

Name: _____ Date: _____

Vertex Form of a Quadratic

$$y = a(x - h)^2 + k$$

Vertex: (h,k)

Describe in words the transformations of the parent graph for each equation.

1. $f(x) = x^2 + 5$

- a: _____
- h: _____
- k: _____

2. $f(x) = -(x+9)^2 - 2$

- a: _____
- h: _____
- k: _____

3. $f(x) = \frac{1}{2}(x-10)^2$

- a: _____
 - h: _____
 - k: _____
-

4. $f(x) = -5x^2 + 2$

- a: _____
- h: _____
- k: _____

5. $f(x) = \frac{2}{3}(x-8)^2$

- a: _____
- h: _____
- k: _____

6. $f(x) = (x+1)^2 + 4$

- a: _____
 - h: _____
 - k: _____
-

Write the quadratic equation in vertex form that has been...

_____ 7. shifted to the right 4 and up 3

_____ 8. reflected over the x-axis and shifted left 11

_____ 9. moved down 17

_____ 10. reflected over the x-axis, shifted left 9 and down 8.

Describe in words the transformations and write an equation for each quadratic function.

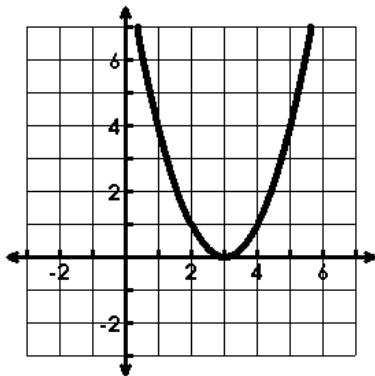
11. Vertex: _____

• a: _____

• h: _____

• k: _____

$f(x) =$ _____



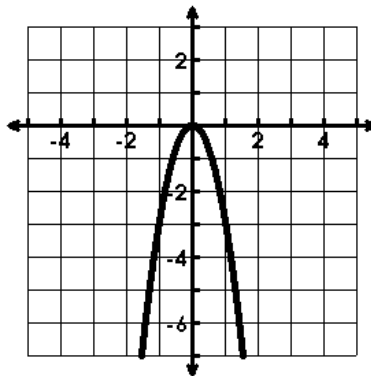
12. Vertex: _____

• a: _____

• h: _____

• k: _____

$f(x) =$ _____



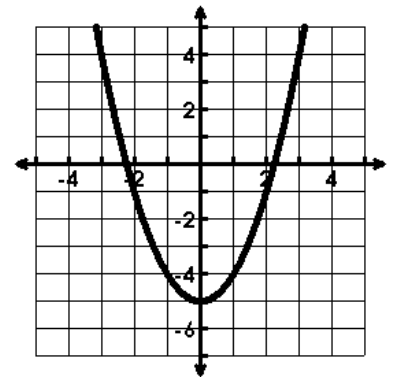
13. Vertex: _____

• a: _____

• h: _____

• k: _____

$f(x) =$ _____



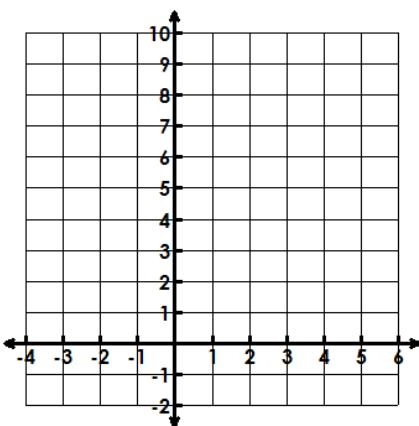
Graph the following equations Identify the vertex and the axis of symmetry.

14. $f(x) = 2(x - 1)^2$

Vertex: _____

Axis of Symmetry: $x =$ _____

Opens up or down? _____

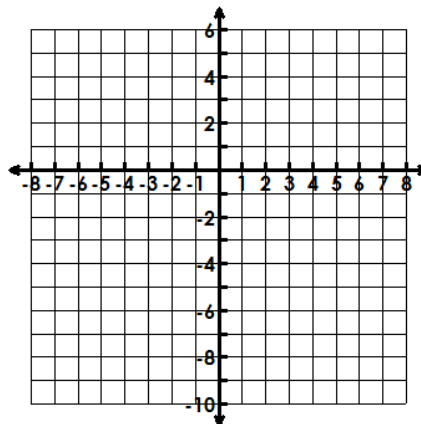


15. $f(x) = -x^2 + 4$

Vertex: _____

Axis of Symmetry: $x =$ _____

Opens up or down? _____



16. $f(x) = -3(x + 1)^2 - 3$

Vertex: _____

Axis of Symmetry: $x =$ _____

Opens up or down? _____

