Name: _____

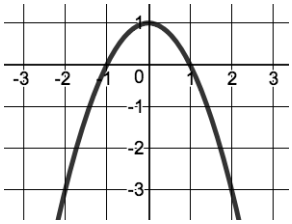
Writing Quadratic Equations from a Graph (Part 1)

To write the **standard** $(f(x) = ax^2 + bx + c)$, **vertex** $(f(x) = a(x-h)^2 + k)$ and **factored** form $\big(f(x) = a(x - r_1)(x - r_2)\big)$ equations of a quadratic, you must identify a, b, c, h, k, r_1 & r_2. All of which can be found using the graph.

a is the stretch: go over 1, how far do you go up or down before you hit the curve?	b is not on the graph, but it can be found using the formula $x = \frac{-b}{2a}$ $\left(same\ as\ h = \frac{-b}{2a}\right)$	c is the y intercept: where does the curve cross the y-axis?
h is the axis of symmetry: what is the x-value of the vertex?	k is the maximum or minimum: what is the y-value of the vertex?	r_1 and r_2 are the x-intercepts (roots/zeros/solutions): where does the curve cross the x-axis?

Write each equation form for the quadratic.

1.



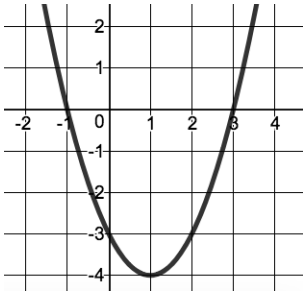
$a =$
$b =$
$c =$
$h =$
$k =$
$r_1 =$
$r_2 =$

Standard Form:

Vertex Form:

Factored Form:

2.



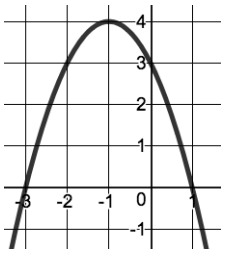
$a =$
$b =$
$c =$
$h =$
$k =$
$r_1 =$
$r_2 =$

Standard Form:

Vertex Form:

Factored Form:

3.



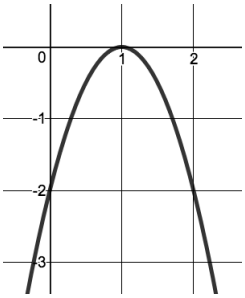
$a =$
$b =$
$c =$
$h =$
$k =$
$r_1 =$
$r_2 =$

Standard Form:

Vertex Form:

Factored Form:

4.



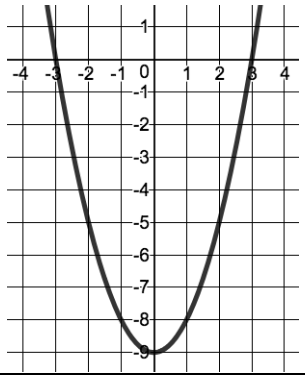
$a =$
$b =$
$c =$
$h =$
$k =$
$r_1 =$
$r_2 =$

Standard Form:

Vertex Form:

Factored Form:

5.



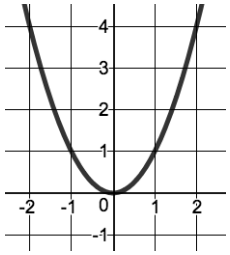
$a =$
$b =$
$c =$
$h =$
$k =$
$r_1 =$
$r_2 =$

Standard Form:

Vertex Form:

Factored Form:

6.



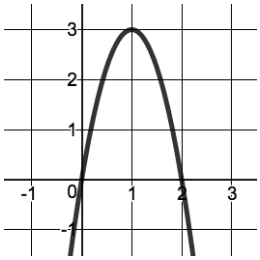
$a =$
$b =$
$c =$
$h =$
$k =$
$r_1 =$
$r_2 =$

Standard Form:

Vertex Form:

Factored Form:

7.



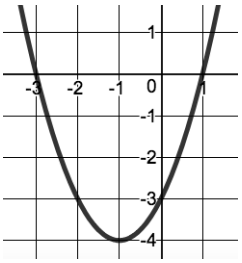
$a =$
$b =$
$c =$
$h =$
$k =$
$r_1 =$
$r_2 =$

Standard Form:

Vertex Form:

Factored Form:

8.



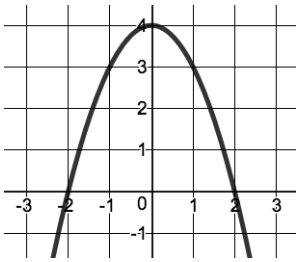
$a =$
$b =$
$c =$
$h =$
$k =$
$r_1 =$
$r_2 =$

Standard Form:

Vertex Form:

Factored Form:

9.



$a =$
$b =$
$c =$
$h =$
$k =$
$r_1 =$
$r_2 =$

Standard Form:

Vertex Form:

Factored Form: