Tennessee Tutorials are designed specifically for the Tennessee Academic Standards to prepare students for the Tennessee Comprehensive Assessment Program (TCAP) and the TNReady assessments.

Math Tutorials offer targeted instruction, practice and review designed to develop computational fluency, deepen conceptual understanding, and apply mathematical practices. They automatically identify and address learning gaps down to elementary-level content, using adaptive remediation to bring students to grade-level no matter where they start. Students engage with the content in an interactive, feedback-rich environment as they progress through standards-aligned modules. By constantly honing the ability to apply their knowledge in abstract and real world scenarios, students build the depth of knowledge and higher order skills required to demonstrate their mastery when put to the test.

In each module, the Learn It and Try It make complex ideas accessible to students through focused content, modeled logic and process, multi-modal representations, and personalized feedback as students reason through increasingly challenging problems. The Review It offers a high impact summary of key concepts and relates those concepts to students' lives. The Test It assesses students' mastery of the module's concepts, providing granular performance data to students and teachers after each attempt. To help students focus on the content most relevant to them, unit-level pretests and posttests can quickly identify where students are strong and where they're still learning.

Unit 1: Expressions and Equations 1

- **FORMULATING AND SIMPLIFYING ALGEBRAIC EXPRESSIONS**
  - M2.A.SSE.A.1b: Interpret expressions that represent a quantity in terms of its context. Interpret complicated expressions by viewing one or more of their parts as a single entity.
  - M2.A.SSE.A.1a: Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.
- **AXIOMS OF EQUALITY**
  - M2.A.REI.A.1: Understand solving equations as a process of reasoning and explain the reasoning. Construct a viable argument to justify a solution method.

Unit 2: Expressions and Equations 2

- **LITERAL EQUATIONS**
  - M2.A.CED.A.3: Rearrange formulas to isolate a quantity of interest using algebraic reasoning.
- **MONITORING PRECISION AND ACCURACY**
  - M2.N.Q.A.1c: Use units as a way to understand real-world problems. Define and justify appropriate quantities within a context for the purpose of modeling.

- M2.N.Q.A.1b: Use units as a way to understand real-world problems. Use appropriate quantities in formulas, converting units as necessary.
- M2.N.Q.A.1a: Use units as a way to understand real-world problems. Choose and interpret the scale and the origin in graphs and data displays.
- M2.N.Q.A.1d: Use units as a way to understand real-world problems. Choose an appropriate level of accuracy when reporting quantities.

- **SOLVING EQUATIONS USING ROOTS**
  - M2.A.REI.B.2a: Solve quadratic equations and inequalities in one variable. Solve quadratic equations by inspection (e.g., for = 49), taking square roots, knowing and applying the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when a quadratic equation has non-real solutions.

Unit 3: Functions

- **FUNCTIONS AND RELATIONS**
  - M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
  - M2.F.IF.A.1b: Use function notation. Interpret statements that use function notation in terms of a context.
  - M2.F.IF.B.4: Relate the domain of a function to its graph and, where applicable, to the context of the function it models.
  - M2.F.IF.C.6: Graph functions expressed algebraically and show key features of the graph by hand and using technology.
- **DOMAIN AND RANGE**
  - M2.F.IF.A.1b: Use function notation. Interpret statements that use function notation in terms of a context.
  - M2.F.IF.B.4: Relate the domain of a function to its graph and, where applicable, to the context of the function it models.
- **EVALUATING FUNCTIONS**
  - M2.F.IF.A.1a: Use function notation. Use function notation to evaluate functions for inputs in their domains, including functions of two variables.
- **MULTIPLE REPRESENTATIONS OF FUNCTIONS**
  - M2.F.IF.A.1b: Use function notation. Interpret statements that use function notation in terms of a context.
  - M2.F.IF.C.8a: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of two different functions. Functions may be of different types and/or represented in different ways.

- M2.F.IF.B.5: Calculate and interpret the average rate of change of a function (presented algebraically or as a table) over a specified interval. Estimate and interpret the rate of change from a graph.
- M2.F.IF.C.8b: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of the same function on two different intervals or represented in two different ways.

