

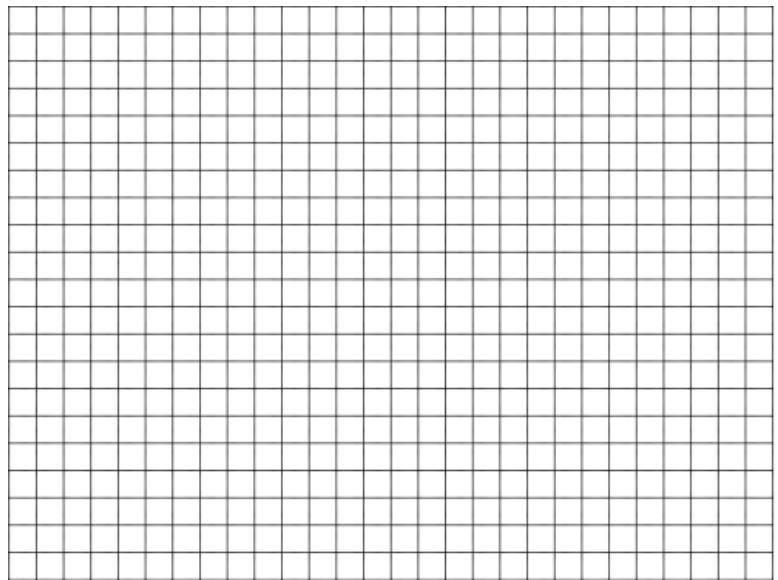
Lesson 2.1 – Quadratic Functions

Analyzing Quadratic Functions:

Standard Form of a Quadratic Function:

Vertex Form of a Quadratic Function:

(The “vertex form” is the form a quadratic equation takes after completing the square.)



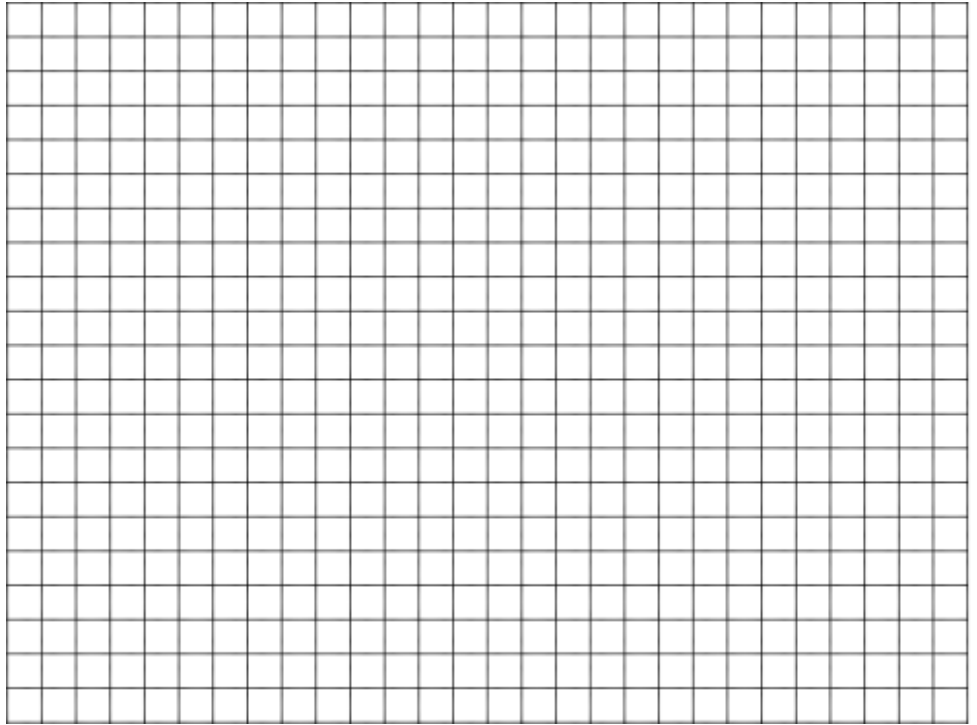
I. Graphing Quadratic Functions

For each function below, complete the square, identify the vertex, axis of symmetry & x-intercept(s). Sketch a graph for the first two.

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



2. $f(x) = 2x^2 - 12x + 10$



3. $f(x) = -4x^2 + 24x - 41$

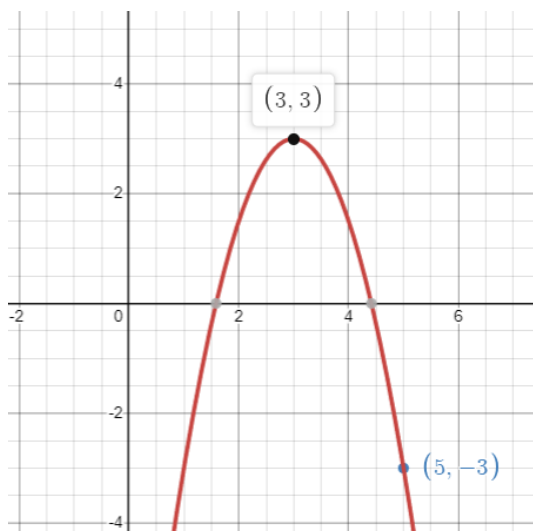
4. $f(x) = 2x^2 - x - 1$

II. Finding the Leading Coefficient 'a'

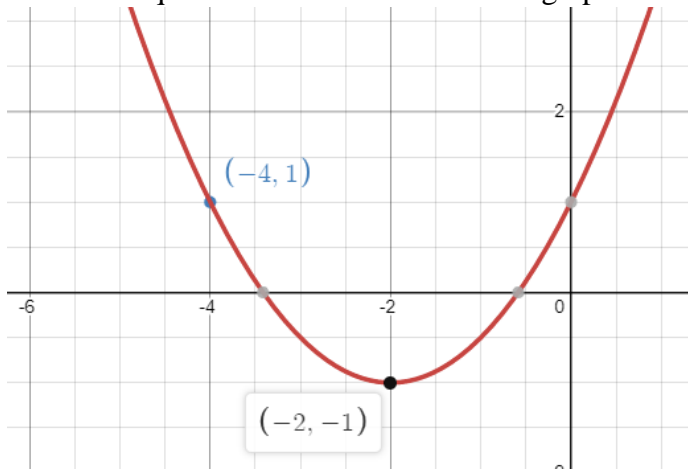
5. Find the quadratic equation whose vertex is $(4, -1)$ and passes through the point $(2, -5)$.

6. Find the equation of a parabola that has the vertex $(2, 3)$ and passes through the point $(0, 2)$.

7. Write the equation of the function for the graph below.



8. Write the equation of the function for the graph below.



9. Rewrite a general quadratic equation $ax^2 + bx + c = 0$ in vertex form. What do you notice about the axis of symmetry for a general quadratic equation?