

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

Name \_\_\_\_\_  
Date \_\_\_\_\_ Block \_\_\_\_\_

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

$$y = 4x + 2$$

$$y = 4x - 1$$

Function name \_\_\_\_\_

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

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

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

Function name \_\_\_\_\_

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

$$y = 2^x - 4$$

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

Function name \_\_\_\_\_

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

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

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

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

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

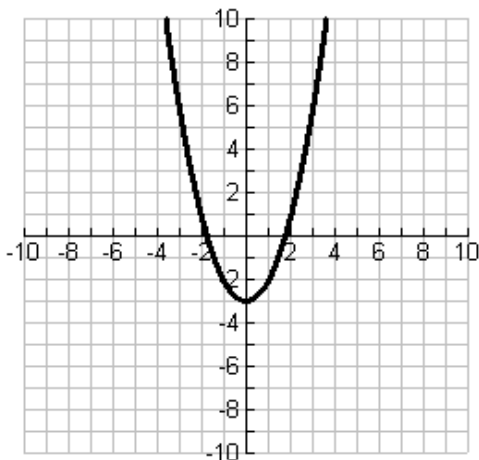
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9) Write a function that shifts down 6 units and reflects the function  $f(x) = -2x + 1$ .

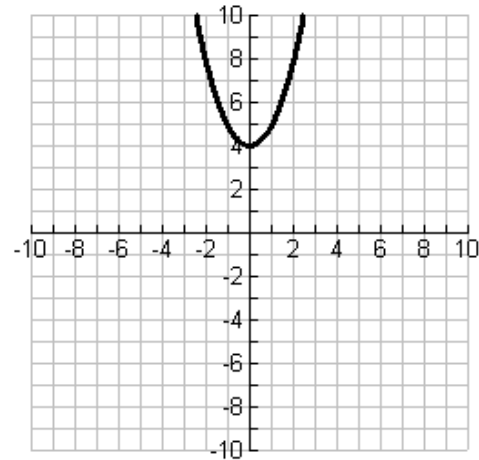
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10) The equation  $y = x^2 - 3$  is graphed below on **Graph A**. Write the equation graphed on **Graph B**.

**Graph A**

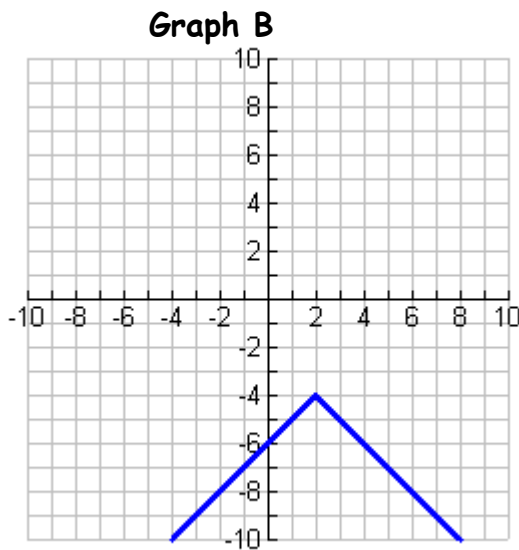
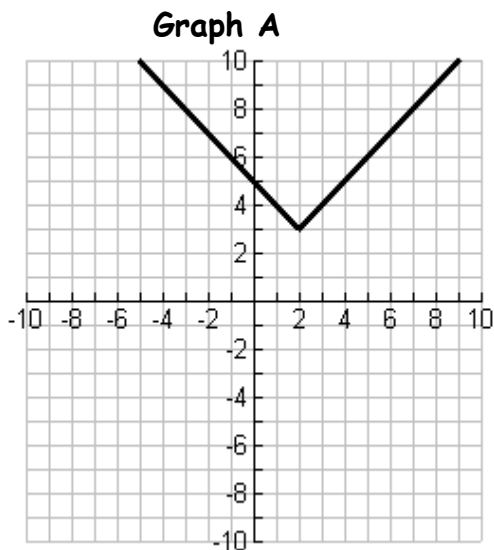


**Graph B**



Equation of function in **Graph B** \_\_\_\_\_

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



Equation of function in **Graph B** \_\_\_\_\_

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.