Name: _____

Graphing Quadratics and their Inverses

To graph a quadratic, you must first determine the **vertex**, by identifying the middle x-value (also called the axis of symmetry), and then plugging it in to find the y-value that goes with it. You can then find two mirrored points on both sides, either by using the slope to move out from the vertex ($up/down = a(change)^2$) or by picking $x = 0$ (and its mirror) and one other x to plug in and solve for y.

Middle x (axis of symmetry)		
Standard Form $f(x) = ax^2 + bx + c$ $x = \dfrac{-b}{2a}$	Vertex Form $f(x) = a(x - h)^2 + k$ $x = h$ *Don't forget to switch the sign!*	Factored Form $f(x) = a(x - r_1)(x - r_2)$ $x = \dfrac{(r_1) + (r_2)}{2}$ *Don't forget to switch the signs!*

Graph each quadratic. Identify the vertex, x-intercepts, and y-intercept. Then, graph the inverse using those points (switch the x with the y).
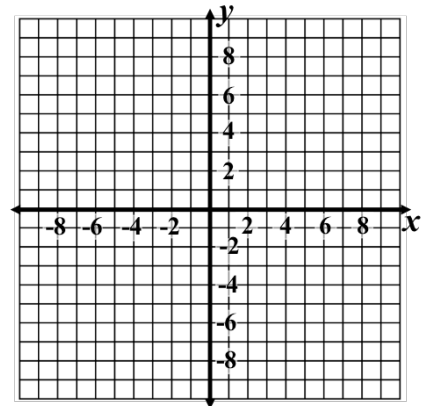
1. $f(x) = -3(x - 1)^2$

Identify the Axis of Symm, & x-intercept(s)   x   y
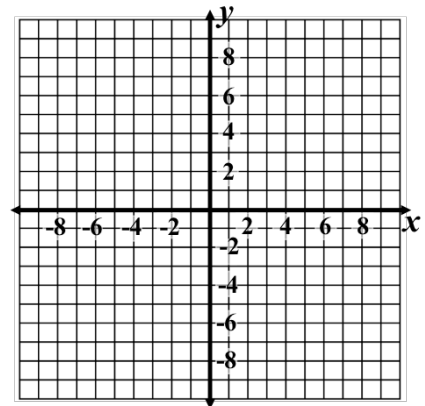
Identify the y-intercept

2. $g(x) = (x - 2)^2 - 1$

Identify the Axis of Symm, & x-intercept(s)   x   y
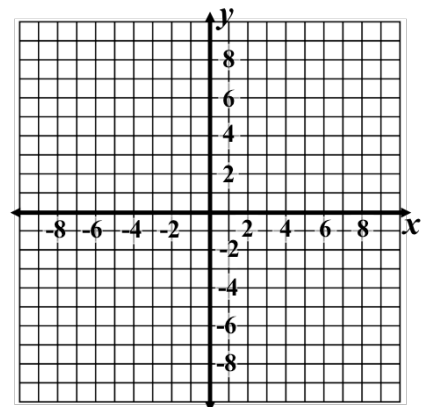
Identify the y-intercept

3. $h(x) = 2(x + 3)^2 - 8$

Identify the Axis of Symm, & x-intercept(s)   x   y

Identify the y-intercept
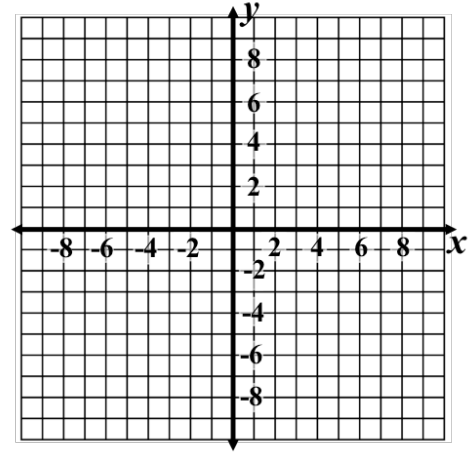
4. $j(x) = -(x)^2 + 9$

Identify the Axis of Symm, & x-intercept(s) _____ x | y _____ *Identify the y-intercept*
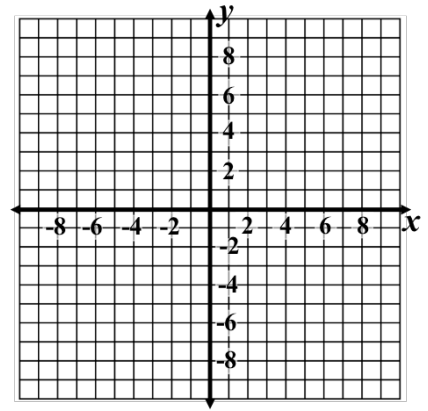
5. $f(x) = -3x^2 + 6x - 3$

Identify the Axis of Symm, & x-intercept(s) _____ x | y _____ *Identify the y-intercept*
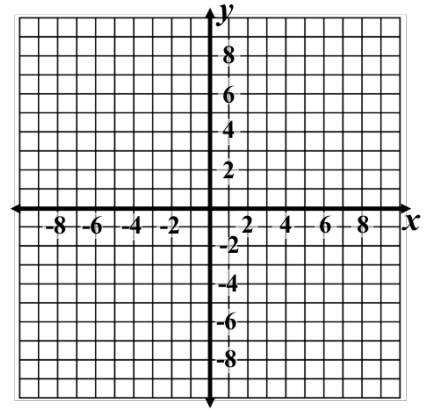
6. $g(x) = x^2 - 4x + 3$

Identify the Axis of Symm, & x-intercept(s) _____ x | y _____ *Identify the y-intercept*

7. $h(x) = 2(x + 5)(x + 1)$

Identify the Axis of Symm, & x-intercept(s) _____ x | y _____ *Identify the y-intercept*