

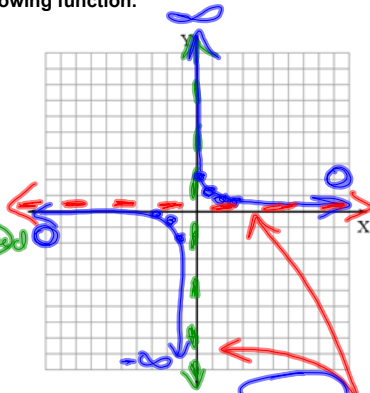
Graphing a Hyperbola

Complete the table and graph the following function.

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

$y \neq 0$

x	y
-4	$-\frac{1}{4}$
-2	$-\frac{1}{2}$
-1	-1
$-\frac{1}{2}$	-2
0	undefined
$\frac{1}{2}$	2
1	1
2	$\frac{1}{2}$
4	$\frac{1}{4}$



The two parts of a hyperbola are called "branches"

The dashed lines are called "asymptotes"

The point where the asymptotes intersect is called the "center"

11.8 Graphing Rational Functions

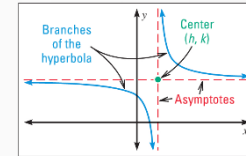
from p.692

RATIONAL FUNCTIONS WHOSE GRAPHS ARE HYPERBOLAS

The graph of the rational function $y = \frac{a}{x-h} + k$

is a **hyperbola** whose **center** is (h, k) .

The vertical and horizontal lines through the center are the **asymptotes** of the hyperbola. An **asymptote** is a line that the graph approaches. While the distance between the graph and the line approaches zero, the asymptote is not part of the graph.



[Explore Rational Functions Here:](#)

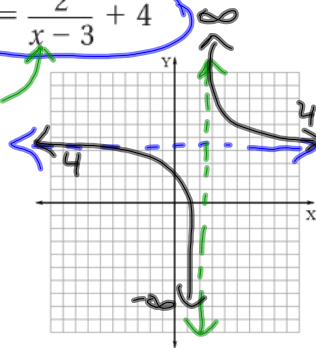
Investigation

Complete the following tables to graph

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

$y \neq 4$

$x \neq 3$



Draw in, and label, the asymptotes.

Assignment

p.694 (12-13, 39-46, 59-61, 63)

Due Monday

Attachments



Explore Learning