

Standard Form
General Form

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

Axis of Symmetry

$$X = \frac{-b}{2a}$$

ex. $3x^2 - 2x + 1 = y$

$$X = \frac{-(-2)}{2(3)} = \frac{2}{6} = \frac{1}{3}$$

Vertex Point

$$\left(\frac{-b}{2a}, f\left(\frac{-b}{2a}\right) \right)$$

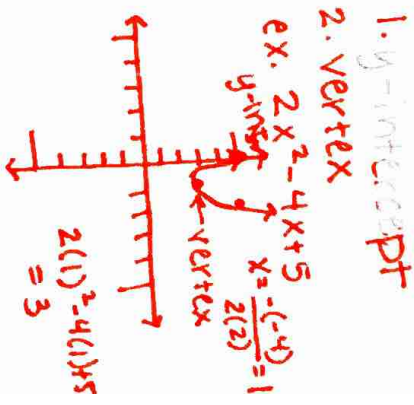
plug in
x into
the eq.

Extra Information

y-intercept, $x = 0$

$$(0, c)$$

Graph



Vertex Form

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

axis of symmetry

$$X = h$$

ex. $y = 3(x-5)^2 + 4$

$$x = 5$$

vertex point

$$(h, k)$$

ex. $3(x-1)^2 + 4 = y$

vertex: $(1, 4)$

ex. $y = 2(x+2)^2 - 3$

vertex: $(-2, -3)$

*h is opposite

axis of symmetry

$$X = \frac{p+q}{2}$$

vertex pt.

$$\left(\frac{p+q}{2}, f\left(\frac{p+q}{2}\right) \right)$$

average
of x's
eg.

plug in
x into
eq.

extra info.

x-intercepts, $y = 0$

$$(p, 0) \text{ ; } (q, 0)$$

ex. $y = 3(x+1)(x-4)$

$$(-1, 0) \text{ ; } (4, 0)$$

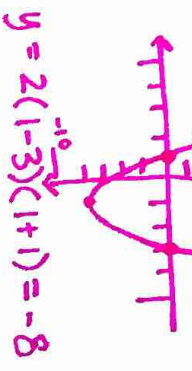
1. x-intercepts

2. vertex

ex. $2(x-3)(x+1) = y$

$(3, 0)$; $(-1, 0)$

$x = \frac{3+(-1)}{2} = 1$



Factored Form

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