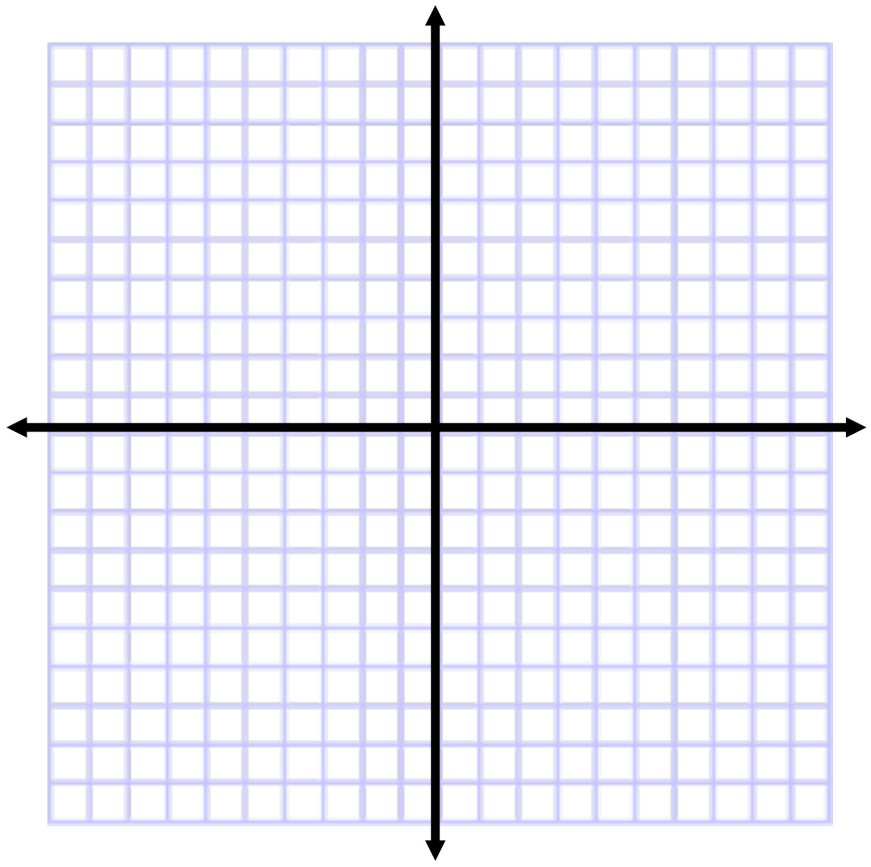
10-1 Rational Functions

Rational w/ odd power



Parent Equation:

Domain

Range

Increasing

Decreasing

Left End Behavior

Right End Behavior

x-intercepts

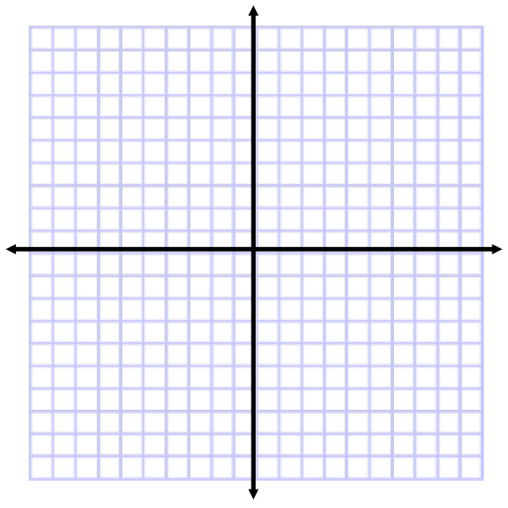
y-intercepts

Vertical Asymptote(s):

Horizontal Asymptote:

One-to-One?

Rational w/even power



Parent Equation:

Domain
Range
Increasing
Decreasing
Left End Behavior

Right End Behavior

x-intercepts
y-intercepts
Vertical Asymptote(s):
Horizontal Asymptote:
One-to-One?

Sketch a graph and analyze of the following.

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

Domain:

Range:

V Asymptote:

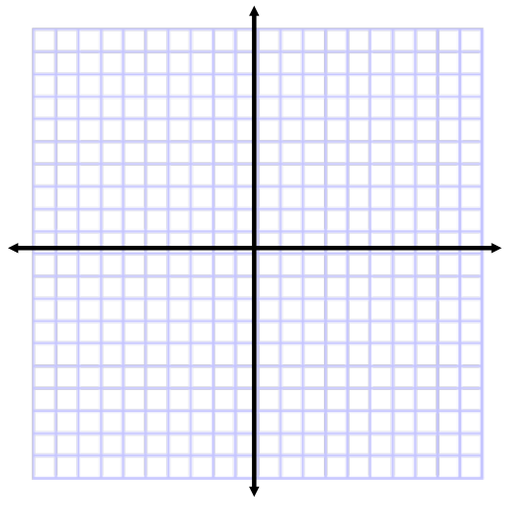
H Asymptote:

Increasing:

Decreasing:

End Behavior:

Asymptote behavior:



Sketch a graph and analyze of the following.

