

Do Now:

Solve: $\frac{x+2}{3} = \frac{2x-4}{2}$

$$2(x+2) = 3(2x-4)$$

$$2x+4 = 6x-12$$

$$16 = 4x$$

$$4 = x$$

Solve each rational equation graphically:

- Sketch a complete graph of the function showing all intercepts and asymptotes
- Write the window settings you use on the calculator
- Find the solution set of the given equation (Round answers to 3 decimal places)

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

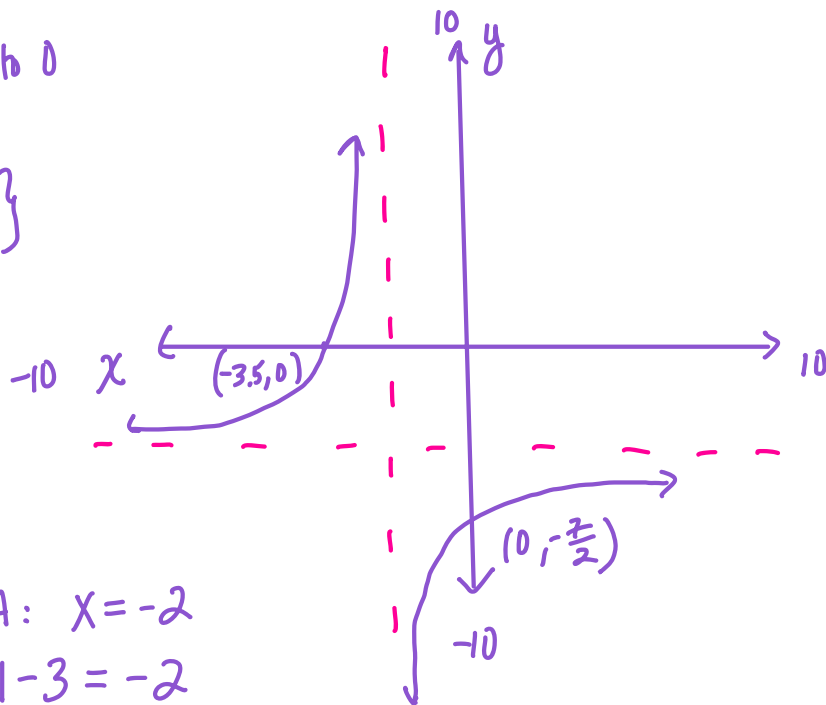
set right side to 0

$$\frac{x-1}{x+2} - 3 = 0$$

$$\{-3.5\}$$

$$y = \frac{x-1}{x+2} - 3$$

want $y = 0$



Possible Vertical Asymptotes: PYA: $x = -2$

End Behavior: EB: $y = 1 - 3 = -2$

↑
horizontal or oblique asymptote

$$2) \frac{1}{x} - \frac{2}{x-3} = 4$$

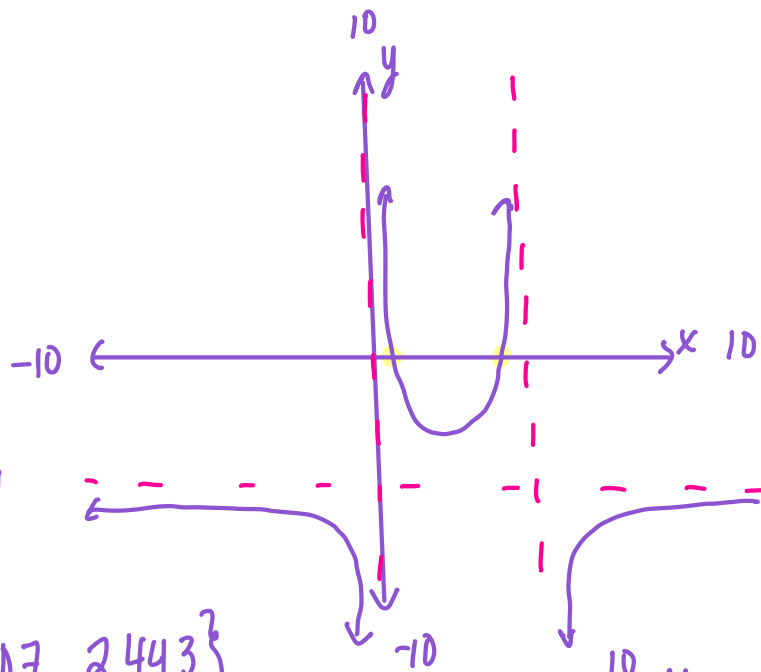
$$\frac{1}{x} - \frac{2}{x-3} - 4 = 0$$

