Acumen Tutoring™

Algebra Memorize Me™

Graphing Quadratic Equations

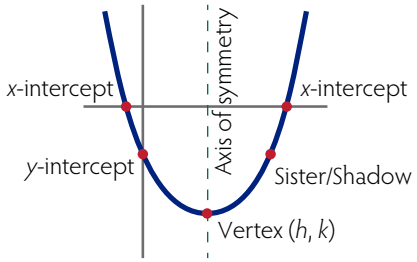
Quadratic Equation Forms

The items below are listed in the most efficient order for calculating them.

Standard / General Form: $y = Ax^2 + Bx + C$

Axis of Symmetry	$x = \frac{-B}{2A}$
Vertex (h, k)	*x*-value (*h*): $h = \frac{-B}{2A}$ ← Same as the AoS value. *y*-value (*k*): Plug *x*-value into equation
x-intercepts	Set *y* equal to zero and solve for *x*
y-intercept	(0, *C*) ← *C* is the constant from the equation
Sister Point	(2*h*, *y*-intercept) ← *h* is the x-value of the axis of symmetry

Anatomy of a Parabola



Vertex / Standard Form: $y = A(x - h)^2 + k$

Vertex	(*h*, *k*) ← From the equation
Axis of Symetry	Equation: $x = h$ ← *h* is the x-value of the vertex
x-intercepts	Set *y* equal to zero and solve for *x*
y-intercept	Set *x* to zero and evaluate for *y*.
Sister Point	(2*h*, *y*-intercept) ← *h* is the x-value of the axis of symmetry

"T-Chart" Values...

If you construct a T-chart, choose *x*-values that are 1 and 2 above and below the *x*-value of your vertex.

For example, if your vertex is (1,3), then your T-chart should have the following *x*-values:

x	*y*
–1	
0	
1	3
2	
3	

Factored / Intercept / Root Form: $y = A(x - x_1)(x - x_2)$

Axis of Symetry	Equation: $x = \frac{x_1 + x_2}{2}$
Vertex	x-value (*h*): $h = \frac{x_1 + x_2}{2}$ ← Same as the AoS value. *y*-value (*k*): k = plug *x*-value into equation
x-intercepts	$(x_1, 0), (x_2, 0)$
y-intercept	Set *x* to zero and evaluate for *y*.
Sister Point	(2*h*, *y*-intercept) ← *h* is the x-value of the axis of symmetry

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