

Quadratic Form

$$f(x) = ax^2 + bx + c$$

Vertex Form

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

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Graph the following quadratic function:

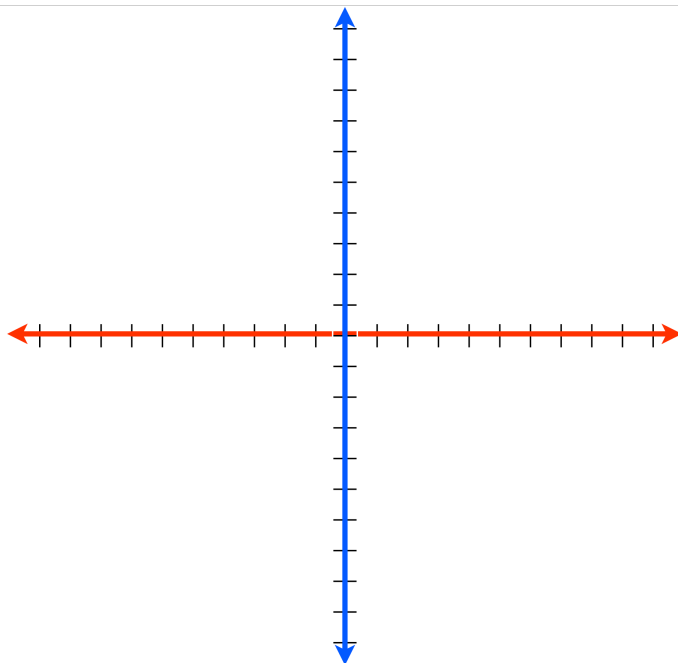
$$f(x) = 2(x - 2)^2 + 3$$

Vertex

Axis of Symmetry

Direction

Width



Graph the following quadratic function:

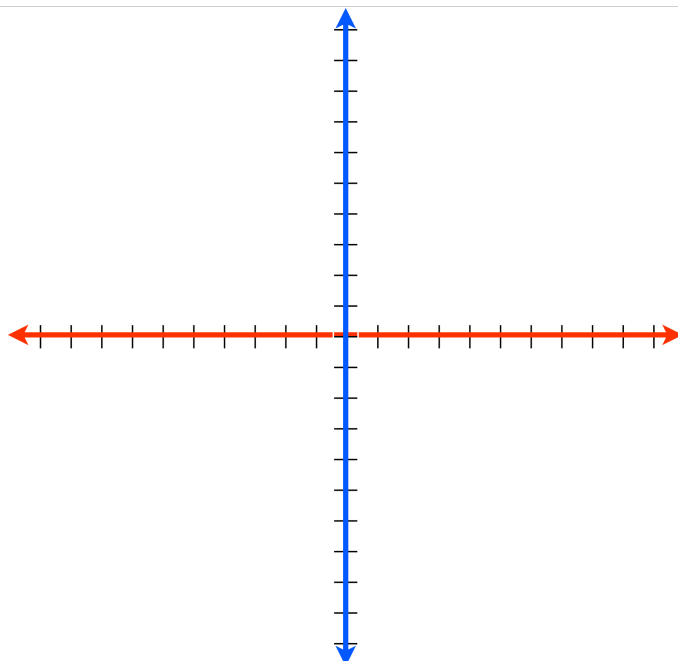
$$f(x) = -\frac{1}{2}(x + 4)^2 - 2$$

Vertex

Axis of Symmetry

Direction

Width



Graph the following quadratic function:

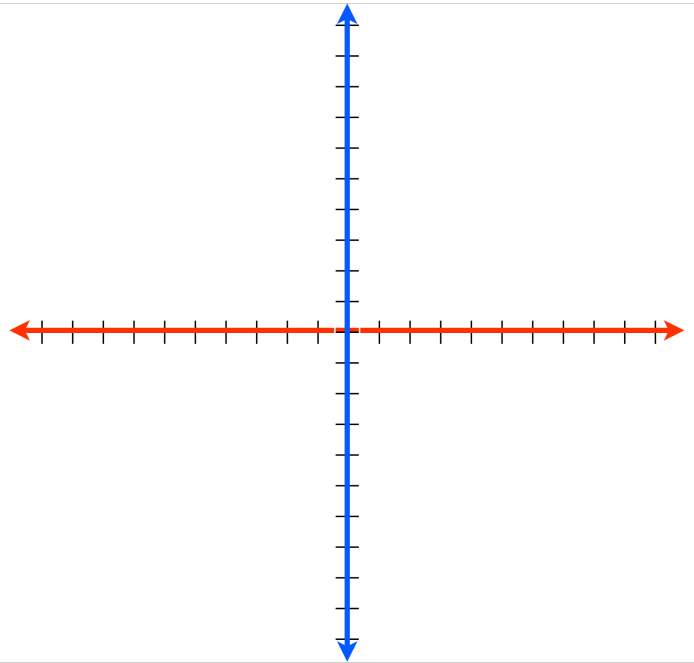
$$f(x) = (x - 3)^2 - 6$$

Vertex

Axis of Symmetry

Direction

Width



Vertex Form

if $a > 0$, parabola opens up
if $a < 0$, parabola opens down

h gives the x -coordinate of the vertex

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

if $|a| > 1$, parabola becomes more narrow
if $0 < |a| < 1$, parabola becomes more wide

k gives the y -coordinate of the vertex