Unit 4: Transformations on the Coordinate Plane

- **TRANSFORMATIONS ON THE COORDINATE PLANE**
  - M2.G.CO.B.5: Given two figures, use the definition of congruence in terms of rigid motions to determine informally if they are congruent.
  - M2.G.CO.B.6: Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.
  - M2.G.CO.A.1: Describe transformations as functions that take points in the plane (pre-image) as inputs and give other points (image) as outputs. Compare transformations that preserve distance and angle measure to those that do not, by hand for basic transformations and using technology for more complex cases.
  - M2.G.CO.A.4: Given a geometric figure, draw the image of the figure after a sequence of one or more rigid motions, by hand and using technology. Identify a sequence of rigid motions that will carry a given figure onto another.
  - M2.G.CO.A.3: Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.
- **DILATIONS, TRANSLATIONS, ROTATIONS, AND REFLECTIONS**
  - M2.G.CO.B.5: Given two figures, use the definition of congruence in terms of rigid motions to determine informally if they are congruent.
  - M2.G.CO.A.1: Describe transformations as functions that take points in the plane (pre-image) as inputs and give other points (image) as outputs. Compare transformations that preserve distance and angle measure to those that do not, by hand for basic transformations and using technology for more complex cases.
  - M2.G.CO.A.3: Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.

Unit 5: Congruence and Similarity of Triangles

- **TRIANGLES AND CONGRUENCE TRANSFORMATIONS**
  - M2.G.CO.B.5: Given two figures, use the definition of congruence in terms of rigid motions to determine informally if they are congruent.
  - M2.G.CO.B.6: Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

- M2.G.CO.A.1: Describe transformations as functions that take points in the plane (pre-image) as inputs and give other points (image) as outputs. Compare transformations that preserve distance and angle measure to those that do not, by hand for basic transformations and using technology for more complex cases.
- M2.G.CO.A.4: Given a geometric figure, draw the image of the figure after a sequence of one or more rigid motions, by hand and using technology. Identify a sequence of rigid motions that will carry a given figure onto another.
- M2.G.CO.B.7: Explain how the criteria for triangle congruence (ASA, SAS, AAS, SSS, and HL) follow from the definition of congruence in terms of rigid motions.
- M2.G.SRT.B.3: Use congruence and similarity criteria for triangles to solve problems and to justify relationships in geometric figures.

- **TRIANGLES AND SIMILARITY TRANSFORMATIONS**
  - M2.G.CO.A.1: Describe transformations as functions that take points in the plane (pre-image) as inputs and give other points (image) as outputs. Compare transformations that preserve distance and angle measure to those that do not, by hand for basic transformations and using technology for more complex cases.
  - M2.G.SRT.B.3: Use congruence and similarity criteria for triangles to solve problems and to justify relationships in geometric figures.
  - M2.G.SRT.A.1: Use properties of dilations given by a center and a scale factor to solve problems and to justify relationships in geometric figures.
  - M2.G.SRT.A.2: Define similarity in terms of transformations. Use transformations to determine whether two figures are similar.

Unit 6: Congruence and Similarity of Polygons

- **CONGRUENCE OF OTHER POLYGONS**
  - M2.G.CO.B.5: Given two figures, use the definition of congruence in terms of rigid motions to determine informally if they are congruent.
  - M2.G.CO.A.2: Given a rectangle, parallelogram, trapezoid, or regular polygon, determine the transformations that carry the shape onto itself and describe them in terms of the symmetry of the figure.
- **SIMILARITY OF OTHER POLYGONS**
  - M2.G.SRT.A.1: Use properties of dilations given by a center and a scale factor to solve problems and to justify relationships in geometric figures.
  - M2.G.SRT.A.2: Define similarity in terms of transformations. Use transformations to determine whether two figures are similar.

Unit 7: Triangles

- **TRIANGLE ANGLE THEOREMS**

- M2.G.CO.C.8: Use definitions and theorems about triangles to solve problems and to justify relationships in geometric figures.

- **TRIANGLE BISECTORS**
  - M2.G.CO.C.8: Use definitions and theorems about triangles to solve problems and to justify relationships in geometric figures.
- **MEDIANS AND ALTITUDES OF TRIANGLES**
  - M2.G.CO.C.8: Use definitions and theorems about triangles to solve problems and to justify relationships in geometric figures.

