Day 4: Graphing Inverse Variation

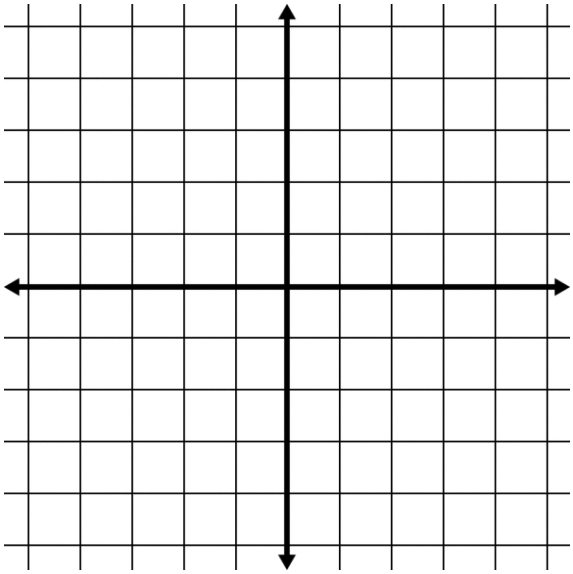
Parent Function: $f(x) = \frac{1}{x}$

1. Graph the parent Inverse Variation Function.

2. Which Quadrants is the function in?

3. What are the equations of the asymptotes?

4. What is the end behavior to the right? To the left?



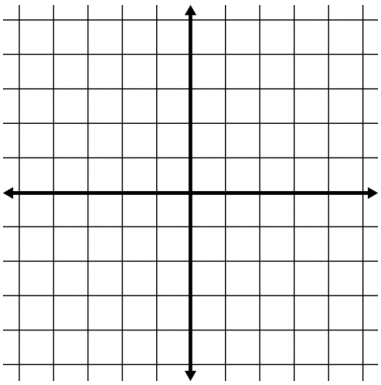
Transformations with *a* $\mathbf{f(x) = \frac{a}{x}}$

If *a* is positive, the graph will be in quadrants _____ and _____.

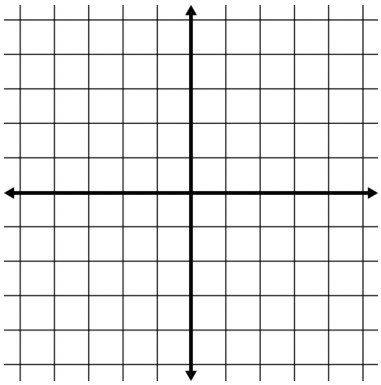
If *a* is positive, the graph will be in quadrants _____ and _____.

Examples: Sketch a graph of each inverse variation function.

