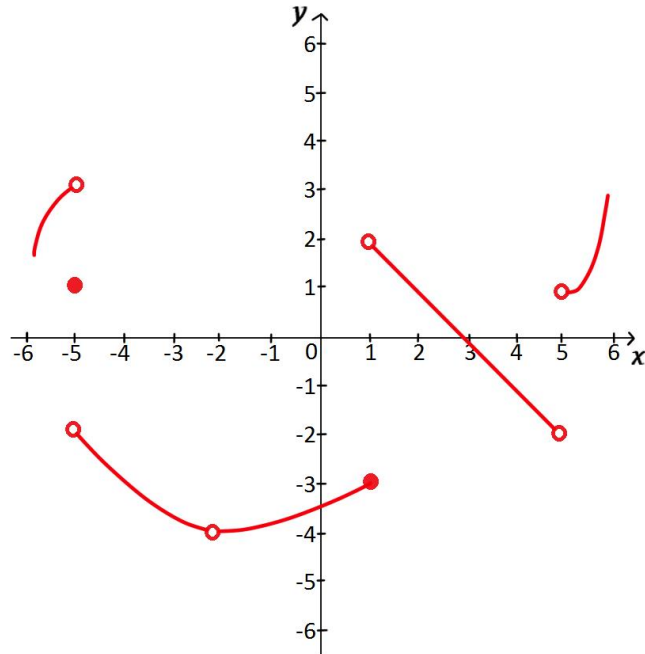
(a) Evaluate  $\lim_{x \rightarrow 2} [5f(x) - xg(x)]$ .

(b) Find  $\lim_{x \rightarrow 2} h(x)$  if  $\lim_{x \rightarrow 2} \frac{g(x)}{h(x)} = \frac{1}{2}$ .

(c) Find  $\lim_{x \rightarrow 2} h(x)$  if  $\lim_{x \rightarrow 2} \frac{f(x)}{h(x)}$  does not exist.

*Turn over.*

2. (5.5 points) The graph of  $y = f(x)$  is shown below. Use the graph to estimate each limit or explain why the limit does not exist.



(a)  $\lim_{x \rightarrow -6} f(x)$

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

(c)  $\lim_{x \rightarrow 3} f(x)$