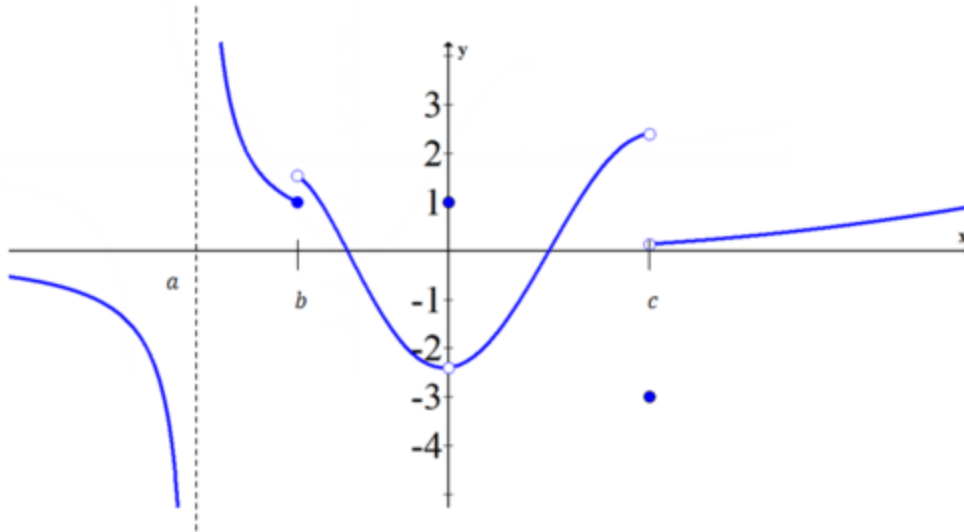


Spiral Review Chapter 3

*If you don't remember how to do something, refresh your memory with notes, khan academy, ask me questions, ask your peers questions.

1. Find the following using the graph below:



- | | |
|------------------------------------|------------------------------------|
| a. $\lim_{x \rightarrow a^-} f(x)$ | d. $\lim_{x \rightarrow c} f(x)$ |
| b. $\lim_{x \rightarrow b^+} f(x)$ | e. $\lim_{x \rightarrow 0} f(x)$ |
| c. $f(c)$ | f. $\lim_{x \rightarrow b^-} f(x)$ |
2. $\lim_{x \rightarrow 8} \frac{x^2 + 64}{x + 8}$
3. $\lim_{x \rightarrow \infty} \frac{(x-2)(3-x)}{2x+1}$

4. What is the definition of continuity? Use Calculus terms and operations in your definition.

5. Find the following using the piecewise below:

a. $f(-4)$

b. $f(2)$

c. $\lim_{x \rightarrow -1^+} f(x)$

d. $\lim_{x \rightarrow 5} f(x)$

$$f(x) = \begin{cases} -x + 1, & x \leq -1 \\ 2, & -1 < x < 3 \\ x^2 - 4, & x \geq 3. \end{cases}$$

- e. Is $f(x)$ continuous everywhere? If not, determine **where** the function is continuous. If the function is discontinuous what **type** of discontinuities does the function contain?
- f. Is $f(x)$ differentiable everywhere? If not, determine where the function is differentiable.