Precalculus

12-02 Evaluating Limits

Indeterminant Form

$$\lim_{x\to c} f(x) = \frac{0}{0}$$

Dividing out technique

1. _____
2. _____ common factors
3. Then find the _____

Evaluate $\lim_{x\to 3} \frac{x^2-8x+15}{x-3}$

Rationalizing Technique

- Get _____ out of _____
- _____ by _____ of _____

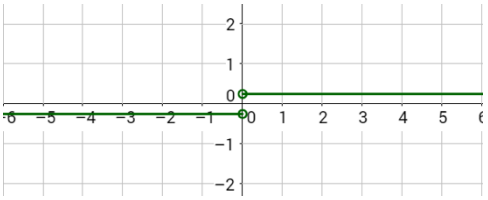
Evaluate $\lim_{x\to 0} \frac{\sqrt{x+9}-3}{x}$

One-sided Limits

- Limit found from only _____ direction
- $\lim_{x\to c^-} f(x)$ - from _____
- $\lim_{x\to c^+} f(x)$ - from _____

Evaluate

$\lim_{x\to 0^-} \frac{|x|}{4x}$



$\lim_{x\to 0^+} \frac{|x|}{4x}$

A limit from calculus

$$\lim_{h\to 0}\frac{f(x+h)-f(x)}{h}$$

- _____ gives indeterminant case

For the function $f(x) = 2x^2 + 1$ find $\lim_{h\to 0}\frac{f(2+h)-f(2)}{h}$