

Inverse Variation

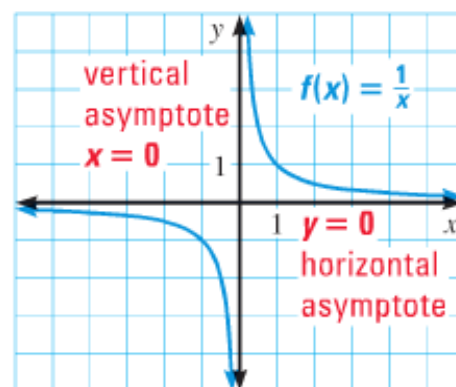
Notes coming on April 30. Leave blank for now.

134 Simple Rational Functions

Parent Function for Simple Rational Functions

The graph of the parent function $f(x) = \frac{1}{x}$ is a *hyperbola*, which consists of two symmetrical parts called *branches*. The domain and range are all nonzero real numbers.

Any function of the form $g(x) = \frac{a}{x}$ ($a \neq 0$) has the same asymptotes, domain, and range as the function $f(x) = \frac{1}{x}$.



Translations of Simple Rational Functions

Graph the **vertical asymptote** at $x = h$ $y = \frac{a}{x - h} + k$

Graph the **horizontal asymptote** at $y = k$

Plot two clear points to the left of the asymptote and two clear points to the right.

Connect the pairs of points to create a pair of hyperbola.

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

x	y
3	4
2	5
0	1
-1	2

