Lesson 5C: Limit Practice (& Some Hard Examples)

LIMITS: Summary Table: To Evaluate Limits

a)Use substitution where possible.

b) For piecewise functions, Substitution or graphing $\Rightarrow \lim_{x\to n^-} = \lim_{x\to n^+}$

c) For the $\frac{0}{0}$ case, try factor, simplifying, rationalize, substitution (u-method)

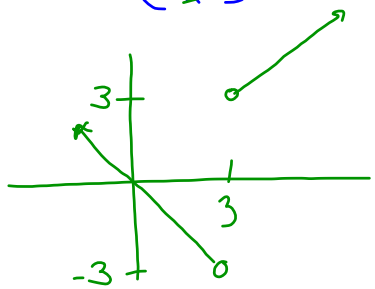
2c) $\lim_{x\to 1^+} \frac{x+1}{(1-x)(1+x)} = -\infty$

$f(x) = \begin{cases} x+1, & x>1 \\ x^2, & x\le 1 \end{cases}$

x	f(x)
1.1	−10
1.01	−100
1.001	−1000
1.0001	−10000

$\lim_{x\to 3} \frac{x|x-3|}{x-3} = DNE$ $\quad \lim_{x\to 3^-} \neq \lim_{x\to 3^+}$

$\lim_{x\to 3}$ $\begin{cases} \frac{x(x-3)}{x-3}, & x>3 \\ \frac{-x(x-3)}{x-3}, & x<3 \end{cases}$



$\frac{-(x-3)}{x-3}$ **