



# Algebra I

## 4<sup>th</sup> Grading Period (2 weeks)

### Power Objective:

- Evaluate quadratic functions. (P.O. #7)

### Academic Vocabulary:

- quadratic
- intercepts
- vertex
- minima
- maxima
- axis of symmetry
- end behavior
- derive
- discriminant
- domain
- range
- completing the square
- root
- zero

## Quadratic Functions and Equations

### Enduring Understandings:

- Quadratic equations are important because they can be used to describe real-world situation involving gravity, area, and volume. They can be used for situations involving minimums and maximums.
- They can solve quadratic equations by graphing, factoring, using the quadratic formula, using square roots, and using technology.
- Parabolas help visualize the concept of there being two possible solutions to a given situation.
- Quadratic equations have similar attributes to other functions such as linear and exponential, but they also have several key differences.
- Quadratic equations will be used to describe other shapes, including circles that are a critical part to the everyday world.

### Essential Questions:

- What real-world situations can be modeled using quadratic equations to make predictions?
- How do I know which process to use to solve a quadratic equation? Why would I use each method of process?
- Why do parabolic graphs help me understand the significance of two solutions to quadratic equations?
- How are quadratic equations similar and different to linear, exponential, and other functions?

