

9.2 Quadratic Functions

The **BIG** idea...

In the quadratic function $y = ax^2 + bx + c$, the value of b affects the position of the axis of symmetry.

$$\text{axis of symmetry: } x = \frac{-b}{2a}$$

$$\text{vertex: } \left(\frac{-b}{2a}, f\left(\frac{-b}{2a}\right) \right)$$

Find the axis of symmetry and the vertex.

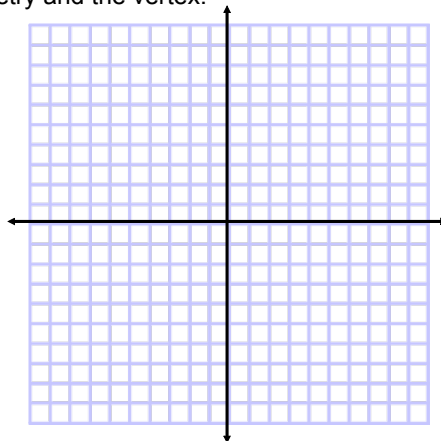
$$1) y = 3x^2 - 6x + 5$$

$$2) y = 4x^2 - 7$$

$$3) f(x) = \frac{1}{2}x^2 + 6x - 3$$

Graph. Label the axis of symmetry and the vertex.

$$4) f(x) = -2x^2 + 8x + 9$$



$$5) y = 4x^2 - 8x + 5$$

Graph. Label the axis of symmetry and the vertex.

$$6) f(x) = \frac{1}{4}x^2 - 6$$

