

Friday, September 6

Evaluate the class...what do you like, what would you change, etc.



September 6 - Day 5

Students will verbally explain how to find the limit analytically, graphically and numerically

(using the words:  
evaluate, simplify, right, left, positive, negative,  
infinity, sweeping away the crumbs...)

## Limits Roundup

-3

$$\lim_{x \rightarrow \infty} \frac{4x^2 - 3x + 2}{-3x^2 + 5x + 1} = \lim_{x \rightarrow \infty} \frac{4x^2}{-3x^2} = -\frac{4}{3}$$

→ sweep away crumbs

$$-\frac{4}{3}$$

$$\lim_{x \rightarrow 5} (2x + 1)$$

$$= 2(5) + 1 = 11$$

11

$$\lim_{x \rightarrow \infty} \frac{3x^2 + 1}{x - 2x^2} = \lim_{x \rightarrow \infty} \frac{3x^2}{-2x^2} = -\frac{3}{2}$$



$$-\frac{3}{2}$$

$$\lim_{h \rightarrow 0} \frac{\sin 8h}{h}$$

$$8$$

$$\lim_{x \rightarrow 0^-} \frac{1}{x} = \frac{1}{0} (\Rightarrow \pm\infty)$$

approaching  
from the  
left

$$\rightarrow \frac{1}{-1} \Rightarrow -\infty$$

$-\infty$

$$\lim_{x \rightarrow \infty} \frac{1}{x - 3} = \lim_{x \rightarrow \infty} \frac{1}{x} = \frac{1}{\infty} \Rightarrow 0$$

$0$

$$\lim_{x \rightarrow 0} \frac{x}{x} = \frac{0}{0}$$

$$\lim_{x \rightarrow 0} \frac{x}{x} = \lim_{x \rightarrow 0} 1 = 1$$

1

$$\lim_{x \rightarrow 2004} x = 2004$$

2004

$$\lim_{x \rightarrow -\infty} \frac{3x^4 - 2x + 1}{1 - 7x - 8x^4}$$

$$= \lim_{x \rightarrow -\infty} \frac{3x^4}{-8x^4} = -\frac{3}{8}$$

$$-\frac{3}{8}$$

$$\lim_{x \rightarrow 0} \frac{1 - \cos x}{5x}$$

SKIP

$$0$$

$$\lim_{h \rightarrow 0^+} \frac{|h|}{2h} = \frac{0}{0} \quad \text{||}$$

$$\lim_{h \rightarrow 0} \frac{h}{2h} = \lim_{h \rightarrow 0} \frac{1}{2} = \frac{1}{2}$$



$$\frac{1}{2}$$

$$\lim_{x \rightarrow -4} 17 = 17$$

$$17$$

$$\lim_{x \rightarrow \frac{1}{3}} \frac{9x^2 - 1}{3x - 1}$$



2

$$\lim_{x \rightarrow 0} \frac{4x - 3}{7x + 1} = \frac{4(0) - 3}{7(0) + 1} = \frac{0 - 3}{0 + 1} = \frac{-3}{1} = -3$$