

Bellwork Hon Alg2 Monday, February 13, 2017

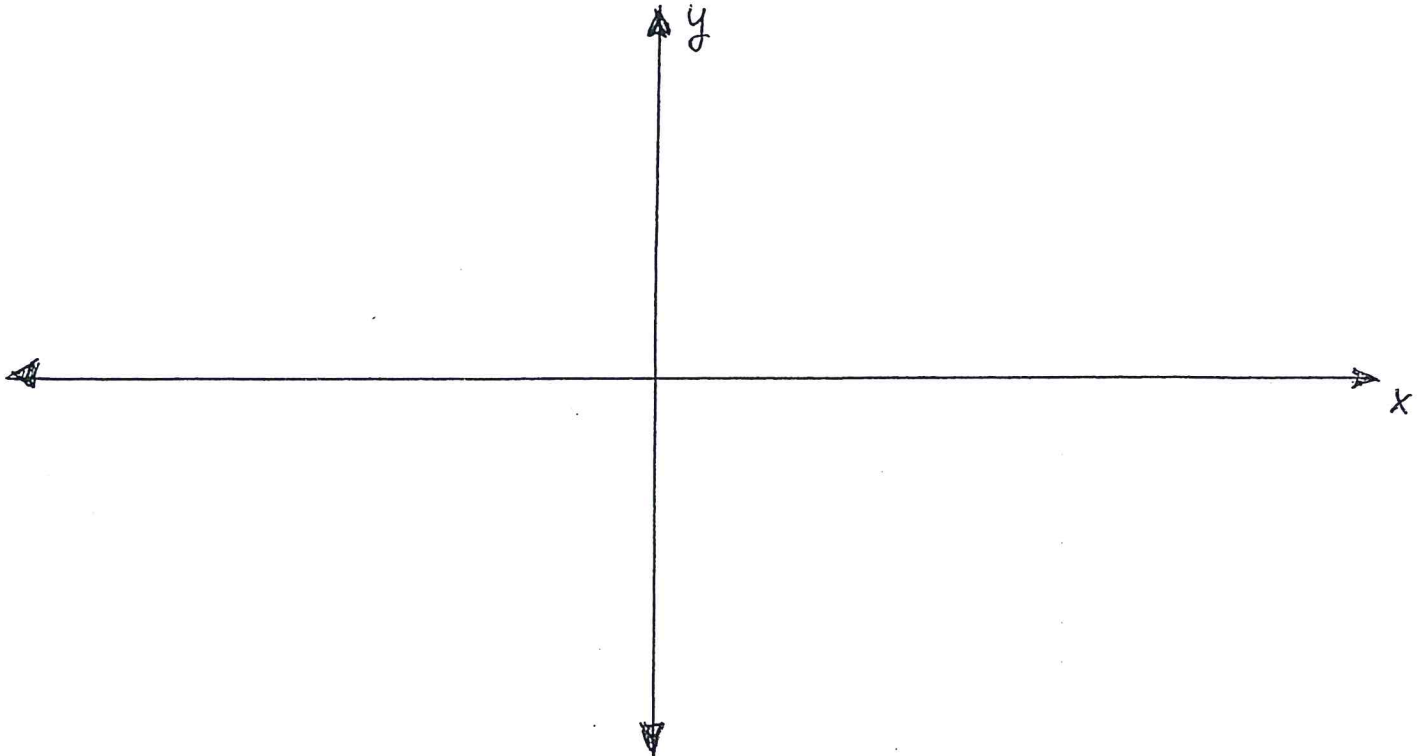
Use this rational function: $y = \frac{-2x^2 + 4x + 30}{x^2 + 4x - 12} = \frac{-2(x+3)(x-5)}{(x-2)(x+6)}$

1. Find the equation of the HA, if any. 2. Find the equations of the VA, if any.

3. Find the x-intercepts, if any.

4. Find the y-intercept, if any.

5. Make a sketch of this rational function without using a graphing calculator, showing all asymptotes as dashed lines, all intercepts, and the proper behavior around each asymptote.



6. Does each table of values represent Direct Variation, Inverse Variation, or neither? If it represents a variation, write a variation equation.

a)

X	Y
-4	8.4
-1.5	3.15
6	-12.6
27.3	-13
21	-44.1

b)

X	Y
-15	-112.5
-8	-60
-3.2	-24
7	52.5
12	90

c)

X	Y
-20	24
-16	30
-3.2	150
12	-40
50	-9.6

d)

X	Y
-18	-63
-10	-35
8	28
12	-40
20.5	72

Use this rational function: $y = \frac{-2x^2 + 4x + 30}{x^2 + 4x - 12} = \frac{-2(x+3)(x-5)}{(x-2)(x+6)}$

