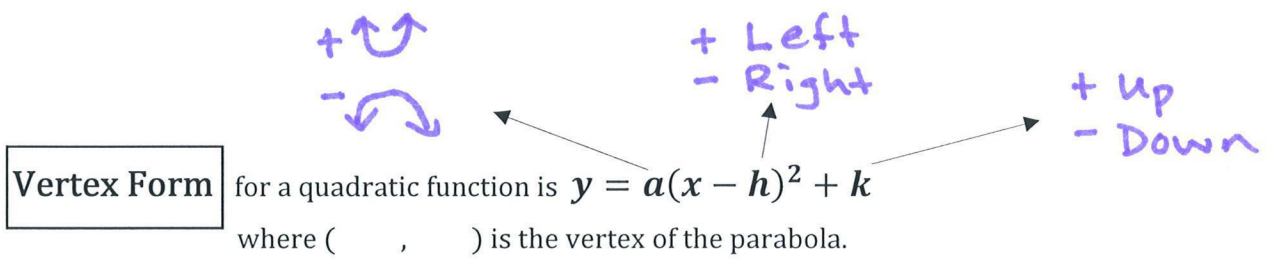


<p>VERTEX FORM of a Quadratic Equation</p> <p>* Keep sign on k, Switch sign on h for the vertex</p>	<p>• Vertex Form of a Quadratic Equation: $y = a(x-h)^2 + k$</p> <p>• (h, k) is the vertex; $x = h$ is the axis of symmetry</p>	
	<p>Directions: Give the axis of symmetry and vertex of each equation.</p>	
	<p>1. $y = (x+4)^2 - 2$ h k</p> <p>Axis of Symmetry: $x = -4$ Vertex: $(-4, -2)$</p>	<p>2. $y = -(x-3)^2 + 0$ h k</p> <p>Axis of Symmetry: $x = 3$ Vertex: $(3, 0)$</p>
	<p>3. $y = (x-5)^2 - 4$ h k</p> <p>Axis of Symmetry: $x = 5$ Vertex: $(5, -4)$</p>	<p>4. $y = -2x^2 + 3$</p> <p>Axis of Symmetry: $x = 0$ Vertex: $(0, 3)$</p>



Practice:

1. Describe the transformation that occurred compared to the parent function $y = x^2$.

- a) $f(x) = -x^2 + 10$ _____
- b) $g(x) = (x + 4)^2 + 9$ _____
- c) $y = -(x - 22)^2$ _____
- d) $h(x) = (-x + 5)^2$ _____
- e) $y = (x - 6)^2 + 2$ _____

2. Write a quadratic equation whose graph is shifted down 7 units. _____

3. Write a quadratic equation whose graph is shifted left 2 units. _____

4. Write two quadratic equations that are reflections of each other. _____

5. Given $y = x^2 - 1$, write an equation whose graph is reflected and shifted up 5 units. _____

6. What is the vertex of the function $y = (x - 6)^2 - 8$? _____