

Quadratic Functions

Graph of a Quadratic Function

$$y = ax^2 + bx + c, a \neq 0$$

Axis of Symmetry $\rightarrow$ Line $\boxed{x = -\frac{b}{2a}}$

The x-coordinate of the vertex is $-\frac{b}{2a}$

Graph $y = x^2 - 6x + 4$

$$x = -\frac{b}{2a}$$

$$x = -\frac{(-6)}{2(1)}$$

$$x = 3$$

Vertex (x, y)

(3, y)

(3, -5)

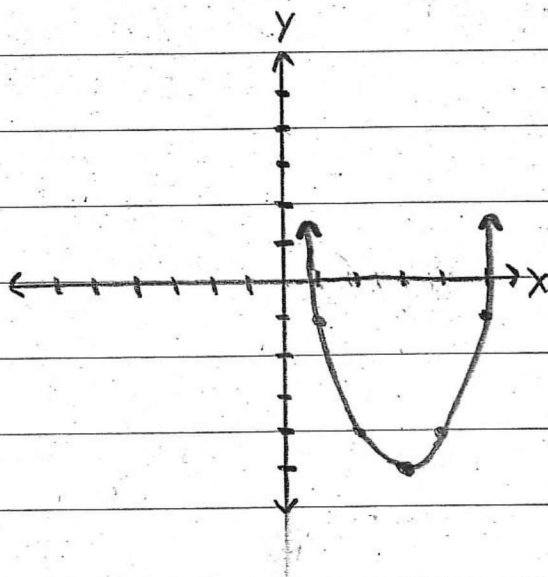
To find y, substitute 3 in for x

$$y = x^2 - 6x + 4$$

$$y = 3^2 - 6(3) + 4$$

$$y = 9 - 18 + 4$$

$$y = -5$$



x	y
3	-5
2	-4
4	-4
1	-1
5	-1