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

Domain:

Range:

V Asymptote:

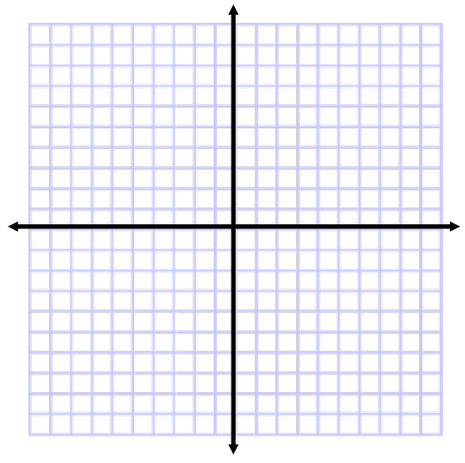
H Asymptote:

Increasing:

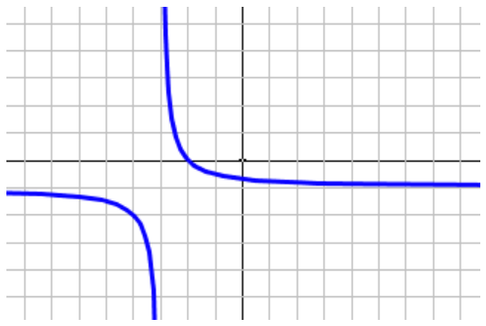
Decreasing:

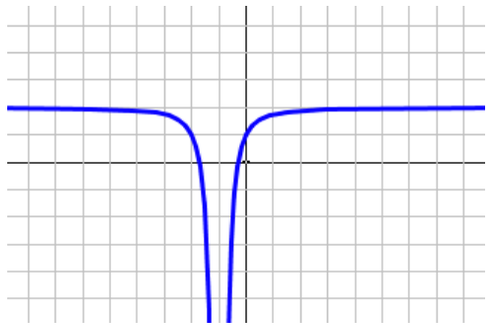
End Behavior:

Asymptote behavior:



Write an equation based on the following graphs.





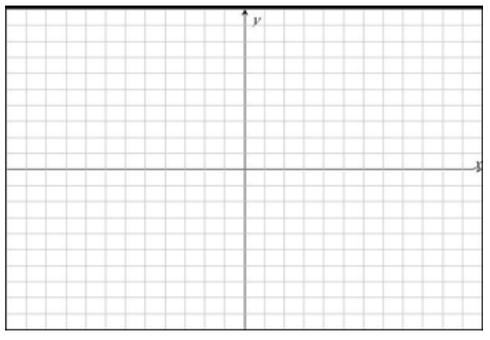
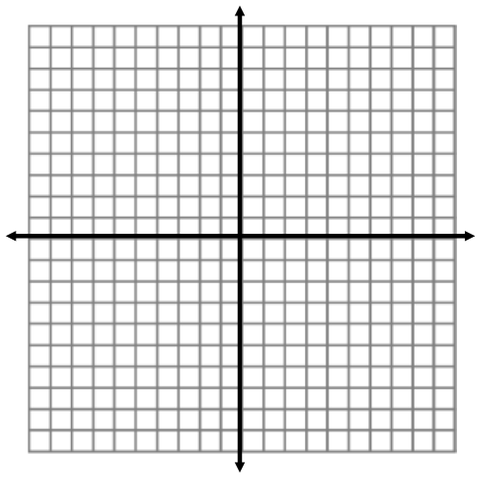
When given a rational function in the form of $f(x)=\frac{mx+n}{px+q}$ where $m\neq 0$ and $p\neq 0$, you can use division to re-write the function in a form to identify the transformations.

$$g(x)=\frac{3x-4}{x-1}$$

Given $f(x)=\frac{4x+7}{x+4}$, use division to re-write the function and identify the transformations. Then sketch a graph and state the domain, range, and intervals of increasing and decreasing.

Given the following functions, use division to re-write the function and identify the transformations. Then sketch a graph.

(a) $f(x)=\dfrac{3x+7}{x+2}$



(b) $f(x)=\dfrac{5-2x}{x+4}$