Name: _____ Date: _____

Learning Goal 2.1	Finite limits and continuity.

We will apply these methods to **four** different types of limits:

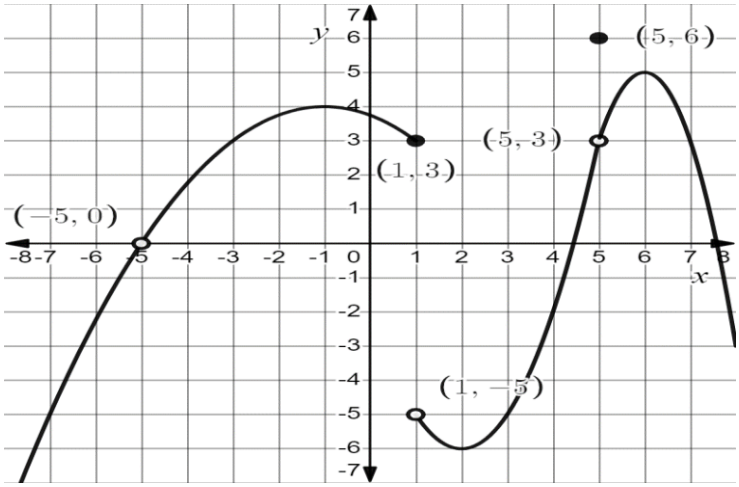
1. 2. 3. 4.

One – Sided Limits

$\lim_{x\to a^-} f(x)$ $\lim_{x\to a^+} f(x)$

Existence of Limits

Example Given the following graph, compute each of the following.



a. $f(-5)$ $\lim_{x\to -5^-} f(x)$ $\lim_{x\to -5^+} f(x)$ $\lim_{x\to -5} f(x)$

b. $f(1)$ $\lim_{x\to 1^-} f(x)$ $\lim_{x\to 1^+} f(x)$ $\lim_{x\to 1} f(x)$

c. $f(5)$ $\lim_{x\to 5^-} f(x)$ $\lim_{x\to 5^+} f(x)$ $\lim_{x\to 5} f(x)$

Assignment # 11 – 14, 23 – 37 Quiz Next Day!

Infinite Limits

Example Find each limit.

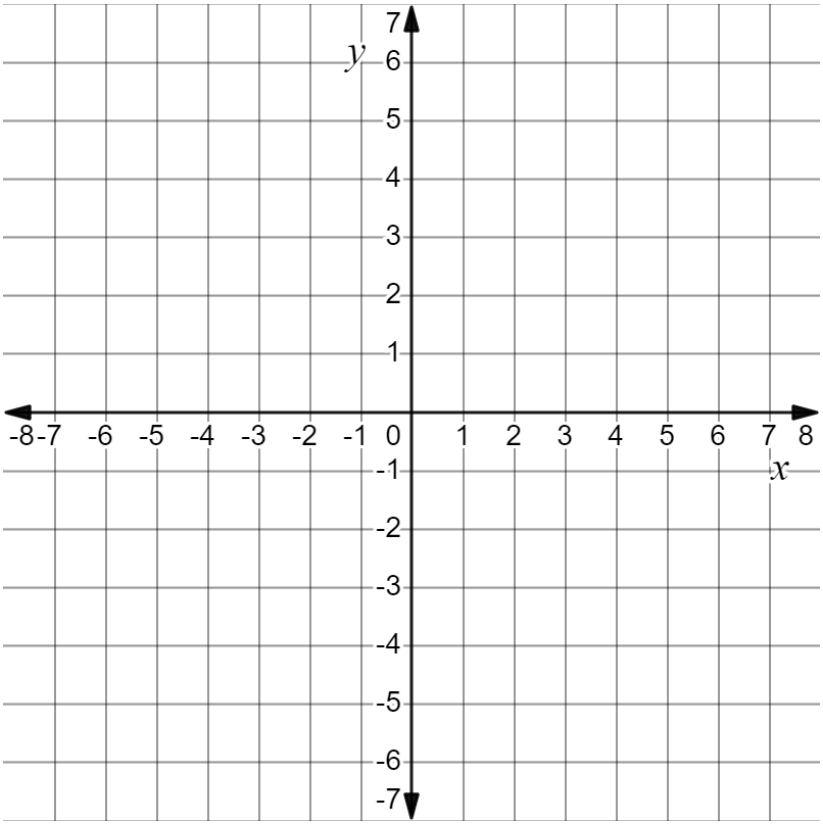
a. $\lim_{x\to 2^-} \frac{x}{x-2}$

b. $\lim_{x\to 2^+} \frac{x}{x-2}$

c. $\lim_{x\to 2} \frac{x}{x-2}$

Example Graph the function and determine the following limits.

$$f(x) = \frac{x^2 - 9}{x^2 - x - 6}$$



a. $\lim_{x\to -2^-} f(x)$

b. $\lim_{x\to -2^+} f(x)$

c. Vertical asymptotes?