Vertex Form

|a| stretches or compresses parabola
$a > 0$ opens up; $a < 0$ opens down

h gives the x-coordinate of the vertex
(horizontal translation)

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

k gives the y-coordinate of the vertex
(vertical translation)

Write a quadratic equation with vertex at (2,-1) and point (4,3).

Vertex Form $y = a(x - h)^2 + k$ with vertex at (h,k)

Write a quadratic equation with vertex at (3,1) and point (1,9).

Vertex Form $y = a(x - h)^2 + k$ with vertex at (h,k)

Write a quadratic equation with vertex at (-2,-3) and point (-4,-11).

Vertex Form $y = a(x - h)^2 + k$ with vertex at (h,k)

Write a quadratic equation with vertex at (3,-2) and point (5,0).

Vertex Form $y = a(x - h)^2 + k$ with vertex at (h,k)

Vertex Form

| $|a|$ stretches or compresses parabola $a > 0$ opens up; $a < 0$ opens down | h gives the x-coordinate of the vertex (horizontal translation) |

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

k gives the y-coordinate of the vertex (vertical translation)

Writing Quadratic Equations Given the Vertex and a Point on a Parabola