Transformations - Day 1 Homework
No Graphing Calculators!!!!

Name Answer Key
Date _____ Block ____

1) Describe how the following two functions would compare to each other:

$y = 4x + 2$ $y = 4x - 1$

Function name linear

Same Slope 1 is shifted down 3 units

2) Describe how the following two functions would compare to each other:

$y = 2x^2 + 5$ $y = -2x^2 + 5$

Function name Quadratic

They are reflections of each other both shifted up 5

3) Describe how the following two functions would compare to each other:

$y = 2^x - 4$ $y = -2^x + 3$

Function name Exponential

The growth factors are the same, second is flipped and shifted up 7

4) Write a function that is shifted 2 units up from the function $f(x) = |x| + 3$.

$f(x) = |x| + 5$

5) Write a function that is shifted 4 units down from the function $f(x) = |x - 3| + 1$.

$f(x) = |x-3| - 3$

6) Write a function that is reflected from the function $y = 5x - 8$.

$y = -5x - 8$

7) Write a function that is reflected and shifts 5 units up from the function $y = \frac{1}{2}x^2 - 4$.

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

8) Write a function that is reflected and shifts 6 units down from the function $y = 4^x - 1$.

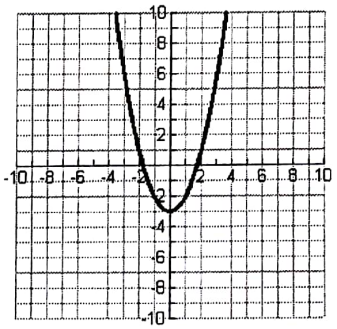
$y = -4^x - 7$

9) Write a function that shifts down 6 units and reflects the function $f(x) = -2x + 1$.

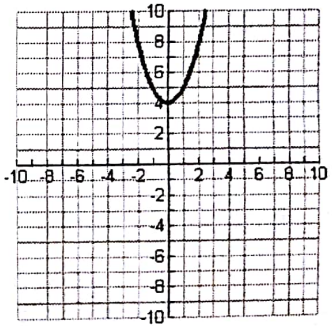
$f(x) = 2x - 5$

10) The equation $y = x^2 - 3$ is graphed below on **Graph A**. Write the equation graphed on **Graph B**.

Graph A



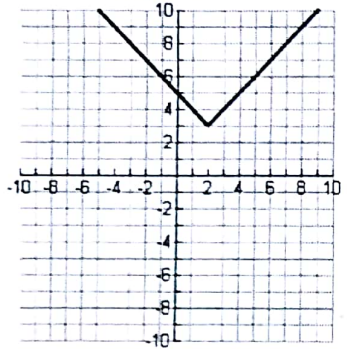
Graph B



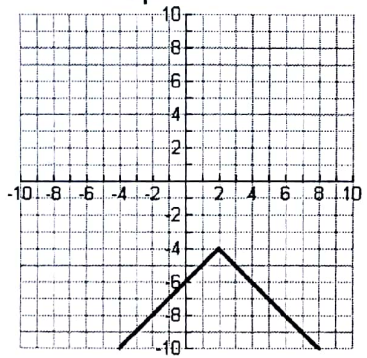
Equation of function in **Graph B** $y = x^2 + 4$

11) The equation $y = -|x - 2| + 3$ is graphed below on **Graph A**. Write the equation graphed on **Graph B**.

Graph A



Graph B



Equation of function in **Graph B** $y = -|x + 2| - 4$

12) Use the two given functions to choose the best statement comparing their graphs.

Function 1: $y = 5x^2$ Function 2: $y = 5x^2 - 8$

A. Function 2's graph is shifted up 8 units from Function 1's graph.
B. Function 2's graph is shifted down 8 units from Function 1's graph.
C. Function 2's graph reflected from Function 1's graph.
D. Function 2's graph is shifted right 8 units from Function 1's graph.

13) Use the two given functions to choose the best statement comparing their graphs.

Function 1: $y = -3^x + 4$ Function 2: $y = -3^x - 2$

A. Function 2's graph is shifted up 6 units from Function 1's graph.
B. Function 2's graph reflected from Function 1's graph.
C. Function 2's graph is shifted left 6 units from Function 1's graph.
D. Function 2's graph is shifted down 6 units from Function 1's graph.

14) Use the two given functions to choose the best statement comparing the graphs to each other.

Function 1: $y = -x - 3$ Function 2: $y = x + 1$

A. Function 2's graph is shifted down 4 units from Function 1's graph and *is* reflected.
B. Function 2's graph is shifted down 4 units from Function 1's graph and *is not* reflected.
C. Function 2's graph is shifted up 4 units from Function 1's graph and *is* reflected.
D. Function 2's graph is shifted up 4 units from Function 1's graph and *is not* reflected.

15) Use the two given functions to choose the best statement comparing the graphs to each other.

Function 1: $y = -\frac{1}{2}x^2 + 2$ Function 2: $y = -\frac{1}{2}x^2 + 6$

A. Function 2's graph is shifted down 4 units from Function 1's graph and *is* reflected.
B. Function 2's graph is shifted down 4 units from Function 1's graph and *is not* reflected.
C. Function 2's graph is shifted up 4 units from Function 1's graph and *is not* reflected.
D. Function 2's graph is shifted up 4 units from Function 1's graph and *is* reflected.