

Getting Information from Quadratic Equations

	Vertex Form $y = a(x-h)^2 + k$	Standard Form $y = ax^2 + bx + c$	Factored Form $y = a(x-r)(x-s)$
Vertex	<p>How to: It's just hand k!</p> <p>Example: $y = \frac{1}{4}(x+6)^2 - 4$</p> <p>$(X, Y) = (-6, -4)$</p>	<p>How to: Complete the square!</p> <p>Example: $y = 2x^2 - 4x - 16$</p> <p>$y = 2(x^2 - 2x + 1) - 16$</p> <p>$y = 2(x-1)^2 - 18$</p> <p>$(X, Y) = (1, -18)$</p>	<p>How to: Go halfway between zero for h, plug in to get k.</p> <p>Example: $y = -2(x-2)(x+6)$</p> <p>$h = \frac{2-6}{2} = -2$</p> <p>$k = -2(-2-2)(-2+6) = +32 \quad (-2, +32)$</p>
Zeros	<p>How to: Expand then factor/Quadratic</p> <p>Example: $y = \frac{1}{4}(x+6)^2 - 4$</p> <p>$y = \frac{1}{4}(x^2 + 12x + 36) - 4$</p> <p>$y = \frac{1}{4}x^2 + 3x + 5$</p> <p>$x = \frac{-3 \pm \sqrt{9-5}}{0.5} = \frac{-3 \pm 2}{0.5} = -2, -10$</p>	<p>How to: Factor/Quadratic Formula</p> <p>Example: $y = 2x^2 - 4x - 16$</p> <p>$y = 2(x^2 - 2x - 8)$</p> <p>$y = 2(x-4)(x+2)$</p> <p>$x = 4, -2$</p>	<p>How to: r and s!</p> <p>Example: $y = -2(x-2)(x+6)$</p> <p>$x = 2, -6$</p>
y-Intercept	<p>How to: $(a \times h^2) + k$</p> <p>Example: $y = \frac{1}{4}(x+6)^2 - 4$</p> <p>$= \frac{1}{4}(6^2) - 4$</p> <p>$= \frac{36}{4} - 4 = 9 - 4 = 5$</p>	<p>How to: it's c</p> <p>Example: $y = 2x^2 - 4x - 16$</p> <p>$y = -16$</p>	<p>How to: $(a)(-r)(-s)$</p> <p>Example: $y = -2(x-2)(x+6)$</p> <p>$= -2(-2)(6)$</p> <p>$= 24$</p>