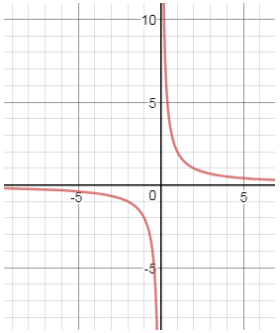
Unit 3---Lesson5-Inverse Variation Graphs

These equations don't follow any form we've seen before.

They are new "family" of graphs.

$y = \frac{2}{x}$



Key Features of Inverse Variation Graphs:

- The graph always has _____ asymptotes

  One asymptote is horizontal (y=)

  One asymptote is vertical (x=)

- The graph always has _____ symmetric branches.

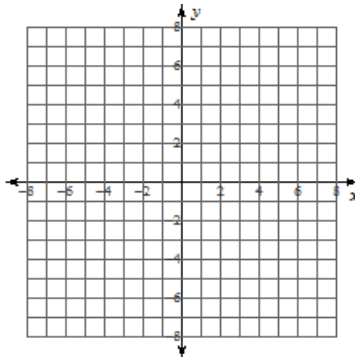
Graphing Inverse Variation "Parents":

_____

1. Sketch and label both asymptotes: y=0 and x=0
2. Make an x/y table by choosing both whole numbers and fractional values that work "nicely" with the numerator.
3. Plot the points in the table (for both branches) and connect the points.

Graph and Sketch the following inverse variation equations:

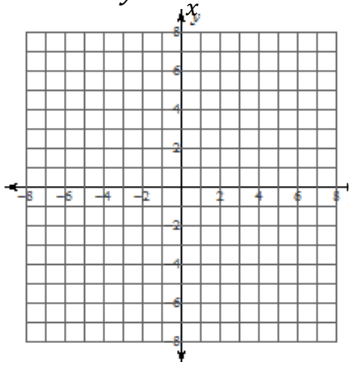
1. $y = \frac{5}{x}$



x	y

x	y

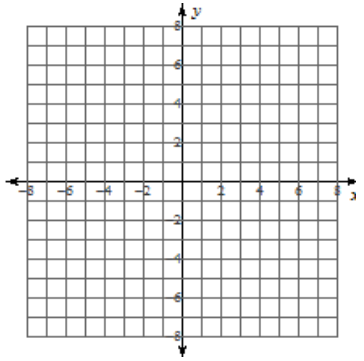
2. $y = \frac{10}{x}$



x	y

x	y

3. $y = \frac{-4}{x}$



x	y

x	y

The effect of –k on inverse variation graphs:

_____

_____

Identifying an Inverse Variation From a Table

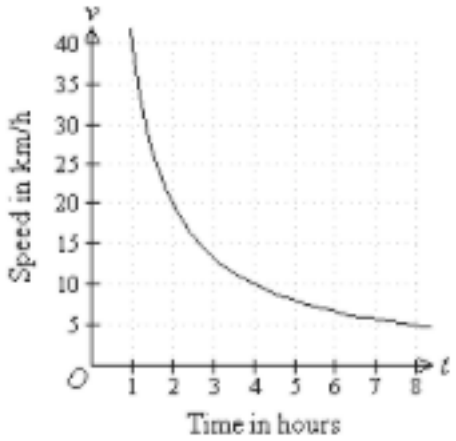
- Given a table, does it describe an inverse variation?
- Definition of inverse: $y = \frac{k}{x}$, that means that xy=k is also true

x	-5	-3	4	8
y	2.4	4	-3	-1.5

- Inverse variation exists if the value of one variable decreases as the

value of the other variable _____.

- Graphical representation of inverse variation takes the shape of a hyperbola (an example is shown below)



Graphing Inverse Variation Translations

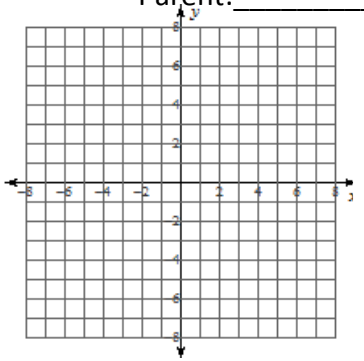
- Identify the "parent" functions and create a table for it
- Describe the shift (up, down, left, right, reflected over x-axis)
- Sketch and label the asymptotes based on the shift information.
- Explain the parent table according to the shift description.
- Plot the points in the table (for both branches) and connect the points

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

Shift Description:_____

Asymptotes:_____

Parent:_____



x	y

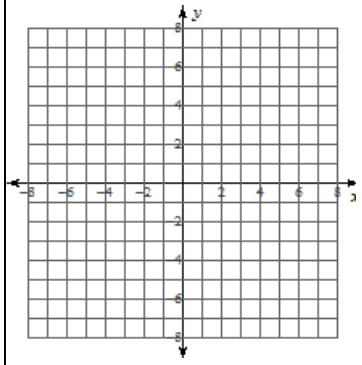
x	y

2. $y = \frac{-2}{(x+3)} - 5$

Shift Description:_____

Asymptote:_____

Parent:_____



x	y

x	y

Unit 3---Lesson 5-CLASSWORK/HOMEWORK

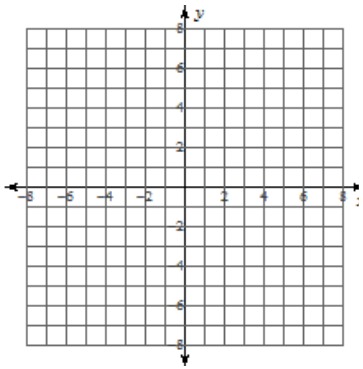
Graph the following inverse functions

1. $y = \frac{-4}{x}$

Shift Description:_____

Asymptote:_____

Parent:_____



x	y

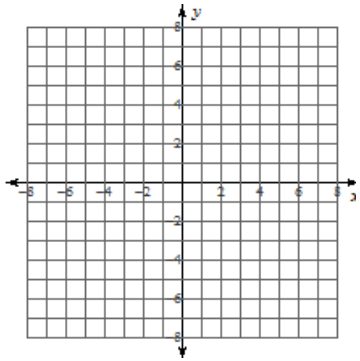
x	y

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

Shift Description:_____

Asymptote:_____

Parent:_____



x	y

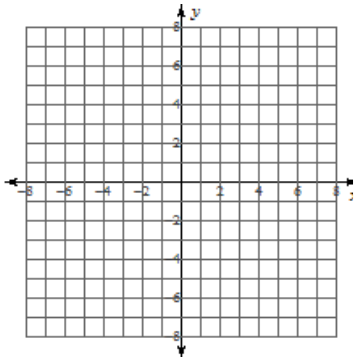
x	y

3. $y = \frac{6}{(x+4)} - 3$

Shift Description:_____

Asymptote:_____

Parent:_____



x	y

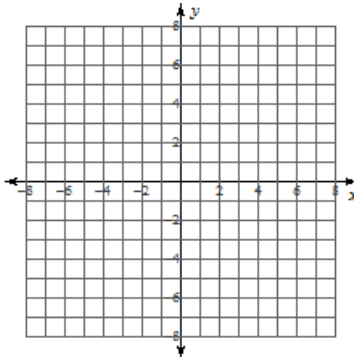
x	y

4. $y = \frac{-1}{(x-3)} - 6$

Shift Description:_____

Asymptote:_____

Parent:_____



x	y

x	y