

Pg 184

$$9 \rightarrow (x) \frac{1}{x} + 3(x) = \frac{2}{x} (x) \quad x \neq 0$$

$$1 + 3x = 2$$

$$3x = 1$$

$$x = \frac{1}{3}$$

$$f) \quad \frac{7}{x-2} - \frac{4}{x-1} + \frac{3}{x+1} = 0$$

$$7(x-1)(x+1) - 4(x-2)(x+1) + 3(x-2)(x-1) = 0$$

$$7(x^2-1) - 4(x^2-x-2) + 3(x^2-3x+2) = 0$$

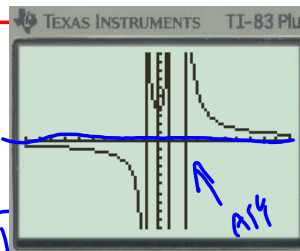
$$\begin{array}{r} 7x^2 \quad -7 \\ -4x^2 + 4x + 8 \\ 3x^2 - 9x + 6 \\ \hline 6x^2 - 5x + 7 = 0 \end{array}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$= \frac{5 \pm \sqrt{(-5)^2 - 4(6)(7)}}{2(6)}$$

$$= \frac{5 \pm \sqrt{-?}}{12}$$

\therefore No solution.



No
x-int.

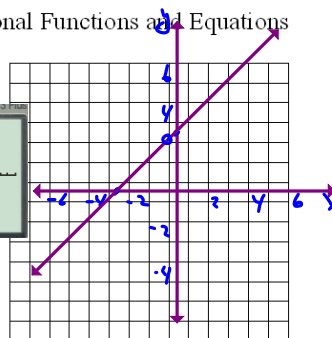
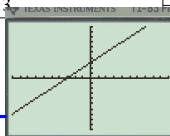
Lesson #5: Making Connections With Rational Functions and Equations

Special Case #1: Discontinuities

For the rational function: $y = \frac{2x^2 + 7x + 3}{2x + 1}$

a) Sketch the function using the ti83+

b) Where does it appear to be linear?
denominator is a factor of numerator



c) Simplify the equations and state any restrictions.

$$y = \frac{2x^2 + 7x + 3}{2x + 1} \quad x \neq -\frac{1}{2}$$

$$= \frac{(2x+1)(x+3)}{2x+1}$$

$$= x+3$$

d) Sketch the function.

Special Case #1: Oblique Asymptote

For the rational function: $y = \frac{x^3 + 3x^2 - 4x + 2}{x^2 - 1}$

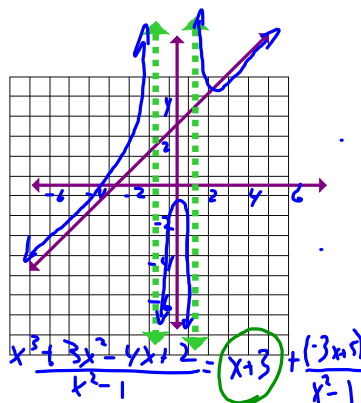
a) Sketch the function using the ti83+

b) Where does it appear to be an asymptote?
diagonal

c) Use your ti83+ to approximate the asymptote.
 $y = x + 2$ or $y = -x + 3$

d) Use long division to simplify the equation.

$$\begin{array}{r} x+3 \\ x^2-1 \overline{) x^3+3x^2-4x+2} \\ \underline{x^3-x} \\ 3x^2-3x+2 \\ \underline{3x^2-3} \\ -3x+5 \end{array}$$



e) Sketch the function.

oblique Asymptote.

Homework: pg 190; #4, 5, 6, 8, 9, 10,

MHF4U: Lesson 3.5

