

Instructional Flow — Unit 4 — Quadratic Functions

Section 3.12	<ul style="list-style-type: none">• analysis of functions of the form $y = ax^2$• interpretation of coordinates of points on the graph of $y = ax^2$ in context• solutions to equations of the form $ax^2 = c$ graphically and algebraically
IG: Simplifying Radicals (may be completed during Section 3.20)	<ul style="list-style-type: none">• simple whole numbers and fractions with radicals in the denominator• the product and quotient properties of radicals
IG: Translations of Quadratic Functions in Vertex Form	<ul style="list-style-type: none">• analysis of the parent quadratic function $y = x^2$• investigations of transformations of quadratic function in vertex form, including dilations, reflections, and translations represented numerically, algebraically, and graphically• analysis of patterns of change in data and finite differences in quadratic functions
Section 3.13	<ul style="list-style-type: none">• investigations of transformations of quadratic function in standard form, including dilations, reflections, and translations represented numerically, algebraically, and graphically• analysis of patterns of change in data and finite differences in quadratic functions
IG: Relationships Between Vertex Form and Standard Form of a Quadratic Function	<ul style="list-style-type: none">• investigations of quadratic functions written in vertex form and standard form algebraically and graphically
Section 3.14	<ul style="list-style-type: none">• exploration of properties of quadratic functions, including vertex, axis of symmetry, domain, range, and intercepts• interpretation of properties in context
IG: Applications of Quadratic Functions: Multiplying Linear Factors	<ul style="list-style-type: none">• application of quadratic functions to real-world contexts that are derived by multiplying linear factors represented numerically, algebraically, and graphically
Section 3.15	<ul style="list-style-type: none">• solutions to quadratic equations numerically and graphically
Section 3.16	<ul style="list-style-type: none">• factoring quadratic expressions by removing the greatest common factor• factoring of quadratic expressions, including perfect square trinomials and binomials that are the difference of two squares• solutions to quadratic equations algebraically using factoring and zero-product principle
Section 3.18	<ul style="list-style-type: none">• solutions of quadratic equations algebraically using the quadratic formula• analysis of graphs of quadratic functions in context
Section 3.19	<ul style="list-style-type: none">• quadratic regression models• analysis of quadratic regression models
Section 3.20	<ul style="list-style-type: none">• investigations of square root function as inverse of quadratic function numerically, algebraically, and graphically• properties of square root functions