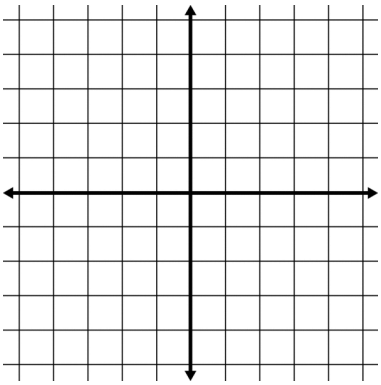
1. $f(x) = \frac{-2}{x}$



2. $f(x) = \frac{4}{x}$

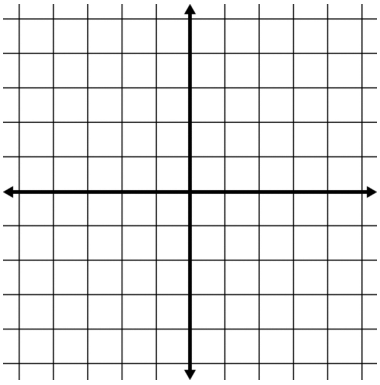


3. $f(x) = \frac{-1}{x}$

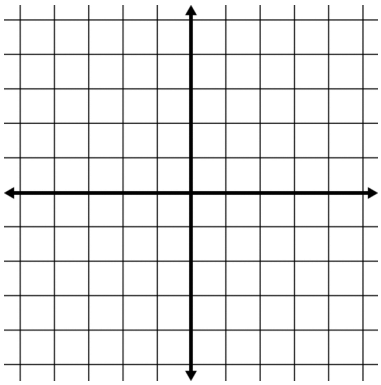


DIY

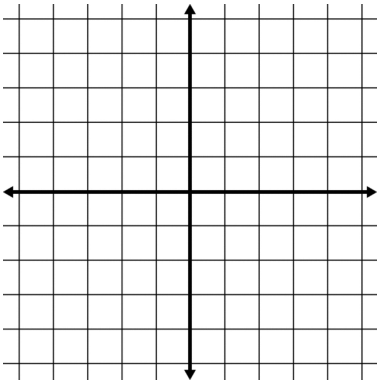
1. $f(x) = \frac{3}{x}$



2. $f(x) = \frac{-4}{x}$



3. $f(x) = \frac{2}{x}$



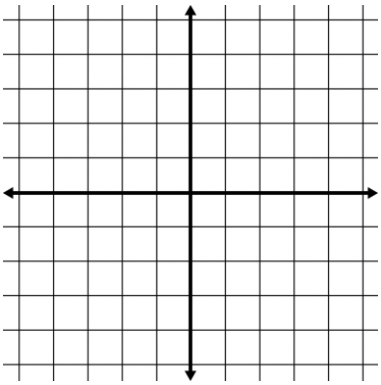
Transformation Form $\mathbf{f(x) = \frac{a}{x-h} + k}$

h translates the graph _____ or _____.

k translates the graph _____ or _____.

Examples: Sketch a graph of each inverse variation function.

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

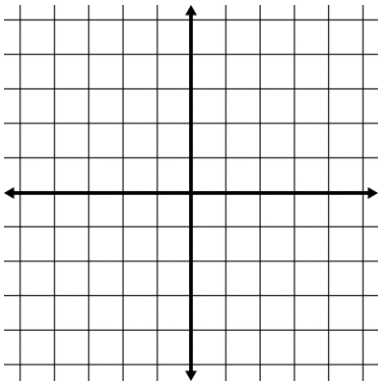


Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____

2. $f(x) = \frac{4}{x-4} + 1$

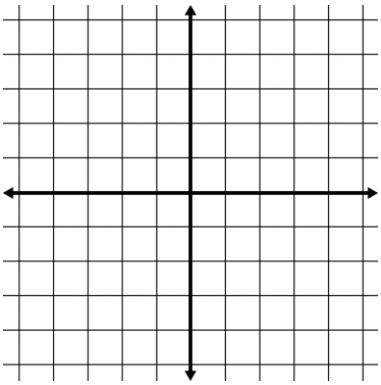


Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____

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



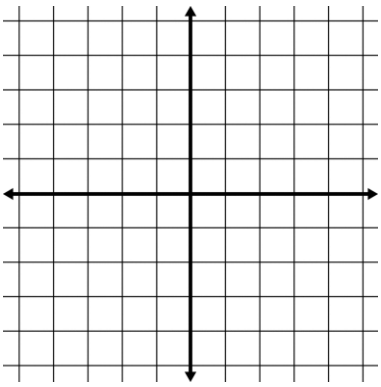
Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____

