

Quadratics - Standard Form

$$ax^2 + bx + c$$

Ex. 1 $2x^2 - 4x - 5$
 $a=2$ $b=-4$ $c=-5$

Ex. 2 $x^2 + 4x + 5$
 $a=1$ $b=4$ $c=5$

★ Finding axis of symmetry / vertex:

Ex. 3 $2x^2 - 4x - 5$
 $a=2$ $b=-4$ $c=-5$

Ex. 4 $x^2 + 4x + 5$
 $a=1$ $b=4$ $c=5$

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

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$$x = \frac{-(-4)}{2(2)}$$

$$x = \frac{-(4)}{2(1)}$$

$x = 1$ ← axis of symmetry → $x = -2$

$$f(1) = 2(1)^2 - 4(1) - 5 = -7$$

$$f(-2) = (-2)^2 + 4(-2) + 5 = 1$$

Vertex: $(1, -7)$

Vertex: $(-2, 1)$