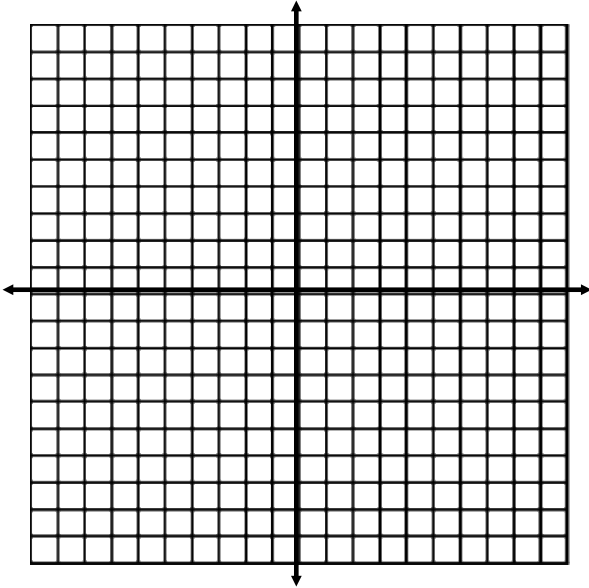


2.1: Quadratic Function Review

Properties of Quadratic Functions



General/Standard Form



Axis of Symmetry:

Vertex:

“a” value tells you _____.

Example) Sketch a graph of the function $f(x) = 2x^2 - 8x + 1$. Then give its axis of symmetry, vertex, and y-intercept, domain, range, interval(s) of increasing, and interval(s) of decreasing.

Domain:

Range:

Axis of Symmetry:

Vertex:

y-intercept:

Increasing:

Decreasing:

Example) *continuation*

Where are the x-intercept(s) of $f(x)$?

Intercept Form



x-intercepts:

Axis of Symmetry:

"a" value tells you _____.

Example) Sketch a graph of the function $f(x) = 3(x - 2)(x - 8)$. Then give its axis of symmetry, vertex, and y-intercept, domain, range, interval(s) of increasing, and interval(s) of decreasing.

Domain:

Range:

Axis of Symmetry:

Vertex:

y-intercept:

x-intercept(s):

Increasing:

Decreasing:

Vertex Form



Axis of Symmetry:

Vertex:

"a" value tells you _____.

Example) Sketch a graph of the function $f(x) = -2(x - 1)^2 + 8$. Then give its axis of symmetry, vertex, and y-intercept, domain, range, interval(s) of increasing, and interval(s) of decreasing.

Domain:

Range:

Axis of Symmetry:

Vertex:

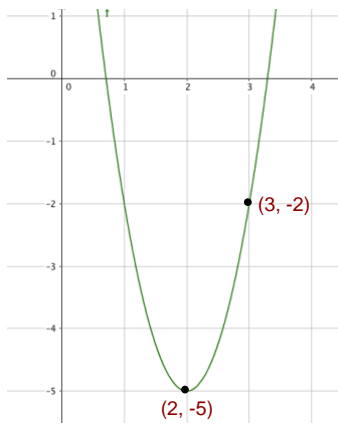
y-intercept:

x-intercept(s):

Increasing:

Decreasing:

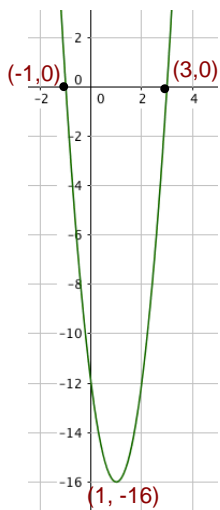
Example) Give the equation of the function graphed below in vertex form.



Example) *continuation*

How would I find the x-intercepts of the function?

Example) Give the equation of the function graphed below in intercept form.



Example) *continuation*

Write the equation of this graphed function in standard form.

Solving Quadratic Equations

Method 1: Taking a Square Root

$$m^2 + 8 = 16$$

Method 2: Factoring

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

Method 3: Completing the Square

$$x^2 + 6x - 1 = 0$$

Method 4: Quadratic Formula

$$3x^2 - 9x + 2 = 0$$