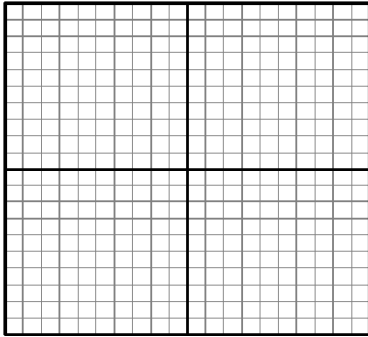


Algebra 2: Exponential Transformation Activity #2

Name _____
Date _____ Period _____

Create a table of values and a graph for the equation $y = \left(\frac{1}{2}\right)^x$

x	y
-3	
-2	
-1	
0	
1	
2	
3	



What shape would you describe this graph as?

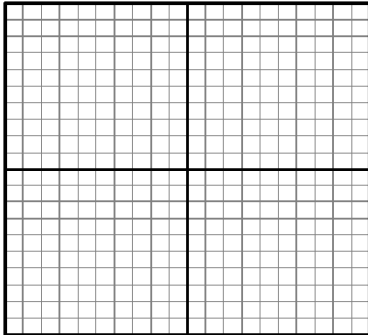
What is the domain and range of this equation?

*This equation is called the parent function because it is the simplest form of the equation or graph we can have.

Create a table of values and a graph for each of the following equations. Then describe how each table and graph is different from the parent function. (Suggestion: You may want to graph the parent function on each graph as well.)

1. $y = -\left(\frac{1}{2}\right)^x$

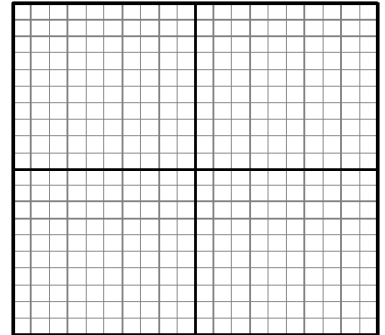
x	y
-3	
-2	
-1	
0	
1	
2	
3	



Description:

2. $y = \frac{1}{2} \cdot \left(\frac{1}{2}\right)^x$

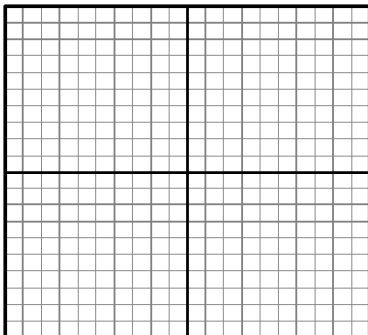
x	y
-3	
-2	
-1	
0	
1	
2	
3	



Description:

3. $y = 2 \cdot \left(\frac{1}{2}\right)^x$

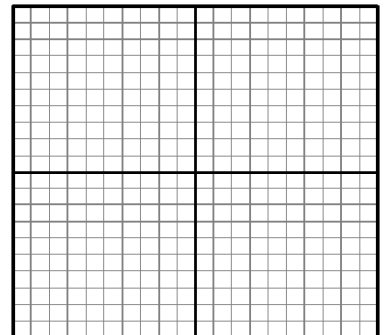
x	y
-3	
-2	
-1	
0	
1	
2	
3	



Description:

4. $y = \left(\frac{1}{2}\right)^{x+3}$

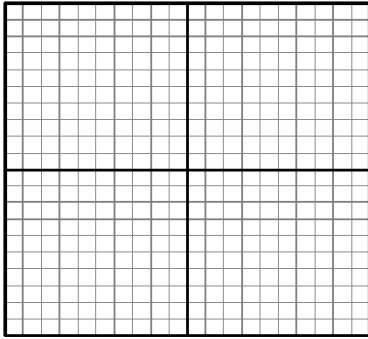
x	y
-3	
-2	
-1	
0	
1	
2	
3	



Description:

5. $y = \left(\frac{1}{2}\right)^{x-3}$

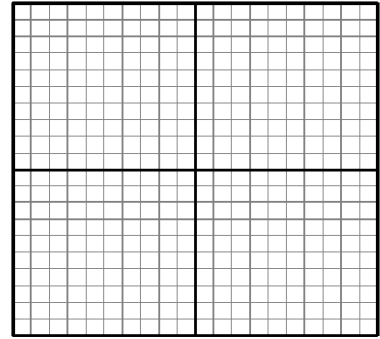
x	y
-3	
-2	
-1	
0	
1	
2	
3	



Description:

6. $y = \left(\frac{1}{2}\right)^x + 2$

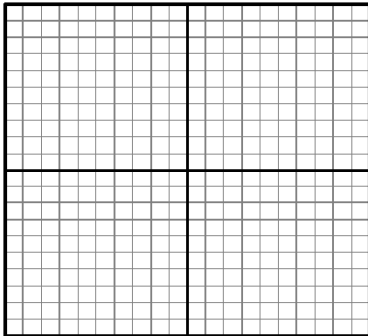
x	y
-3	
-2	
-1	
0	
1	
2	
3	



Description:

7. $y = \left(\frac{1}{2}\right)^x - 2$

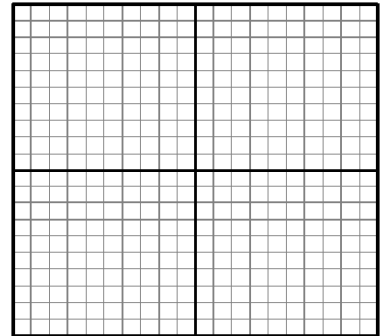
x	y
-3	
-2	
-1	
0	
1	
2	
3	



Description:

8. $y = -2 \cdot \left(\frac{1}{2}\right)^{x+1} + 3$

x	y
-3	
-2	
-1	
0	
1	
2	
3	



Description:

Without actually graphing, describe how the graphs of the following equations would be similar to the parent function and how they are different from the parent function.

9. $y = \frac{1}{3} \cdot \left(\frac{1}{2}\right)^{x-1} - 4$

10. $y = -\frac{5}{2} \cdot \left(\frac{1}{2}\right)^{x+3} + 6$

Use a graphing calculator and verify that your conjectures on #9 and #10 are correct.