

Name: _____

Guide

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: None
- h: None
- k: Up 5

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

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

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

- a: V. shrink of $\frac{1}{2}$
- h: Right 10
- k: None

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

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

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

- a: V. shrink of $\frac{2}{3}$
- h: Right 8
- k: None

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

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

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

$f(x) = (x-4)^2 + 3$

7. shifted to the right 4 and up 3 $h=4$ $k=3$

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

$f(x) = x^2 - 17$

9. moved down 17 $k=-17$

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.

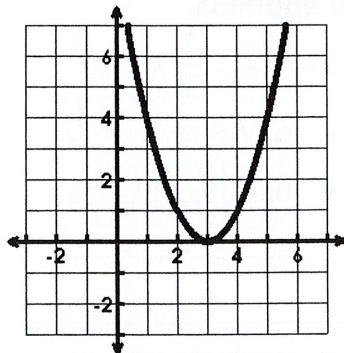
11. Vertex: (3,0)

• a: None

• h: Right 3

• k: None

$f(x) = \underline{(x-3)^2}$



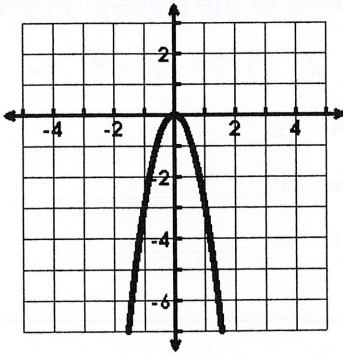
12. Vertex: _____

• a: _____

• h: _____

• k: _____

$f(x) = \underline{\hspace{2cm}}$



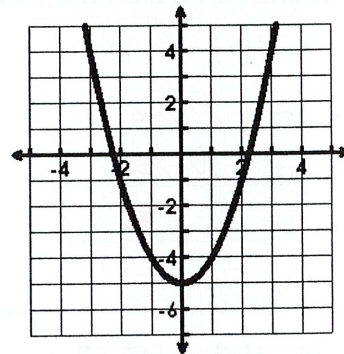
13. Vertex: (0,-5)

• a: None

• h: None

• k: Down 5

$f(x) = \underline{x^2 - 5}$



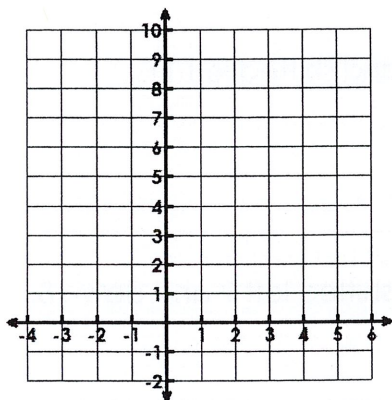
Graph the following equations Identify the vertex and the axis of symmetry.

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

Vertex: _____

Axis of Symmetry: $x = \underline{\hspace{1cm}}$

Opens up or down? _____

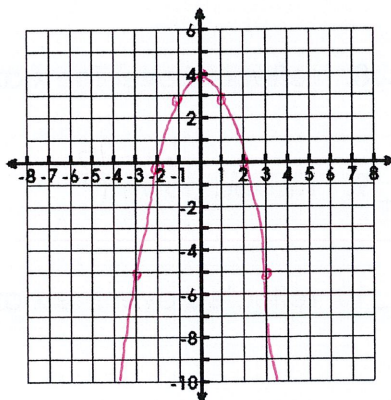


15. $f(x) = -x^2 + 4$

Vertex: (0,4)

Axis of Symmetry: $x = \underline{0}$

Opens up or down? Down



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

Vertex: _____

Axis of Symmetry: $x = \underline{\hspace{1cm}}$

Opens up or down? _____

