

Write the three forms of a quadratic function and give what each tell you easily about the function.

Standard Form

Intercept Form

Vertex Form

Given the function $f(x) = (x - 6)(x + 4)$. Find the following key components and graph the function. Show your work or explain how to get the solution.

Opening Direction

Line of symmetry and vertex

X-intercepts

Y-intercept

Domain

Range

Given the function $f(x) = -3(x + 1)^2 + 4$. Find the following key components and graph the function. Show your work or explain how to get the solution.

Opening Direction

Line of symmetry and vertex

Y-intercept

Domain

Range

Rewrite the function $f(x) = -3(x + 1)^2 + 4$ in standard form. What new information does this form give you easily?

Rewrite the function $f(x) = (x - 6)(x + 4)$ in standard form. What new information does this form give you easily?

Convert the following equation from vertex form to standard form.

$$y = (x - 3)^2 - 5$$

$$y = 4(x + 2)^2 + 1$$

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

Convert the following equation from intercept form to standard form.

$$y = (2x - 3)(x + 4)$$

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

$$y = -5(x - 1)(x - 3)$$

Describe the transformation for each function from the function $f(x) = x^2$.

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

$$g(x) = -\frac{1}{2}(x - 1)^2 + 2$$