

What you will learn about:  
Writing Equations of Quadratics

Standard Form

$$y = ax^2 + bx + c$$

Intercept Form

$$y = a(x-p)(x-q)$$

Vertex Form

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

f O I L

Fist

Outer

Inner

Last

Write the equation in standard form.

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

$$(x+1)(x+1) - 4$$

$$x^2 + x + x + 1 - 4$$

$$x^2 + 2x + 1 - 4$$

$$y = x^2 + 2x - 3$$

$$f(x) = 2(x+3)^2 - 2$$

$$2(x+3)(x+3) - 2$$

$$2(x^2 + 6x + 9) - 2$$

$$2x^2 + 12x + 18 - 2$$

$$2x^2 + 12x + 16$$

Write each equation in vertex form

$$f(x) = x^2 + 6x - 2$$

$$f(x) + 2 = x^2 + 6x + 1$$

$$+ 1$$

$$f(x) + 11 = (x+3)^2$$

$$f(x) = (x+3)^2 - 11$$

$$g(x) = (x-2)^2 + 6$$

$$(x-2)(x-2) + 6$$

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

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

$$x^2 - 4x + 10$$

$$g(x) = -(x+2)^2 + 1$$

$$-(x+2)(x+2) + 1$$

$$-(x^2 + 4x + 4) + 1$$

$$-x^2 - 4x - 4 + 1$$

$$-x^2 - 4x - 3$$

$$g(x) = x^2 - 12x - 10$$