1. Find the equation of the HA, if any.

$y = -2$

2. Find the equations of the VA, if any.

$x = -6, x = 2$

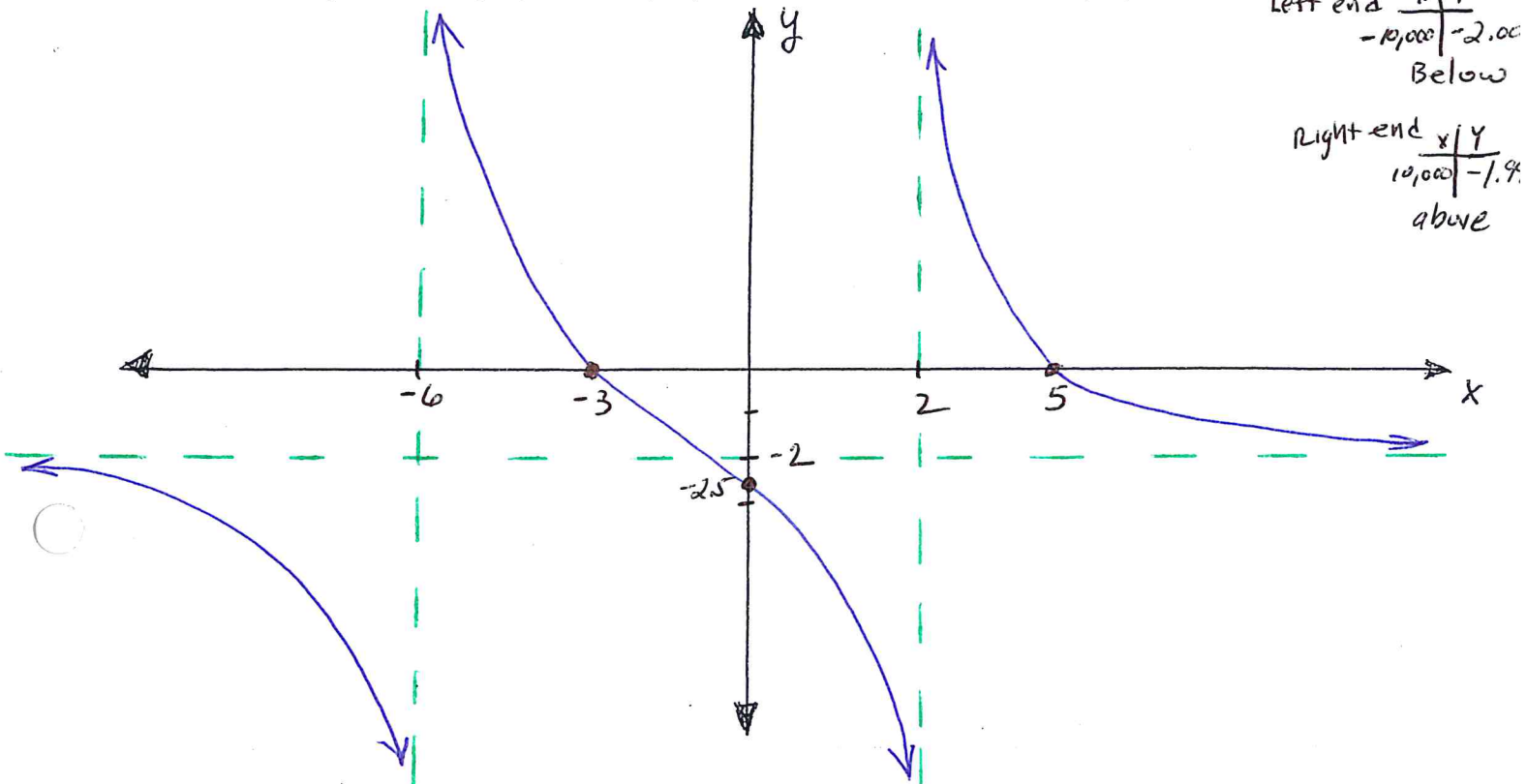
3. Find the x-intercepts, if any.

$x = -3.5$

4. Find the y-intercept, if any.

$y = -30/12 \approx -2.5$

5. Make a sketch of this rational function without using a graphing calculator, showing all asymptotes as dashed lines, all intercepts, and the proper behavior around each asymptote.



6. Does each table of values represent Direct Variation, Inverse Variation, or neither? If it represents a variation, write a variation equation.

a)

X	Y	$\frac{y}{x}$
-4	8.4	
-1.5	3.15	
6	-12.6	
27.3	-13	
21	-44.1	

Neither

b)

X	Y	$\frac{y}{x}$
-15	-112.5	7.5
-8	-60	7.5
-3.2	-24	7.5
7	52.5	7.5
12	90	7.5

DIRECT VARIATION

$y = 7.5x$
 or
 $\frac{y}{x} = 7.5$

c)

X	Y	xy
-20	24	-480
-16	30	-480
-3.2	150	-480
12	-40	-480
50	-9.6	-480

INVERSE VARIATION

$xy = -480$
 or
 $y = \frac{-480}{x}$

d)

X	Y	
-18	-63	+
-10	-35	+
8	28	+
12	-40	-
20.5	72	+

Neither