$$y = 0$$

$$\text{PVA: } x = 0, 3$$

$$\text{EB: } y = 0 - 0 - 4 = -4$$

$$\{.307, 2.443\}$$



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

$$\frac{2}{x-1} + x - 5 = 0$$

$$y = 0$$

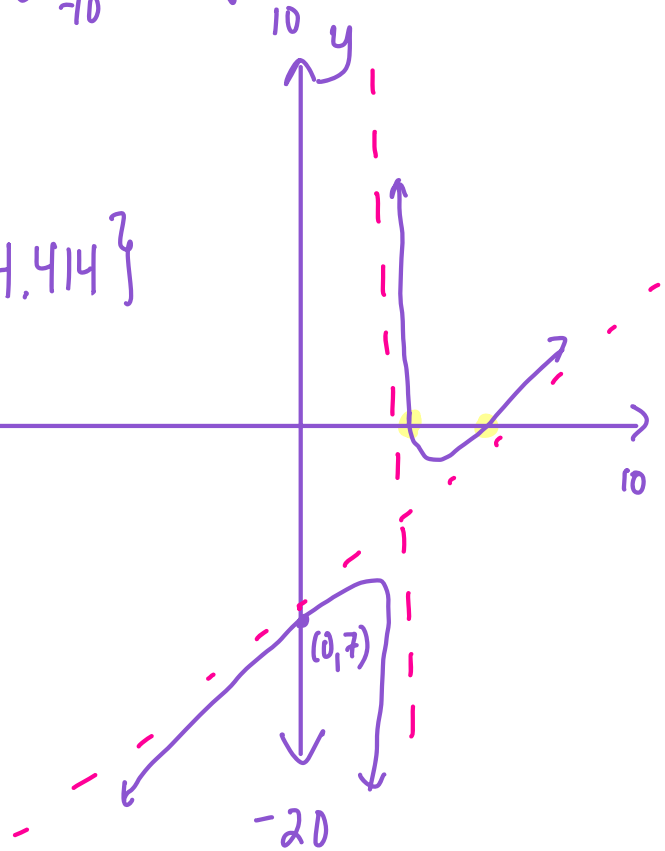
$$\{1.586, 4.414\}$$

$$\text{PVA: } x = 1$$

$$\text{EB: } y = 0 + x - 5 = x - 5$$

$$\uparrow b = -5$$

$$m = 1$$



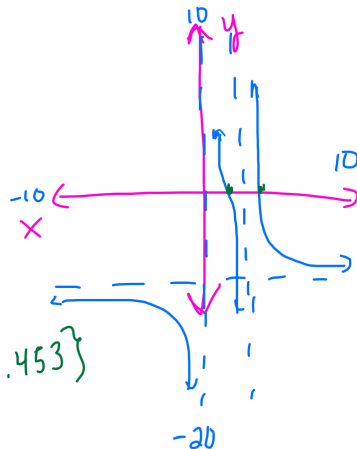
$$4) \frac{3}{x-1} + \frac{2}{x} = 8$$

$$y = \frac{3}{x-1} + \frac{2}{x} - 8$$

$$\text{PVA: } x = 0, 1$$

$$\text{EB: } y = 0 + 0 - 8 = -8$$

$$\{0.172, 1.453\}$$



Homework 01-11

$$\textcircled{28} \quad n = 6, -\frac{3}{2}$$

$$\textcircled{29} \quad x = 9, -3$$

$$\textcircled{30} \quad m = -9, 1$$

$$\textcircled{31} \quad y = -\frac{1}{2}, 1$$

$$\textcircled{33} \quad z = -\frac{1}{2}$$