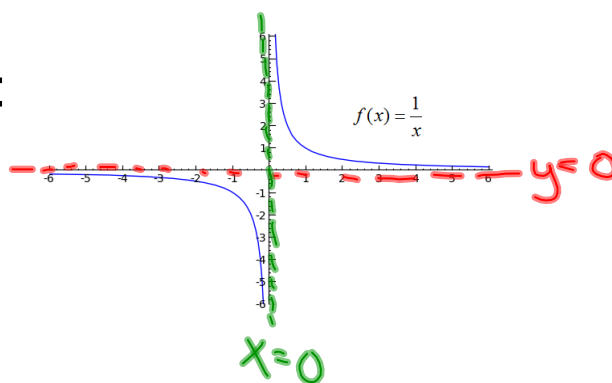


Chapter 8.2: Graph Simple Rational Functions

$$f(x) = \frac{p(x)}{q(x)}, q(x) \neq 0$$

Parent Function:

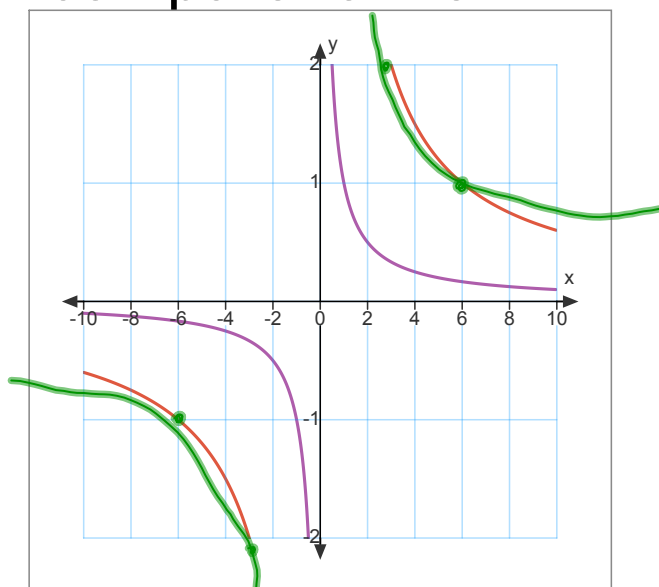
$$f(x) = \frac{1}{x}$$

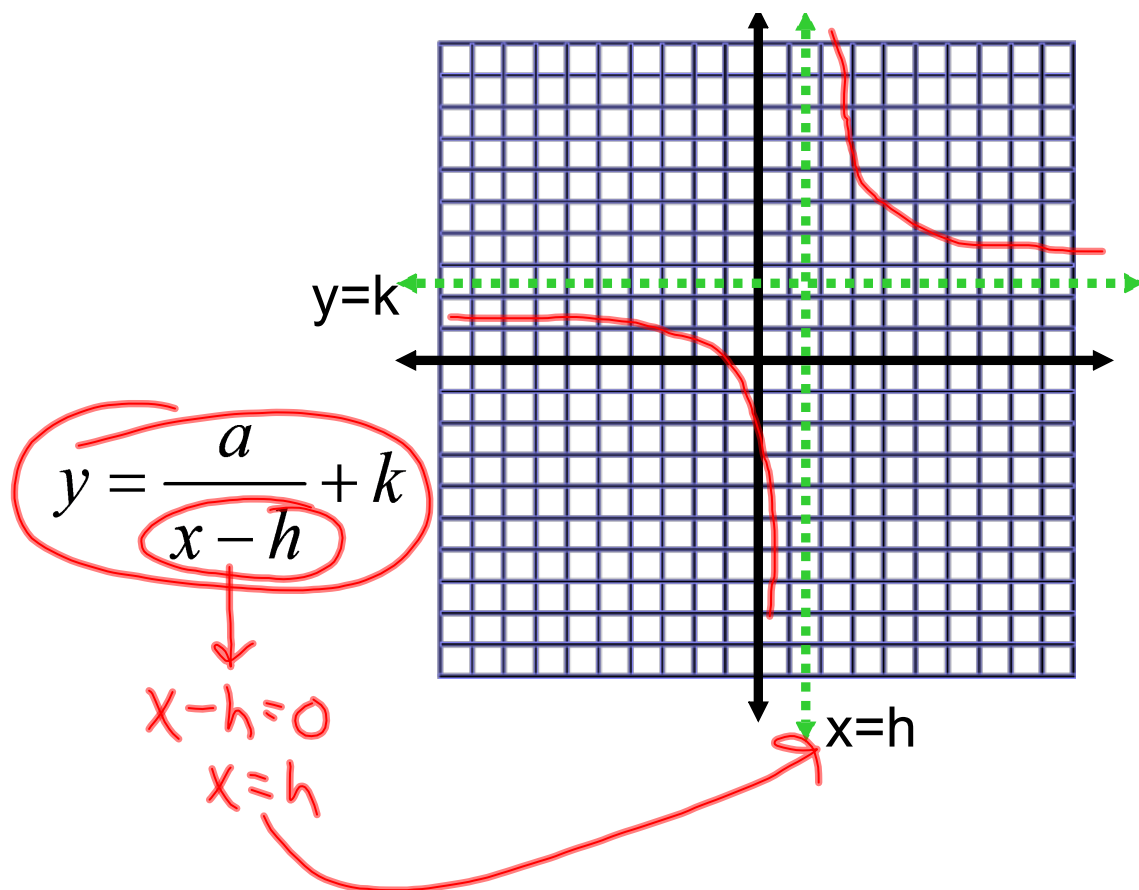


graph the function compare to the parent function

$$y = \frac{6}{x}$$

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



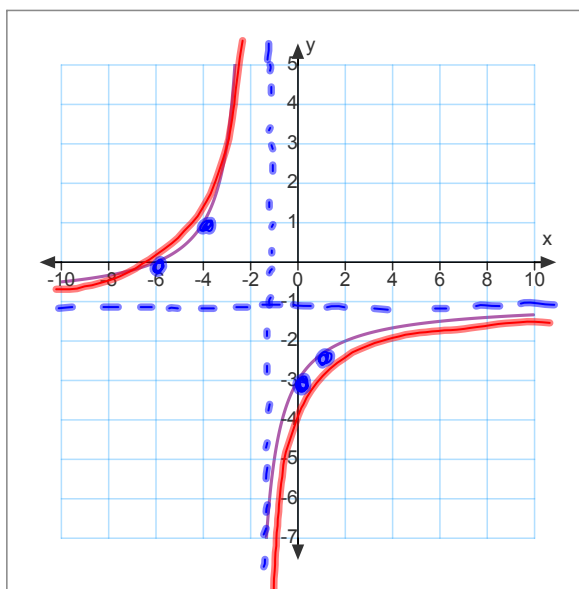


Graph: $y = \frac{-4}{x+2} - 1$

vert: $x = -2$

horz: $y = -1$

flips
stretch



Other Rational Graphs:

$$y = \frac{ax + b}{cx + d} = 0$$

$$\text{vertical asymptote: } x = -\frac{d}{c}$$

$$\text{horizontal asymptote: } y = \frac{a}{c}$$

Graph:

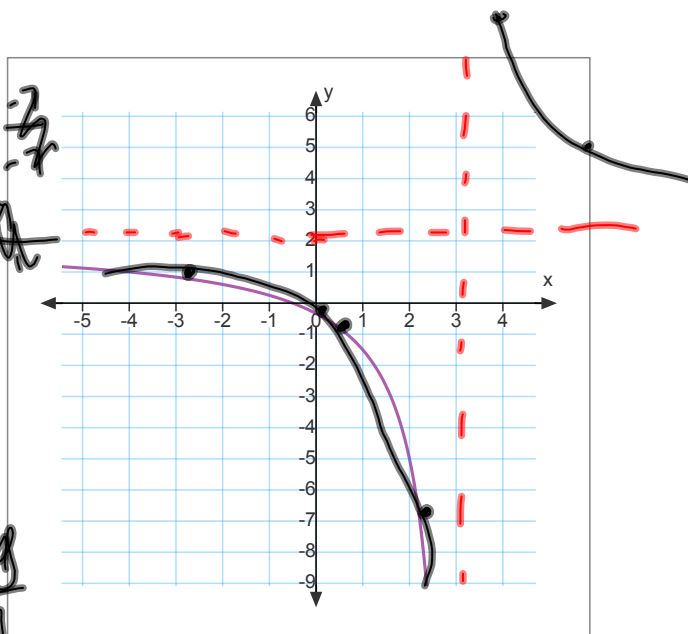
$$y = \frac{2x + 1}{x - 3}$$

vert: $x = 3$

horz: $y = 2$

x	y
0	$-\frac{1}{3}$
$-\frac{1}{2}$	0
-4	1
2	-5

x	y
4	9
6	$\frac{13}{3}$



A 3-D printer builds up layers of material to make three dimensional models. Each deposited layer bonds to the layer below it. A company decides to make small display models of engine components using a 3-D printer. The printer costs \$24,000. The material for each model costs \$300.

- Write an equation that gives the average cost per model as a function of the number of models printed.
- Graph the function. Use the graph to estimate how many models must be printed for the average cost per model to fall to \$700.
- What happens to the average cost as more models are printed?

Homework: Chapter 8.2 pg. 561
#'s 4,10,14,16,22,24,28,34,38