Let's talk about limits!!!!!

56. n – int

$n \geq 1$

$f(x) = x^n$ odd

n = odd: $f(-x) = -f(x)$

n = even.

$f(x) = x^3$

$f(-x) = (-x)^3$

$f(-x) = -x^3$

54. $P = kV^3$

$V = 10$

$P = 15$

$15 = k(10)^3$

$K = \frac{15}{1000}$

$K = .0015$

$V = 20, 40, 80$

$P = ?$

$P = .0015V^3$

$P = .0015(20)^3$

58/59

$f(x) = x^{-2/3}$ even

51. $V = \frac{k}{P}$

$V = 3.46$

~~$V = 302$~~

$P = .926$

$P = 1.452$

$V = ?$

$3.46 = \frac{k}{.926}$

$K = (3.46)(.926)$

53. $n = 2.42$

(2) T

$f(x) = \dfrac{2x^2-5x+5}{x-2}$

10, -5

HA: None

SA: $y = 2x - 1$

$x-2 \overline{)2x^2-5x+5}$

$-2x^2+4x$

$-x+5$

VA: $x-2=0$

$x=2$

holes: None

x-int:

$x = \dfrac{5 \pm \sqrt{25-4(2)(5)}}{4}$

$x = \dfrac{5 \pm \sqrt{25-40}}{4}$

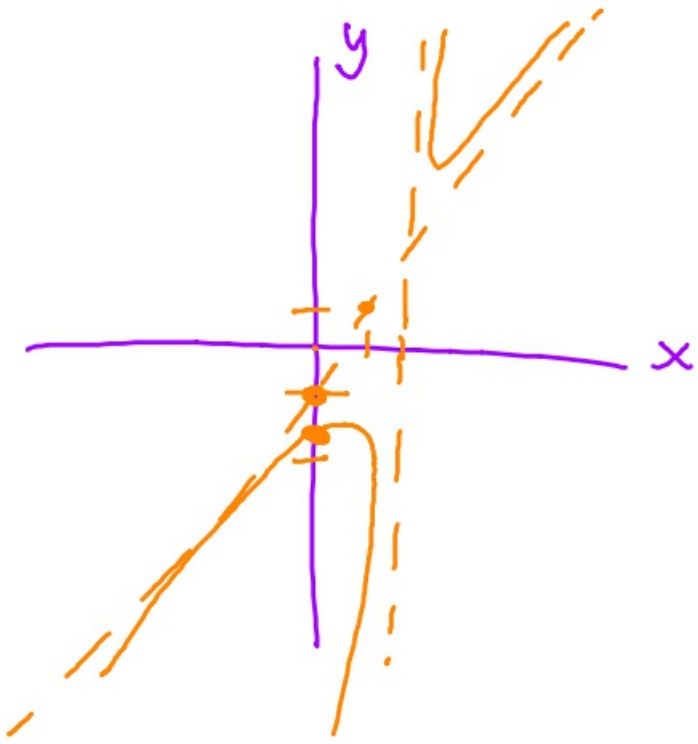
None

y-int $x=0$

$\dfrac{2(0)^2-5(0)+5}{0-2}$

$y = -\dfrac{5}{2}$

$\left(0, -\dfrac{5}{2}\right)$



5H

SMACS $\dfrac{x^3+8}{x^2-x-6}$ $\quad 2^3$

$\dfrac{(x+2)(x^2-2x+4)}{(x-3)(x+2)}$

VA: $x=3$

HA: none