DIY

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

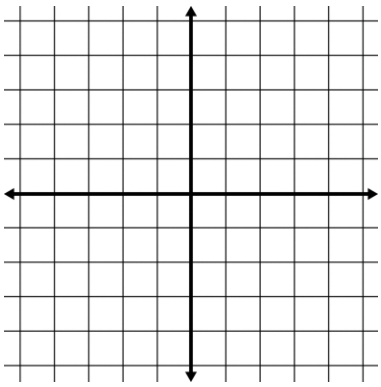


Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____

2. $f(x) = \frac{4}{x+3}$

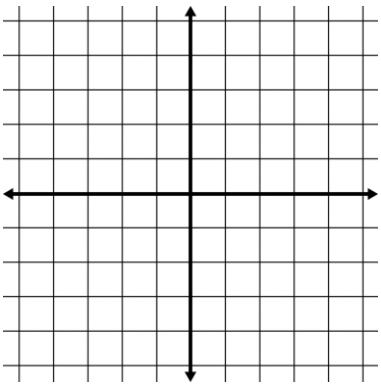


Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____

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



Asymptotes:_____

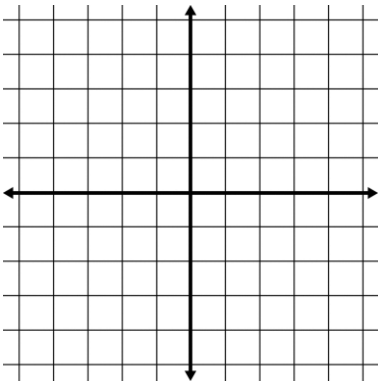
Right End Behavior:_____

Left End Behavior:_____

Day 4 Homework

Sketch a graph of each inverse variation function and fill in the blanks.

1. $f(x) = \frac{-3}{x+4} - 1$

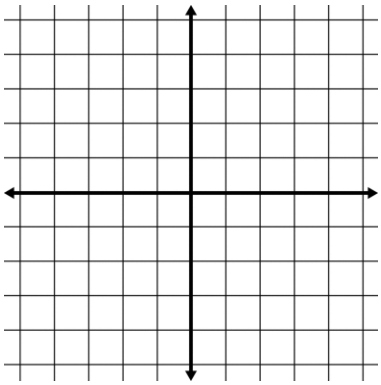


Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____

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

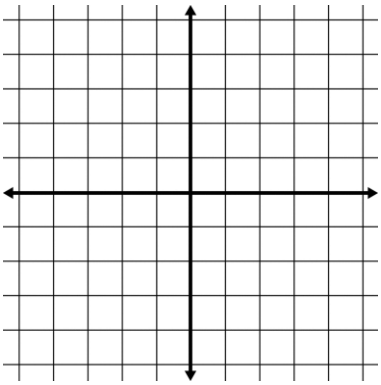


Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____

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

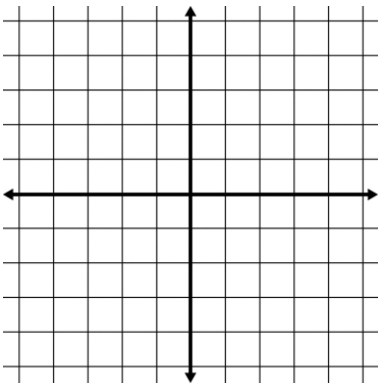


Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____

4. $f(x) = \frac{-2}{x+2} - 4$

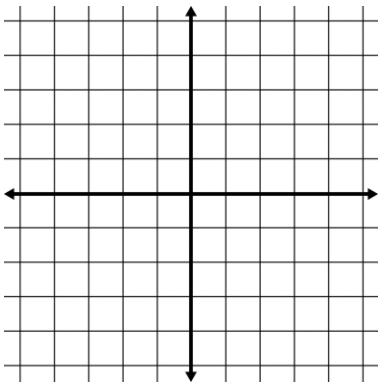


Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____

5. $f(x) = \frac{4}{x+3}$

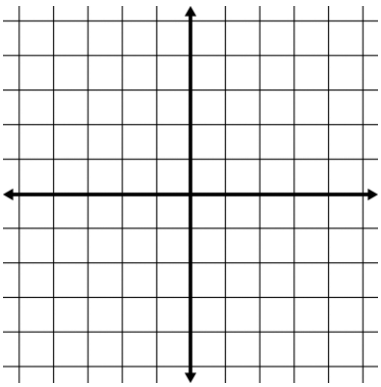


Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____

6. $f(x) = \frac{-5}{x} - 2$



Asymptotes:_____

Right End Behavior:_____

Left End Behavior:_____