Unit 8: Quadrilaterals

- **PARALLELOGRAMS AND RECTANGLES**
  - M2.G.CO.C.9: Use definitions and theorems about parallelograms to solve problems and to justify relationships in geometric figures.
- **SQUARES AND RHOMBI**
  - M2.G.CO.C.9: Use definitions and theorems about parallelograms to solve problems and to justify relationships in geometric figures.

Unit 9: Exponential Functions, Equations, and Inequalities

- **LAWS OF EXPONENTS**
  - M2.N.RN.A.1c: Extend the properties of integer exponents to rational exponents. Rewrite expressions involving radicals and rational exponents using the properties of exponents.
  - M2.A.SSE.A.1b: Interpret expressions that represent a quantity in terms of its context. Interpret complicated expressions by viewing one or more of their parts as a single entity.
  - M2.A.SSE.A.1a: Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.
  - M2.N.RN.A.1a: Extend the properties of integer exponents to rational exponents. Develop the meaning of rational exponents by applying the properties of integer exponents.
  - M2.N.RN.A.1b: Extend the properties of integer exponents to rational exponents. Explain why / can be written as the root of .
- **EXPONENTIAL FUNCTIONS**
  - M2.F.IF.C.7b: Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Know and use the properties of exponents to interpret expressions for exponential functions in terms of a real-world context.
  - M2.F.IF.A.1b: Use function notation. Interpret statements that use function notation in terms of a context.
  - M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.

- M2.F.IF.B.4: Relate the domain of a function to its graph and, where applicable, to the context of the function it models.
- M2.F.IF.C.6: Graph functions expressed algebraically and show key features of the graph by hand and using technology.
- M2.A.REI.A.1: Understand solving equations as a process of reasoning and explain the reasoning. Construct a viable argument to justify a solution method.
- M2.N.Q.A.1c: Use units as a way to understand real-world problems. Define and justify appropriate quantities within a context for the purpose of modeling.
- M2.F.IF.C.8a: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of two different functions. Functions may be of different types and/or represented in different ways.
- M2.A.CED.A.1: Create equations and inequalities in one variable and use them to solve problems in a real-world context.
- M2.F.IF.C.8b: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of the same function on two different intervals or represented in two different ways.
- M2.N.Q.A.1b: Use units as a way to understand real-world problems. Use appropriate quantities in formulas, converting units as necessary.

- **EXPONENTIAL GROWTH AND DECAY**
  - M2.F.IF.A.1b: Use function notation. Interpret statements that use function notation in terms of a context.
  - M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
  - M2.F.IF.C.7b: Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Know and use the properties of exponents to interpret expressions for exponential functions in terms of a real-world context.
  - M2.F.IF.C.8a: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of two different functions. Functions may be of different types and/or represented in different ways.
  - M2.N.Q.A.1b: Use units as a way to understand real-world problems. Use appropriate quantities in formulas, converting units as necessary.
  - M2.N.Q.A.1c: Use units as a way to understand real-world problems. Define and justify appropriate quantities within a context for the purpose of modeling.
  - M2.A.CED.A.1: Create equations and inequalities in one variable and use them to solve problems in a real-world context.
- **SOLVING EXPONENTIAL INEQUALITIES**

- M2.A.CED.A.2: Create equations and inequalities in two variables to represent relationships between quantities and use them to solve problems in a real-world context. Graph equations with two variables on coordinate axes with labels and scales, and use the graphs to make predictions.
- M2.N.Q.A.1c: Use units as a way to understand real-world problems. Define and justify appropriate quantities within a context for the purpose of modeling.
- M2.N.Q.A.1b: Use units as a way to understand real-world problems. Use appropriate quantities in formulas, converting units as necessary.
- M2.A.CED.A.1: Create equations and inequalities in one variable and use them to solve problems in a real-world context.

Unit 10: Polynomials

- **ADDITION AND SUBTRACTION OF POLYNOMIALS**
  - M2.A.APR.A.1: Add, subtract, and multiply polynomials. Use these operations to demonstrate that polynomials form a closed system that adhere to the same properties of operations as the integers.
- **MULTIPLICATION OF POLYNOMIALS**
  - M2.A.APR.A.1: Add, subtract, and multiply polynomials. Use these operations to demonstrate that polynomials form a closed system that adhere to the same properties of operations as the integers.
- **ARITHMETIC OPERATIONS ON FUNCTIONS**
  - M2.F.BF.A.1a: Build a function that describes a relationship between two quantities. Combine standard function types using arithmetic operations.