SA: $y=x+1$

$x-3\overline{)x^2-2x+4}$

$-x^2+3x$

$x+4$

holes $x=-2$

$y=\dfrac{(-2)^2-2(-2)+4}{-2-3}$

$y=\dfrac{4+4+4}{-5}=\dfrac{12}{-5}$

$\left(-2,-\frac{12}{5}\right)$

x-int $x^2-2x+4=0$

$x=2\pm\dfrac{\sqrt{4-4(1)(4)}}{2}$

none

y-int $(0,-4/3)$

$y=\dfrac{0^2-2(0)+4}{0-3}$

$y=\dfrac{-4}{3}$

4T $y = \frac{4x}{x^3 - 9x}$

$y = \frac{4x}{x(x^2-9)}$

$y = \frac{4x}{x(x-3)(x+3)}$

$x=0$ $(0, -\frac{4}{9})$ $\frac{4}{(0-3)(0+3)}$ $\frac{-4}{9}$

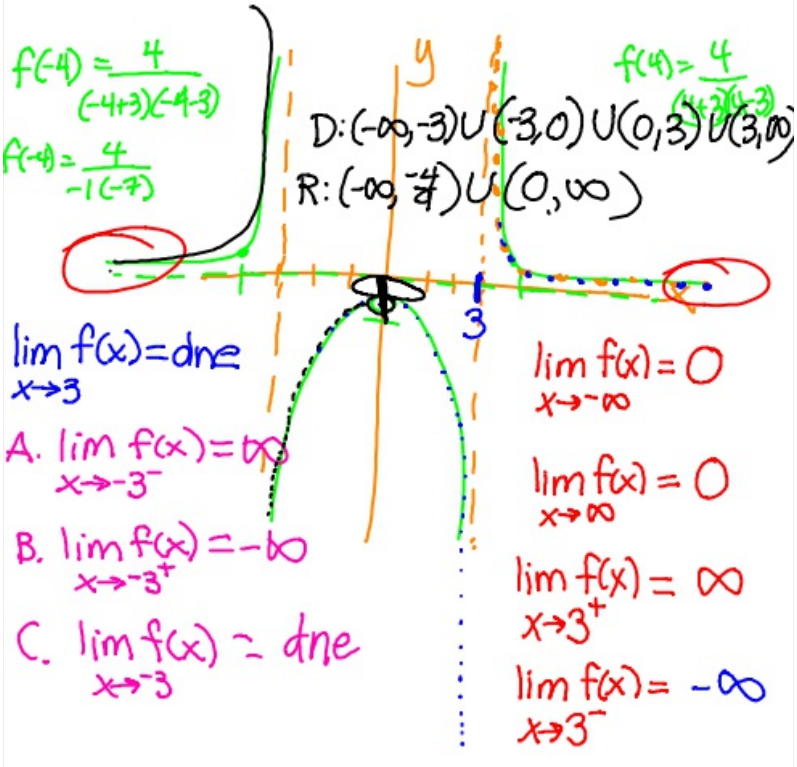
x-int: $4=0$ None

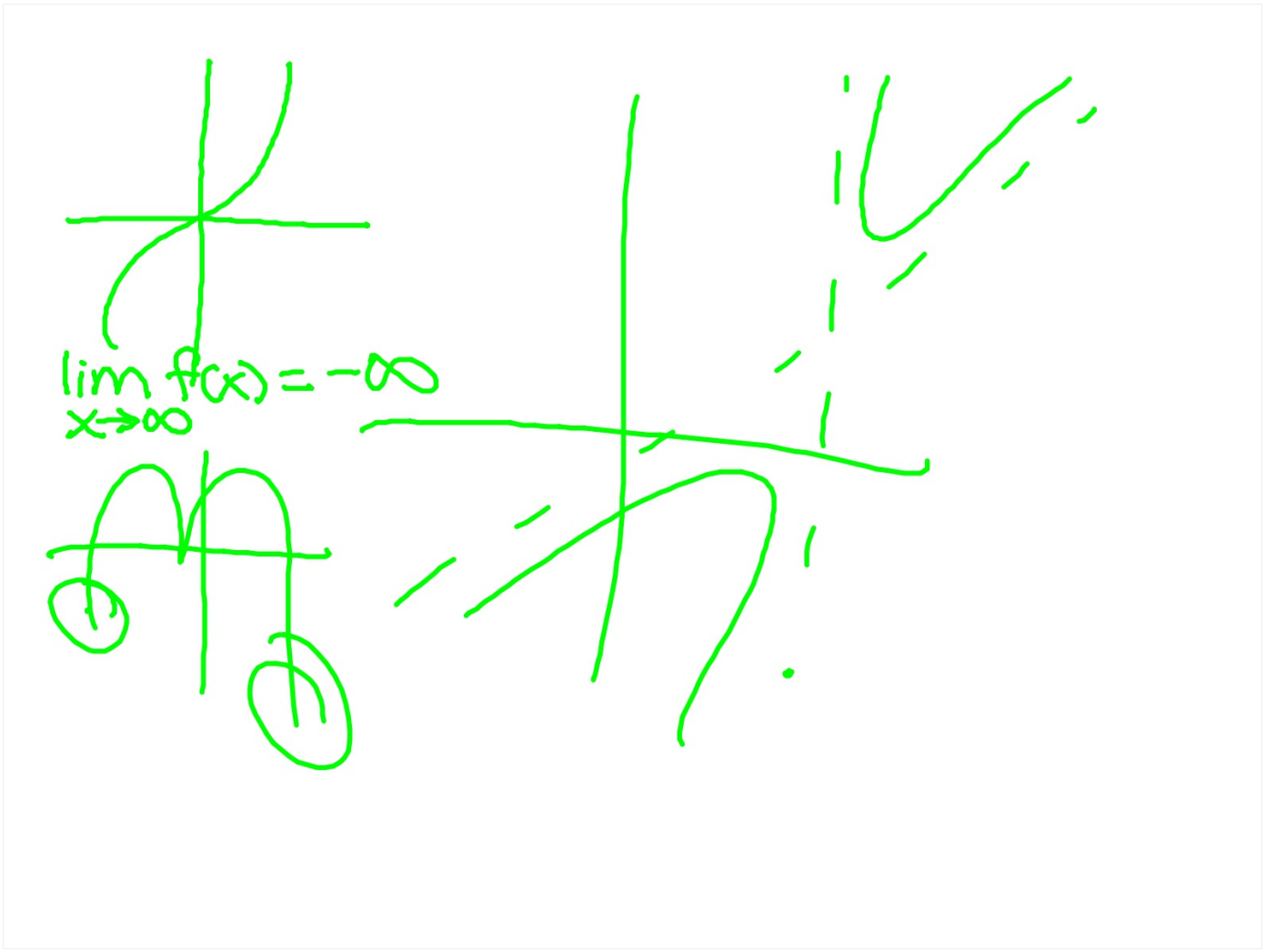
y-int $\frac{4}{(0-3)(0+3)} = \frac{4}{9}$ None

VA: $x-3=0$ $x=3$ $x+3=0$ $x=-3$

HA: $y=0$

Limit information below: left, right and from both sides.....




$\lim_{x\to\infty} f(x) = -\infty$

$$\frac{8x^2+26x+15}{2x^2-x-15}$$

$120 \quad -30$

$12 \cdot 10 \quad -6 \cdot 5$

$6 \quad 20$

All answers to the Toliver Worksheet 2.6 can be found on Mr. Fincher's wiki!!!!!

2.7

Objective: Solve Rational Equations

