

What you will learn about:  
Vertex Form

Vertex Form

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

Locate the vertex of each quadratic function. Tell whether it is a maximum value or a minimum value. Find the y-intercept for each equation.

$$g(x) = (x - 3)^2 + 5$$

$$f(x) = 3(x - 7)^2 - 12$$

$$m(x) = (x - 1)^2 + 25$$

$$n(x) = -2(x + 6)^2 + 20$$

Completing the Square

Find the value of  $c$  that completes the square. Write your expression as a square of a binomial.

$$x^2 + 12x + c$$

$$x^2 - 6x + c$$

$$x^2 - 15x + c$$

$$x^2 + 11x + c$$

$$x^2 - \frac{25}{13}x + c$$

a = 1

Use completing the square to write each function in vertex form. Label the vertex and find the y-intercept.

$$f(x) = x^2 - 6x + 11$$

$$f(x) = x^2 - 2x - 9$$

$$f(x) = x^2 + 16x + 14$$

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

$$f(x) = x^2 + 7x - 1$$