Helpful Quadratic Hints

Factored Form: f(x) = a(x – p)(x – q)

Vertex: x coordinate is halfway between the x intercepts, substitute back into function to find y-value.

x-intercepts: opposite value in the two parentheses (p, 0) and (q, 0)

y-intercept: a(p)(q). C is the y-intercept.

Stretch: a. a whole number makes parabola skinnier, fraction makes it wider.

Example: f(x) = (x+ 3)(x – 1)

Vertex: x-intercepts: y-intercepts:

Find the vertex, the stretch, the axis of symmetry, the x-intercept, the *y*-intercept, and the direction the parabola opens for each of the following.

1)  2)  3) 

 vertex: vertex: vertex:

stretch: stretch: stretch:

AoS: AoS: AoS:

x-ints: x-ints: x-ints:

y-int: y-int: y-int:

open: open: open:

Vertex Form: f(x) = a(x-h)2 + k

Vertex: (h, k)

x-intercepts: set y = 0 and solve for x

y-intercept: set x = 0 and solve for y. C is the y-intercept.

Stretch: a. a whole number makes parabola skinnier, fraction makes it wider.

Example: f(x) = -2(x – 3)2 + 4

Vertex: x-intercepts: y-intercept:

Find the vertex, the stretch, the axis of symmetry, the x-intercept, the *y*-intercept, and the direction the parabola opens for each of the following.

1)  2)  3) 

vertex: vertex: vertex:

stretch: stretch: stretch:

AoS: AoS: AoS:

x-ints: x-ints: x-ints:

y-int: y-int: y-int:

open: open: open:

Standard Form: f(x) = ax2 + bx + c

Vertex: x = $\frac{-b}{2a}$ then substitute back into equation to find y value.

x-intercepts: try factoring the equation

y-intercept: the y-intercept is the value of c

Stretch: a. a whole number makes parabola skinnier, fraction makes it wider.

Example: f(x) = x2 - 6x + 8

Vertex: x-intercepts: y-intercept:

Find the vertex, the stretch, the axis of symmetry, the x-intercept, the *y*-intercept, and the direction the parabola opens for each of the following.

1)  2)  3) 

vertex: vertex: vertex:

stretch: stretch: stretch:

AoS: AoS: AoS:

x-ints: x-ints: x-ints:

y-int: y-int: y-int:

open: open: open: