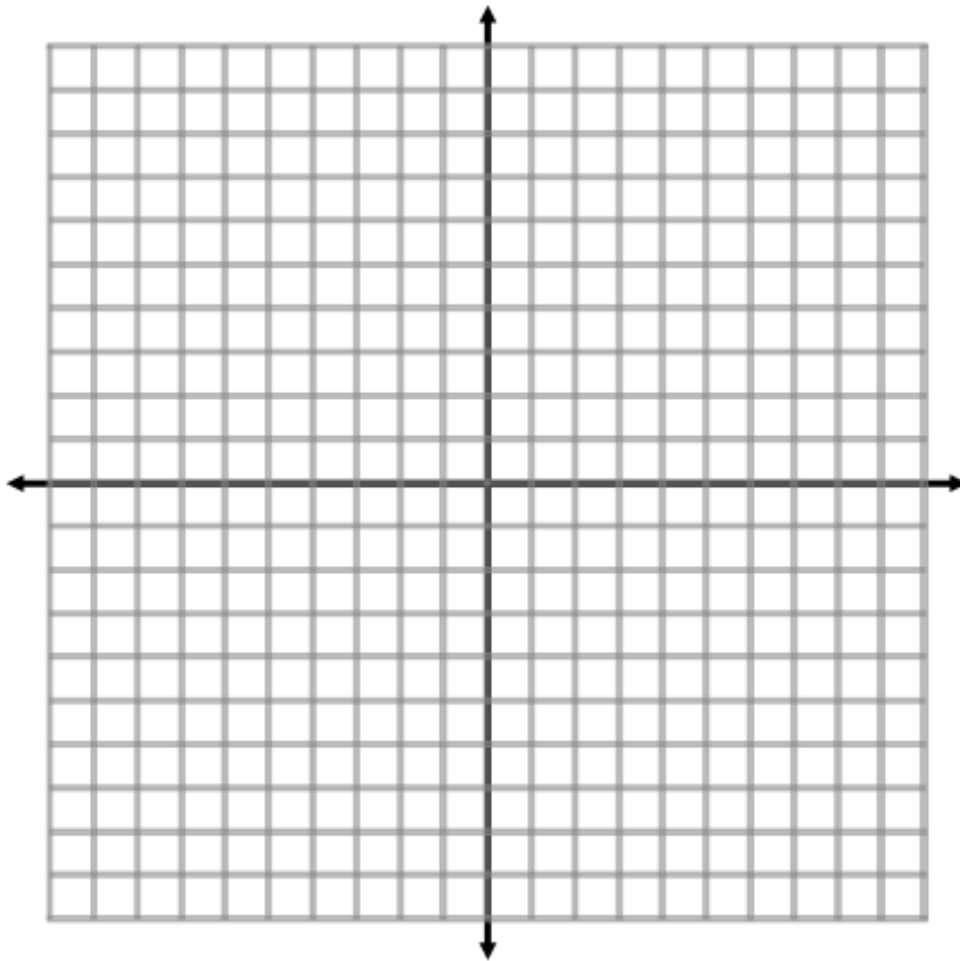


Name _____

Score _____/30 **Due 4-16**

Directions: Graph each quadratic below by completing the function tables. Use a pencil for the first equation (called the parent graph), but then use a different color for the rest of the functions. Extend each graph past the ordered pairs to create a parabola. When you are finished, answer the questions and use good descriptions and vocabulary! (1 pt each graph)



x	$y = x^2$	$y = -x^2$	$y = 2x^2$	$y = \frac{1}{2}x^2$
-4				
-3				
-2				
-1				
0				
1				
2				
3				
4				

- A. Reflection over the y-axis
- B. Reflection over the x-axis
- C. Dilation to get larger/steeper
- D. Dilation to get smaller/less steep
- E. Vertical translation
- F. Horizontal translation

1. Match the graph with the transformation/s from the list above that best describes each function when compared to the original function. (1 pt each)

_____ $y = -x^2$

_____ $y = 2x^2$

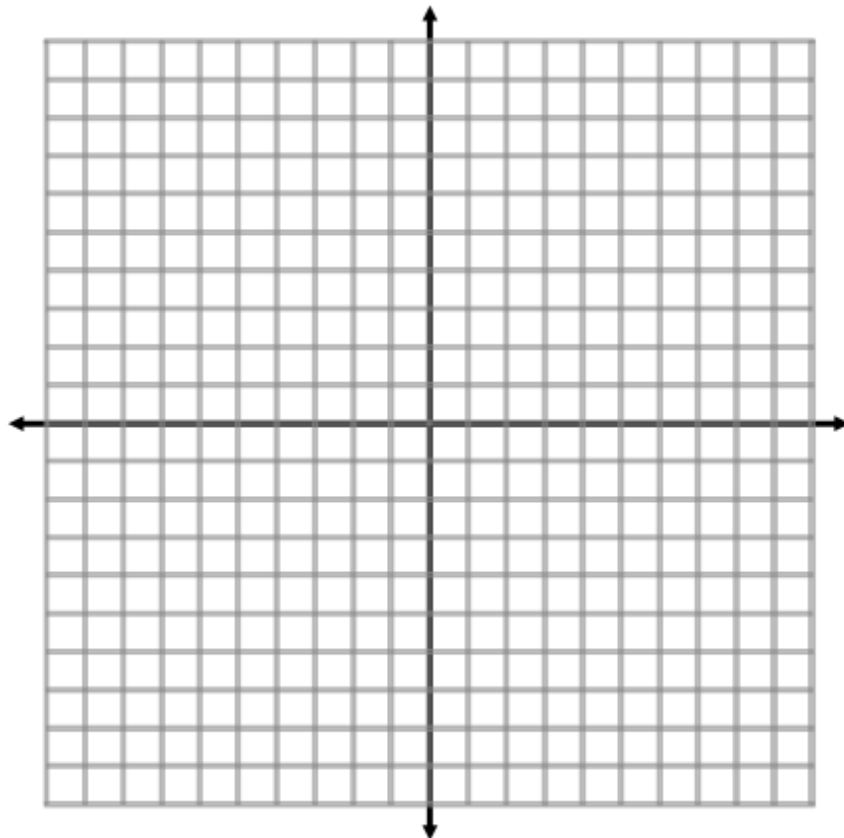
_____ $y = \frac{1}{2}x^2$

_____ $y = -\frac{1}{4}x^2$

_____ $y = -5x^2$

_____ $y = 1.5x^2$

x	$y = x^2$	$y = x^2 - 4$	$y = (x - 2)^2$	$y = (x - 2)^2 - 4$	$y = (-x - 2)^2 - 4$
-4					
-3					
-2					
-1					
0					
1					
2					
3					
4					



- A. Reflection over the y-axis
- B. Reflection over the x-axis
- C. Dilation to get larger/steeper
- D. Dilation to get smaller/less steep
- E. Vertical translation
- F. Horizontal translation

2. Match the graph with the transformation/s from the list above that best describes each function when compared to the original function. (1 pt each)

- | | |
|---------------------------|--------------------------|
| _____ $y = x^2 - 4$ | _____ $y = (x - 2)^2$ |
| _____ $y = (x - 2)^2 - 4$ | _____ $y = -.5(x)^2 - 1$ |
| _____ $y = (x + 3)^2 + 1$ | _____ $y = (-x)^2 - 7$ |
| _____ $y = 2(x - 5)^2$ | _____ $y = (x + 1)^2$ |

3. Explain how the graph of $y = (-x - 2)^2 - 4$ compares to the graph $y = (x - 2)^2 - 4$. (1 pt)

4. Describe how each change in $y = x^2$ would affect the graph of $y = x^2$. (1 pt each part)

- a. $y = ax^2$
 - when $a > 1$ _____
 - when $0 < a < 1$ _____
 - when $a < 0$ _____
- b. $y = x^2 + k$ _____
- c. $y = (x + h)^2$ _____
- d. $y = (x + h)^2 + k$ _____