

Recall Finding **Vertex Form** of a Quadratic Function.

$$f(x) = 2x^2 + 4x - 30$$

$$f(x) = 2(x^2 + 2x + 1) - 30 - 2$$

$$f(x) = 2(x + 1)^2 - 32$$

The Vertex is at $V(-1, -32)$

The Axis of Symmetry is $x = -1$

The x-coordinate of the vertex can be found by $-\frac{b}{2a}$

There is another Form of a Quadratic Function.

This is the **Intercept Form** of the Quadratic Function.

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

This form tells us that the graph has x-intercepts at p and at q

$$f(x) = 2x^2 + 4x - 30$$

We will factor the leading coefficient, 2, from all terms.

$$f(x) = 2(x^2 + 2x - 15)$$

$$f(x) = 2(x - 3)(x + 5)$$

The x-intercepts are at 3 and -5

The y-intercept is -30

Not all Quadratic Functions have an Intercept Form.

If the graph does not intersect the x-axis, there is no Intercept Form available.

Assignment 112

02.02 Characteristics of Quadratic Functions

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