Unit 11: Factoring

- **FACTORING QUADRATIC TRINOMIALS**
  - M2.A.SSE.A.1b: Interpret expressions that represent a quantity in terms of its context. Interpret complicated expressions by viewing one or more of their parts as a single entity.
  - M2.A.SSE.A.1a: Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.
  - M2.A.REI.B.2a: Solve quadratic equations and inequalities in one variable. Solve quadratic equations by inspection (e.g., for = 49), taking square roots, knowing and applying the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when a quadratic equation has non-real solutions.
- **FACTORING SPECIAL CASES**
  - M2.A.SSE.A.1b: Interpret expressions that represent a quantity in terms of its context. Interpret complicated expressions by viewing one or more of their parts as a single entity.
  - M2.A.SSE.A.1a: Interpret expressions that represent a quantity in terms of its context. Interpret parts of an expression, such as terms, factors, and coefficients.
  - M2.A.REI.B.2a: Solve quadratic equations and inequalities in one variable. Solve quadratic equations by inspection (e.g., for = 49), taking square roots, knowing and applying the quadratic formula, and

factoring, as appropriate to the initial form of the equation. Recognize when a quadratic equation has non-real solutions.

- **FACTOR THEOREM AND REMAINDER THEOREM**
  - M2.A.APR.B.2: Know and apply the Factor Theorem: For a polynomial () and a number , () = 0 if and only if ( ) is a factor of ().

Unit 12: Representations of Quadratic Functions

- **QUADRATIC FUNCTIONS**
  - M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
  - M2.F.IF.C.6: Graph functions expressed algebraically and show key features of the graph by hand and using technology.
  - M2.A.CED.A.2: Create equations and inequalities in two variables to represent relationships between quantities and use them to solve problems in a real-world context. Graph equations with two variables on coordinate axes with labels and scales, and use the graphs to make predictions.
- **ANALYZING GRAPHS OF QUADRATIC FUNCTIONS**
  - M2.F.IF.C.6: Graph functions expressed algebraically and show key features of the graph by hand and using technology.
  - M2.F.IF.B.4: Relate the domain of a function to its graph and, where applicable, to the context of the function it models.
  - M2.F.IF.C.8a: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of two different functions. Functions may be of different types and/or represented in different ways.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
  - M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
  - M2.F.IF.C.8b: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of the same function on two different intervals or represented in two different ways.
- **REPRESENTATIONS OF QUADRATIC FUNCTIONS**
  - M2.F.IF.A.1b: Use function notation. Interpret statements that use function notation in terms of a context.

- M2.N.Q.A.1c: Use units as a way to understand real-world problems. Define and justify appropriate quantities within a context for the purpose of modeling.
- M2.F.IF.C.7a: Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Rewrite quadratic functions to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a real-world context.
- M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
- M2.F.IF.C.6: Graph functions expressed algebraically and show key features of the graph by hand and using technology.
- M2.N.Q.A.1b: Use units as a way to understand real-world problems. Use appropriate quantities in formulas, converting units as necessary.
- M2.A.CED.A.2: Create equations and inequalities in two variables to represent relationships between quantities and use them to solve problems in a real-world context. Graph equations with two variables on coordinate axes with labels and scales, and use the graphs to make predictions.

Unit 13: Solving Quadratic Equations and Inequalities 1

- **SOLVING QUADRATIC EQUATIONS BY FACTORING**
  - M2.A.REI.B.2a: Solve quadratic equations and inequalities in one variable. Solve quadratic equations by inspection (e.g., for = 49), taking square roots, knowing and applying the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when a quadratic equation has non-real solutions.
  - M2.A.REI.A.1: Understand solving equations as a process of reasoning and explain the reasoning. Construct a viable argument to justify a solution method.
  - M2.F.IF.C.7a: Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. Rewrite quadratic functions to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a real-world context.
  - M2.A.CED.A.1: Create equations and inequalities in one variable and use them to solve problems in a real-world context.
  - M2.A.REI.B.2a: Solve quadratic equations and inequalities in one variable. Solve quadratic equations by inspection (e.g., for = 49), taking square roots, knowing and applying the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when a quadratic equation has non-real solutions.
  - M2.N.Q.A.1c: Use units as a way to understand real-world problems. Define and justify appropriate quantities within a context for the purpose of modeling.
  - M2.A.CED.A.2: Create equations and inequalities in two variables to represent relationships between quantities and use them to solve problems in a real-world context. Graph equations with two variables on coordinate axes with labels and scales, and use the graphs to make predictions.

