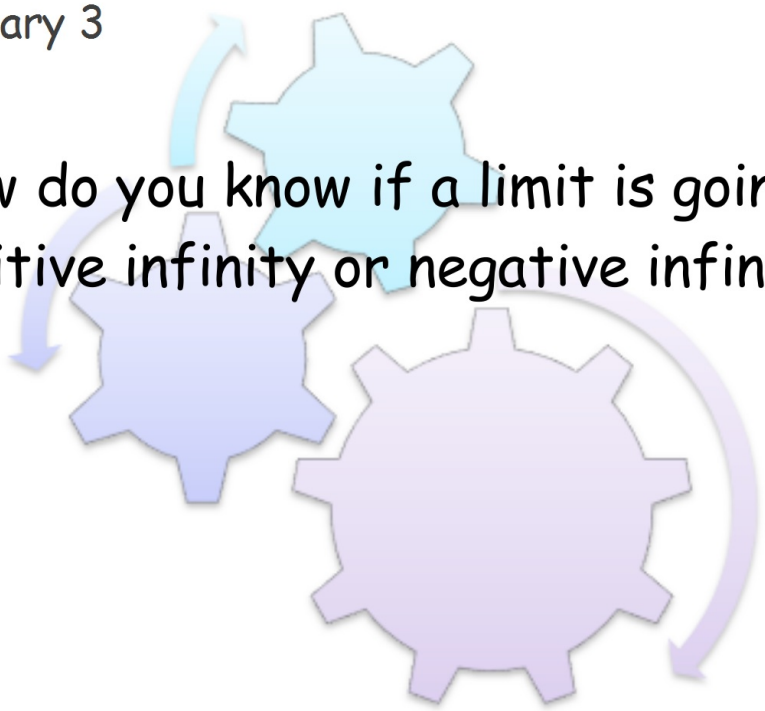
February 3

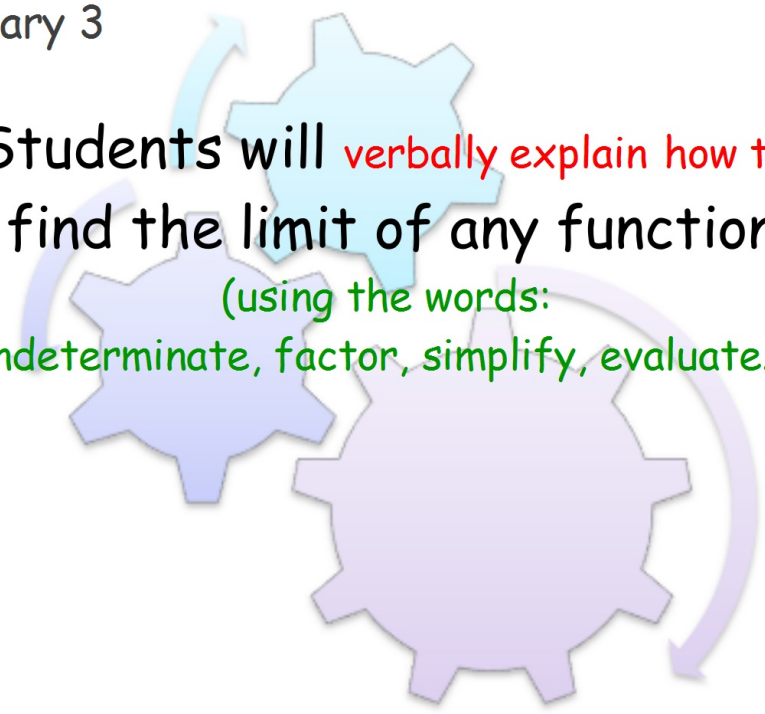
How do you know if a limit is going to positive infinity or negative infinity?



