

EXAMPLE 1**Write a quadratic function in vertex form**

Write a quadratic function for the parabola shown.

SOLUTION

Use vertex form because the vertex is given.

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

Vertex form

$$y = a(x - 1)^2 - 2$$

Substitute 1 for h and -2 for k .

Use the other given point, $(3, 2)$, to find a .

$$2 = a(3 - 1)^2 - 2$$

Substitute 3 for x and 2 for y .

$$2 = 4a - 2$$

Simplify coefficient of a .

$$1 = a$$

Solve for a .