- M2.N.Q.A.1b: Use units as a way to understand real-world problems. Use appropriate quantities in formulas, converting units as necessary.

- **COMPLEX NUMBERS**
  - M2.A.REI.B.2a: Solve quadratic equations and inequalities in one variable. Solve quadratic equations by inspection (e.g., for = 49), taking square roots, knowing and applying the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when a quadratic equation has non-real solutions.
- **QUADRATIC FORMULA**
  - M2.A.REI.B.2a: Solve quadratic equations and inequalities in one variable. Solve quadratic equations by inspection (e.g., for = 49), taking square roots, knowing and applying the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when a quadratic equation has non-real solutions.
  - M2.A.CED.A.1: Create equations and inequalities in one variable and use them to solve problems in a real-world context.
  - M2.A.CED.A.2: Create equations and inequalities in two variables to represent relationships between quantities and use them to solve problems in a real-world context. Graph equations with two variables on coordinate axes with labels and scales, and use the graphs to make predictions.
  - M2.A.REI.B.2a: Solve quadratic equations and inequalities in one variable. Solve quadratic equations by inspection (e.g., for = 49), taking square roots, knowing and applying the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when a quadratic equation has non-real solutions.
  - M2.A.REI.B.2a: Solve quadratic equations and inequalities in one variable. Solve quadratic equations by inspection (e.g., for = 49), taking square roots, knowing and applying the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when a quadratic equation has non-real solutions.
  - M2.F.IF.A.1a: Use function notation. Use function notation to evaluate functions for inputs in their domains, including functions of two variables.

Unit 14: Solving Quadratic Equations and Inequalities 2

- **COMPLEX NUMBERS AND QUADRATIC FUNCTIONS**
  - M2.A.REI.B.2a: Solve quadratic equations and inequalities in one variable. Solve quadratic equations by inspection (e.g., for = 49), taking square roots, knowing and applying the quadratic formula, and factoring, as appropriate to the initial form of the equation. Recognize when a quadratic equation has non-real solutions.
- **SOLVING QUADRATIC INEQUALITIES**
  - M2.A.CED.A.2: Create equations and inequalities in two variables to represent relationships between quantities and use them to solve problems in a real-world context. Graph equations with two variables on coordinate axes with labels and scales, and use the graphs to make predictions.

- M2.A.CED.A.1: Create equations and inequalities in one variable and use them to solve problems in a real-world context.
- M2.A.REI.B.2b: Solve quadratic equations and inequalities in one variable. Solve quadratic inequalities using the graph of the related quadratic equation.

Unit 15: Nonlinear Equations and Functions

- **ABSOLUTE VALUE FUNCTIONS**
  - M2.F.IF.B.4: Relate the domain of a function to its graph and, where applicable, to the context of the function it models.
  - M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
  - M2.A.REI.A.1: Understand solving equations as a process of reasoning and explain the reasoning. Construct a viable argument to justify a solution method.
  - M2.F.IF.A.1b: Use function notation. Interpret statements that use function notation in terms of a context.
  - M2.F.IF.C.8a: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of two different functions. Functions may be of different types and/or represented in different ways.
  - M2.F.IF.C.6: Graph functions expressed algebraically and show key features of the graph by hand and using technology.
  - M2.F.IF.B.5: Calculate and interpret the average rate of change of a function (presented algebraically or as a table) over a specified interval. Estimate and interpret the rate of change from a graph.
  - M2.F.IF.C.8b: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of the same function on two different intervals or represented in two different ways.
- **ANALYZING GRAPHS OF SQUARE ROOT FUNCTIONS**
  - M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
  - M2.F.IF.C.8a: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of two different functions. Functions may be of different types and/or represented in different ways.
  - M2.F.IF.C.6: Graph functions expressed algebraically and show key features of the graph by hand and using technology.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.