February 3

Students will verbally explain how to find the limit of any function

(using the words:
indeterminate, factor, simplify, evaluate…)



Practice Problem Set 4:

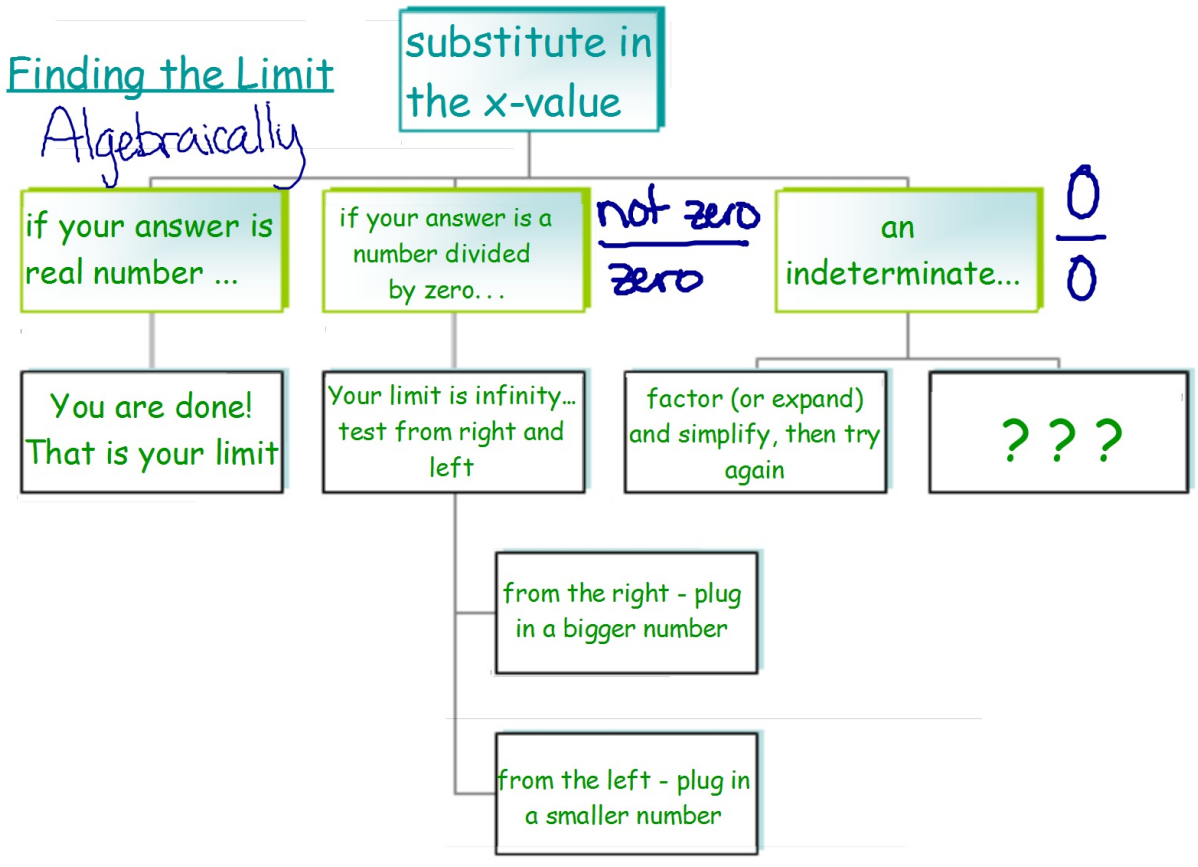
Pg 89 #67-80

pg 94 #5-25 (odd), 45-54

Practice Problem Set 4:

Pg 89 #67-80

pg 94 #1-15, 45-54



$y = \frac{x-15}{(x-3)^2}$

find vertical asymptotes and one-sided limits

(1) Set Denominator equal to zero and solve:

$(x-3)^2 = 0$

$\sqrt{(x-3)^2} = \sqrt{0}$

$x-3=0 \rightarrow x=3$

(2) Determine the value of the numerator when the denominator is zero ($x = a$)

$3-15 = -12$ (negative)

(3) Find the limit from the left

(check the sign of the denominator using a number a little less than a)

$\lim_{x\to 3^-} \frac{x-15}{(x-3)^2} = \frac{-12}{0}$

$(2.9-3)^2 = (-.1)^2 = .01$

(positive)

$\lim_{x\to 3^-} \frac{x-15}{(x-3)^2} = \frac{\text{negative}}{\text{positive}} = -\infty$

(4) Find the limit from the right

(check the sign of the denominator using a number a little ~~less~~ more than a)

$\lim_{x\to 3^+} \frac{x-15}{(x-3)^2} = \frac{-12}{0}$

$(3.2-3)^2 = (.2)^2 = .04$

(positive)

$\lim_{x\to 3^+} \frac{x-15}{(x-3)^2} = \frac{\text{negative}}{\text{positive}} = -\infty$