Name: _____ Date: _____

Graphing Quadratics – Standard Form

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

Most common way to see a quadratic written.

Axis of Symmetry: $x = \dfrac{-b}{2a}$

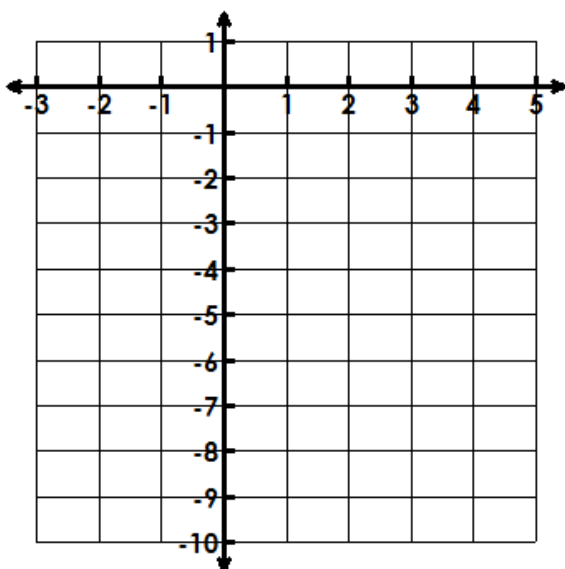Vertex: $\left(\dfrac{-b}{2a}, f\left(\dfrac{-b}{2a}\right)\right)$

Plug your axis of symmetry in to the function to find the y-value

Steps to Graphing in STANDARD form:

1. Identify a, b, and c.
2. Find the axis of symmetry. $x = \dfrac{-b}{2a}$ Graph this lightly as a dashed vertical line.
3. Table, Edit Function, start = A.O.S. This is your vertex. Plot it.
4. Scroll up and down to get other ordered pairs.
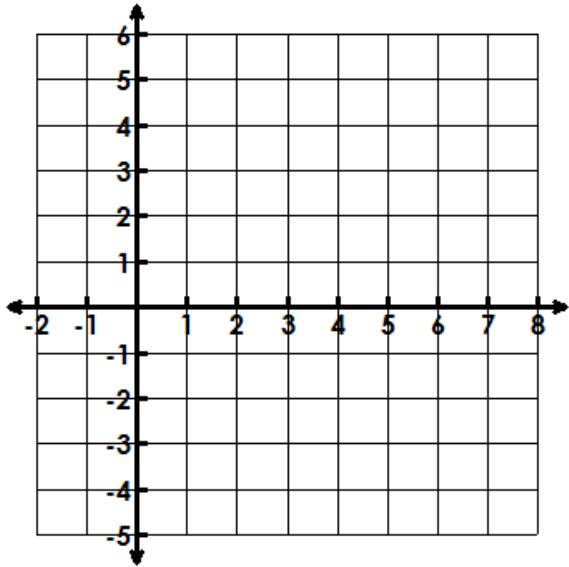5. Connect in a u-shape with arrows at each end.
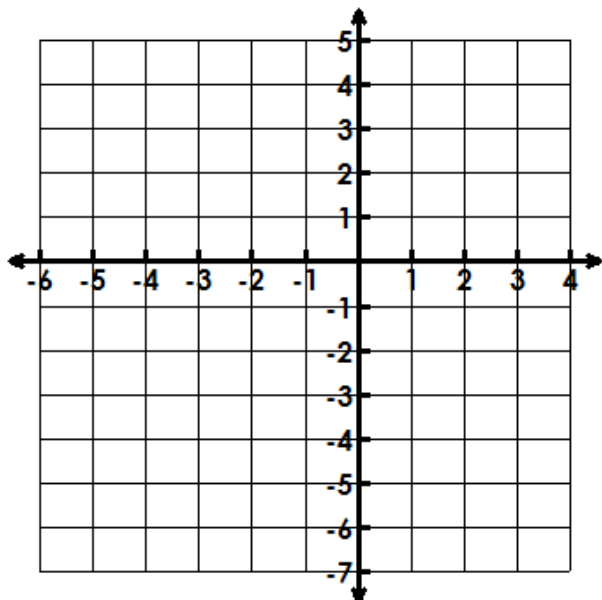
Graph.

1. $f(x) = -x^2 + 2x - 1$

Characteristics	
A.O.S.	
Vertex:	
Domain:	
Range:	
x-intercept(s):	
y-intercept:	
Interval of Increase:	
Interval of Decrease:	
End Behavior:	$As\ x \to -\infty, f(x) \to \_\_\_\_$ $As\ x \to \infty, f(x) \to \_\_\_\_$

2. $f(x) = x^2 - 6x + 5$

Characteristics	
A.O.S.	
Vertex:	
Domain:	
Range:	
Zeros:	
y-intercept:	
Interval of Increase:	
Interval of Decrease:	
End Behavior:	As $x \to -\infty, f(x) \to$ _____ As $x \to \infty, f(x) \to$ _____

3. $f(x) = -x^2 - 2x + 3$

Characteristics	
A.O.S.	
Vertex:	
Domain:	
Range:	
Roots:	
y-intercept:	
Interval of Increase:	
Interval of Decrease:	
End Behavior:	As $x \to -\infty, f(x) \to$ _____ As $x \to \infty, f(x) \to$ _____