

Limits “Boot Camp” for Calculus

- What is a limit?
- **One-sided limits**
- Properties of limits
- Calculating limits
- Squeeze Theorem
- Infinite Limits
- Limits at Infinity
- Continuity
- Important limits

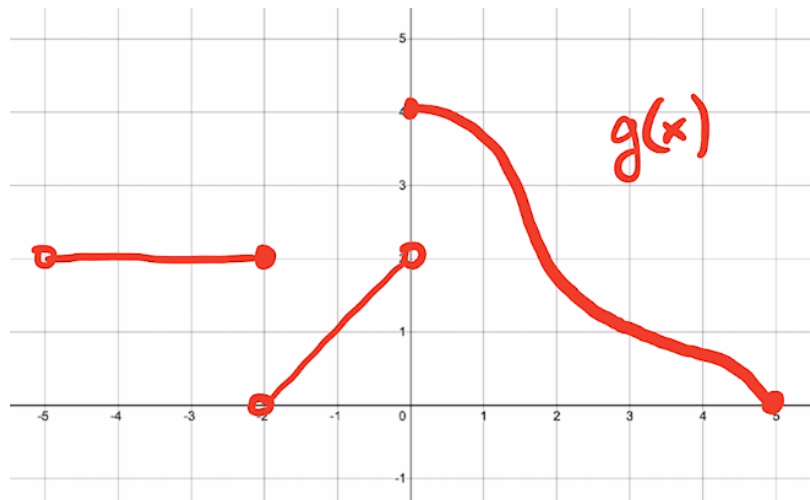
Recall that Limits can FAIL TO EXIST

$$\lim_{x \rightarrow 5} g(x) =$$

$$\lim_{x \rightarrow 0} g(x) =$$

$$\lim_{x \rightarrow -2} g(x) =$$

$$\lim_{x \rightarrow -5} g(x) =$$



Limit from the left

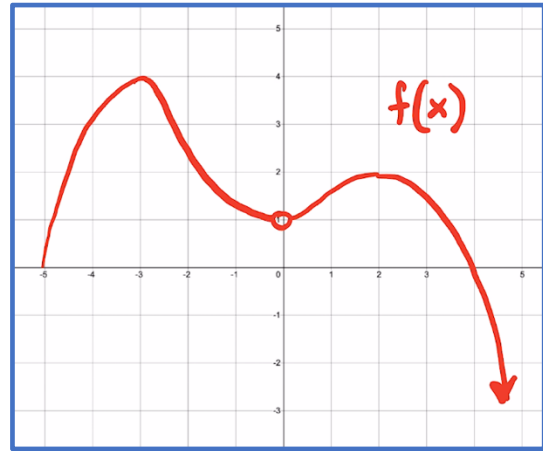
Limit from the right

$$\lim_{x \rightarrow 0^-} f(x) =$$

$$\lim_{x \rightarrow 0^+} f(x) =$$

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

So, if the left and right limits exist...



$$\lim_{x \rightarrow -3^-} f(x) =$$

$$\lim_{x \rightarrow -3^+} f(x) =$$

$$\lim_{x \rightarrow -3} f(x) =$$

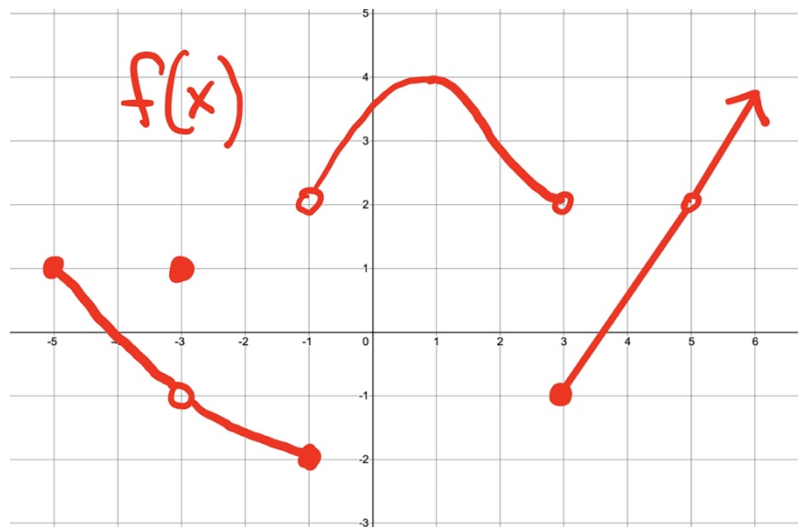
$$f(-3) =$$

$$\lim_{x \rightarrow -1^-} f(x) =$$

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

$$\lim_{x \rightarrow -1} f(x) =$$

$$f(-1) =$$



$$\lim_{x \rightarrow 5^-} f(x) =$$

$$\lim_{x \rightarrow 5} f(x) =$$

$$\lim_{x \rightarrow 5^+} f(x) =$$

$$f(5) =$$