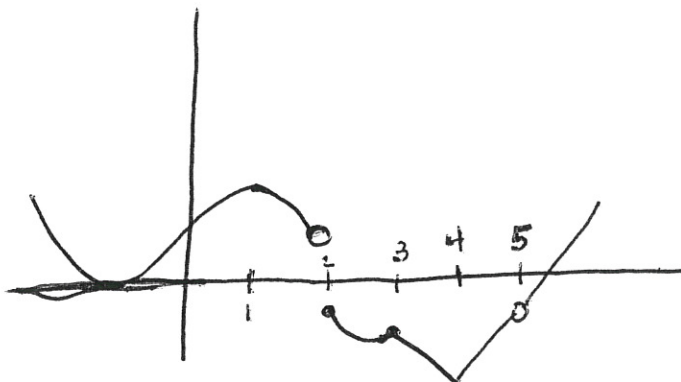


Elements of Calculus I, MATH 180 Quiz 2
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(1) Consider the following graph to answer the following questions.



(a) For which x -values is the function not continuous?

+1 $x = 2 \text{ \& } x = 5$

(b) For which x -values is the function not differentiable?

+1 $x = 2, 3, 4, 5$

(c) Which is larger $f'(0)$ or $f'(1)$?

+1 $f'(0) > f'(1)$

take off
5 if
missing
a value.

(2) Using the four step process, find the derivative of $f(x) = 5x^2$

$$f'(x) = \lim_{h \rightarrow 0} \frac{5(x+h)^2 - 5x^2}{h}$$

$$= \lim_{h \rightarrow 0} \frac{5x^2 + 10xh + 5h^2 - 5x^2}{h}$$

$$= \lim_{h \rightarrow 0} \frac{10xh + 5h^2}{h} = \lim_{h \rightarrow 0} 10x + 5h = 10x$$

5 points
need to
show work
for all
5 points

(3) Find the derivative of $f(x) = \frac{3}{x} - 2x$ using the derivative rules.

+2 $f'(x) = -3x^{-2} - 2$