

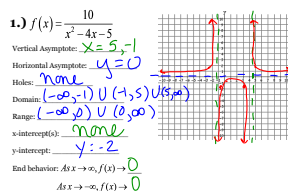
Day 2

Unit 2B

Learning Target 6

I can graph a rational function and find key information.

Notes from Friday
Calculator
notebook / sheet
of
paper



Step 1: Factor

$$\frac{10}{(x-5)(x+1)}$$

$$\text{VA: } (x-5)(x+1) = 0$$

$$x-5=0 \quad x+1=0$$

$$x=5, -1$$

HA: compare degrees

$$\text{num: } 0 < \text{denom: } 2$$

$$y = 0$$

x-int: when $y = 0$

$$\text{numerator} = 0$$

$$10 \neq 0$$

use calc to find zeros

$$\text{y-int: } x = 0$$

$$\text{use the table in calc}$$

OR:

Plug in $x = 0$

$$\frac{10}{0^2 - 4(0) - 5} = \frac{10}{-5}$$

$$y = -2$$

End B: horizontal asymp.

$$2.) f(x) = \frac{3x^2 - 12x + 9}{2x^2 - 2x - 4}$$

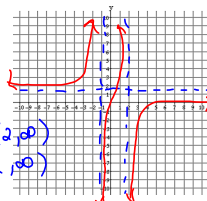
Vertical Asymptotes:

$$x = 2, -1$$

Horizontal Asymptote:

$$y = 3/2$$

Holes: none

Domain: $(-\infty, -1) \cup (-1, 2) \cup (2, \infty)$ Range: $(-\infty, 3/2) \cup (3/2, \infty)$ Zero: $x = 3, x = 1$ y-intercept: $y = -9/4$ End behavior: As $x \rightarrow \infty, f(x) \rightarrow 3/2$ As $x \rightarrow -\infty, f(x) \rightarrow 3/2$ 

$$\textcircled{1} \text{ factor: } \frac{3(x-3)(x-1)}{2(x-2)(x+1)}$$

$$\text{V.A.}: 2(x-2)(x+1) = 0$$

$$x = 2, -1$$

$$\text{H.A.}: \text{degrees } 2 = 2$$

$$y = 3/2$$

$$\text{x-int: } 3(x-3)(x-1) = 0$$

$$x = 3, 1$$

$$\text{y-int: } \frac{3(0-3)(0-1)}{2(0-2)(0+1)}$$

$$y = \frac{9}{-4}$$