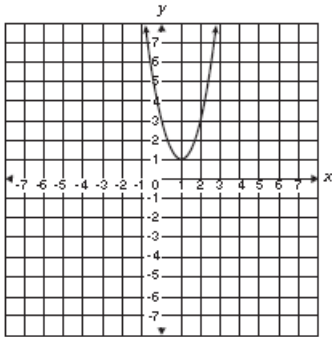


Practice – Quadratic Transformations**Name:** _____ **Date:** _____

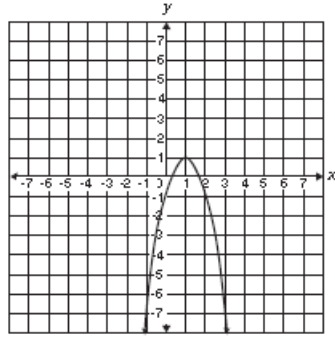
1. Mike graphed the quadratic parent function on his graphing calculator. He stopped his homework to return a text message to a friend. In the meantime, his little brother grabbed his calculator and started pushing buttons. Mike quickly grabbed his calculator from his brother and realized that the graph of his function had been translated 5 units to the right and down 6 units. What does the new equation in "Y=" look like?
2. What is the range of $f(x) = x^2 + 1$?
 - A. All real numbers
 - B. $y \geq 0$
 - C. $y \geq 1$
 - D. $y \leq 1$
3. Consider the function $f(x) = x^2$. Describe a single transformation that changes the range of the graph of $f(x)$, but not the vertex.
4. Suppose $f(x) = x^2$, which of the following is not true?
 - A. If $g(x) = ax^2$ and $|a| > 1$, the graph of $g(x)$ is a compression of $f(x)$.
 - B. If $g(x) = x^2 + d$, the graph of $g(x)$ is a vertical translation of $f(x)$.
 - C. If $g(x) = -x^2$, the graph of $g(x)$ is a reflection of $f(x)$ across the x -axis.
 - D. If $g(x) = (x + c)^2$, the graph of $g(x)$ is a horizontal translation of $f(x)$.
5. Consider the quadratic functions $f(x) = \frac{1}{3}x^2 + 1$ and $f(x) = 3x^2 - 5$.
 - A. Predict the similarities between the graphs of the two functions.
 - B. Predict the differences between the graphs of the two functions.
6. The graph of $f(x) = x^2$, is reflected across the x -axis and translated to the left 4 units. What is the value of b when the equation of the transformed graph is written in standard form?
7. Describe how the graph of each function is related to the graph of $f(x) = x^2$.
 - A. $g(x) = x^2 - 5$
 - B. $g(x) = -3x^2$
 - C. $h(x) = \frac{1}{2}x^2 + 4$
8. Describe how the graph of each function is related to the graph of $f(x) = x^2$.
 - A. $g(x) = -2x^2 - 3$
 - B. $g(x) = (-2x^2) + 1$
9. Which of the following sentences is true about the graphs of $y = 3(x - 5)^2 + 1$ and $y = 3(x + 5)^2 + 1$?

- A. Their vertices are maximums.
- B. The graphs have different shapes with different vertices.
- C. One graph has a vertex that is a maximum, while the other graph has a vertex that is a minimum.
- D. The graphs have the same shape with different vertices.

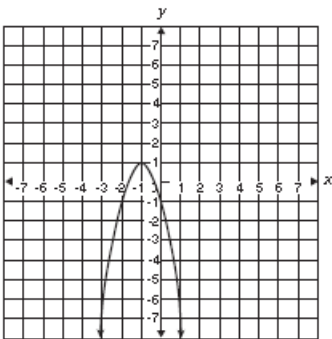
10. Which is the graph of $y = -2(x - 1)^2 + 1$?



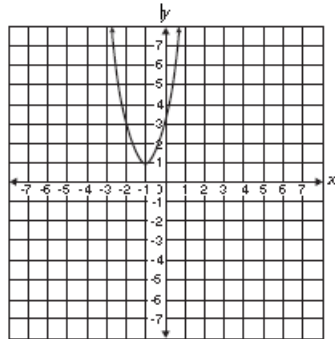
A



C



B



D

11. Which of the following most accurately describes the translation of the graph $y = (x + 3)^2 - 2$ to the graph of $y = (x - 2)^2 + 2$?

- A. The graph was translated up 4 units and right 5 units
- B. The graph was translated down 2 units and right 2 units
- C. The graph was translated down 2 units and left 3 units
- D. The graph was translated up 4 units and left 2 units