How do you solve a rational equation?	***STEPS*** ***1. Factor denominators.*** ***2. Find the LCD of all denominators.*** ***3. Multiply every term on both sides of the equation by the LCD.*** ***4. Solve the resulting equation.*** ***5. CHECK in the original equation! We must check for excluded values, the values that make any denominator zero.***

GUIDED PRACTICE:

Solve:

1. $\frac{x+1}{3x-6} = \frac{5}{6} + \frac{3}{x-2}$

$2(x+1) = 5(x-2) + 18$

$2x+2 = 5x-10+18$

$2x+2 = 5x+8$

$3x = -6$

$\boxed{x = -2}$

Excluded Values

$x \neq 2$

LCD

$6(x-2)$

2. This one is just a cross multiply problem!!!!!!

$$\frac{7}{r+2} = \frac{6}{r-5}$$

$7(r-5) = 6(r+2)$

$7r - 35 = 6r + 12$

$r = 47$

ex. values

$r \neq -2, r \neq 5$

3. $\frac{4}{x^2-2x-3} = \frac{x}{x-3} - \frac{1}{x+1}$

$(x-3)(x+1)$

$4 = x(x+1) - 1(x-3)$

$4 = x^2 + x - x + 3$

$4 = x^2 + 3$

$1 = x^2$

$x = \pm\sqrt{1}$

$x = \pm 1$

Excluded values

$x \neq 3$

$x \neq -1$

LCD

$(x-3)(x+1)$

Soln: $x = 1$