- M2.F.IF.C.8b: Compare properties of functions represented algebraically, graphically, numerically in tables, or by verbal descriptions. Compare properties of the same function on two different intervals or represented in two different ways.
- M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
- M2.A.REI.A.1: Understand solving equations as a process of reasoning and explain the reasoning. Construct a viable argument to justify a solution method.
- M2.A.CED.A.2: Create equations and inequalities in two variables to represent relationships between quantities and use them to solve problems in a real-world context. Graph equations with two variables on coordinate axes with labels and scales, and use the graphs to make predictions.
- M2.A.REI.B.3: Solve radical equations in one variable and identify extraneous solutions when they exist.
- M2.F.IF.B.4: Relate the domain of a function to its graph and, where applicable, to the context of the function it models.

- **SOLVING SQUARE ROOT EQUATIONS**
  - M2.A.CED.A.1: Create equations and inequalities in one variable and use them to solve problems in a real-world context.
  - M2.A.REI.B.3: Solve radical equations in one variable and identify extraneous solutions when they exist.
  - M2.A.CED.A.2: Create equations and inequalities in two variables to represent relationships between quantities and use them to solve problems in a real-world context. Graph equations with two variables on coordinate axes with labels and scales, and use the graphs to make predictions.
  - M2.N.Q.A.1c: Use units as a way to understand real-world problems. Define and justify appropriate quantities within a context for the purpose of modeling.
  - M2.A.REI.A.1: Understand solving equations as a process of reasoning and explain the reasoning. Construct a viable argument to justify a solution method.
  - M2.N.Q.A.1b: Use units as a way to understand real-world problems. Use appropriate quantities in formulas, converting units as necessary.

Unit 16: Parent Functions and Transformations

- **PARENT FUNCTIONS**
  - M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.

- M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
- M2.F.IF.B.4: Relate the domain of a function to its graph and, where applicable, to the context of the function it models.
- M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
- M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.

- **TRANSFORMATIONS OF PARENT FUNCTIONS**
  - M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
  - M2.F.IF.C.6: Graph functions expressed algebraically and show key features of the graph by hand and using technology.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
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  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.

- **MULTIPLE TRANSFORMATIONS OF PARENT FUNCTIONS**
  - M2.F.IF.B.3: For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
  - M2.F.IF.C.6: Graph functions expressed algebraically and show key features of the graph by hand and using technology.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
  - M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.

- M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.
- M2.F.BF.B.2: Identify the effect on the graph of replacing () by () + , (), (), and (+) for specific values of (both positive and negative); find the value of given graphs.

Unit 17: Systems of Equations

- **SOLVING SYSTEMS OF LINEAR EQUATIONS: GRAPHING**
  - M2.A.REI.D.5: Explain why the -coordinates of the points where the graphs of the equations = () and = () intersect are the solutions of the equation () = (). Find approximate solutions by graphing the functions or making a table of values, using technology when appropriate.
- **SYSTEMS OF NONLINEAR EQUATIONS**
  - M2.A.REI.D.5: Explain why the -coordinates of the points where the graphs of the equations = () and = () intersect are the solutions of the equation () = (). Find approximate solutions by graphing the functions or making a table of values, using technology when appropriate.
  - M2.A.REI.D.5: Explain why the -coordinates of the points where the graphs of the equations = () and = () intersect are the solutions of the equation () = (). Find approximate solutions by graphing the functions or making a table of values, using technology when appropriate.
  - M2.A.REI.C.4: Solve a system consisting of a linear equation and a quadratic equation in two variables algebraically, graphically, and using technology.
  - M2.A.REI.D.5: Explain why the -coordinates of the points where the graphs of the equations = () and = () intersect are the solutions of the equation () = (). Find approximate solutions by graphing the functions or making a table of values, using technology when appropriate.
  - M2.A.REI.D.5: Explain why the -coordinates of the points where the graphs of the equations = () and = () intersect are the solutions of the equation () = (). Find approximate solutions by graphing the functions or making a table of values, using technology when appropriate.

Unit 18: Scatterplots and Regression

- **SCATTERPLOTS**
  - M2.S.ID.A.1: Represent data from two quantitative variables on a scatter plot, and describe how the variables are related. Fit a function to the data; use functions fitted to data to solve problems in the context of the data.
- **SCATTERPLOTS AND MODELING**
  - M2.S.ID.A.1: Represent data from two quantitative variables on a scatter plot, and describe how the variables are related. Fit a function to the data; use functions fitted to data to solve problems in the context of the data.