South Carolina Tutorials are designed specifically for the South Carolina College and Career Readiness Standards and the South Carolina Academic Standards to prepare students for the South Carolina End-of-Course Examination Program (EOCEP), ACT Aspire, and the South Carolina Palmetto Assessment of State Standards (SCPASS).

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: Real Number System

- **LAWS OF EXPONENTS**
  - FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)
  - FA.AREI.1: Reasoning with Equations and Inequalities Understand and justify that the steps taken when solving simple equations in one variable create new equations that have the same solution as the original.
  - FA.NRNS.1: Real Number System Rewrite expressions involving simple radicals and rational exponents in different forms.
  - FA.NRNS.2: Real Number System Use the definition of the meaning of rational exponents to translate between rational exponent and radical forms.
- **OPERATIONS ON RATIONAL AND IRRATIONAL NUMBERS**
  - FA.NRNS.3: Real Number System Explain why the sum or product of rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero

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rational number and an irrational number is irrational.

- **MONITORING PRECISION AND ACCURACY**
  - FA.NQ.2: Quantities Label and define appropriate quantities in descriptive modeling contexts.
  - FA.NQ.3: Quantities Choose a level of accuracy appropriate to limitations on measurement when reporting quantities in context.
  - FA.NQ.1: Quantities Use units of measurement to guide the solution of multi-step tasks. Choose and interpret appropriate labels, units, and scales when constructing graphs and other data displays.

Unit 2: Equations and Inequalities

- **ONE-STEP EQUATIONS AND INEQUALITIES**
  - FA.ACE.1: Creating Equations Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable. (Limit to linear; quadratic; exponential with integer exponents.)
  - FA.AREI.1: Reasoning with Equations and Inequalities Understand and justify that the steps taken when solving simple equations in one variable create new equations that have the same solution as the original.
  - FA.AREI.3: Reasoning with Equations and Inequalities Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
- **MULTI-STEP EQUATIONS AND INEQUALITIES**
  - FA.ACE.1: Creating Equations Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable. (Limit to linear; quadratic; exponential with integer exponents.)
  - FA.AREI.1: Reasoning with Equations and Inequalities Understand and justify that the steps taken when solving simple equations in one variable create new equations that have the same solution as the original.
  - FA.AREI.3: Reasoning with Equations and Inequalities Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
- **AXIOMS OF EQUALITY**
  - FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)
  - FA.AREI.1: Reasoning with Equations and Inequalities Understand and justify that the steps taken when solving simple equations in one variable create new equations that have the same solution as the original.
- **LITERAL EQUATIONS**

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- FA.AREI.3: Reasoning with Equations and Inequalities Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
- FA.ACE.4: Creating Equations Solve literal equations and formulas for a specified variable including equations and formulas that arise in a variety of disciplines.

Unit 3: Expressions and Equations

- **FORMULATING AND SIMPLIFYING ALGEBRAIC EXPRESSIONS**
  - FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)
- **FORMULATING AND SOLVING EQUATIONS FROM WORD PROBLEMS**
  - FA.ACE.1: Creating Equations Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable. (Limit to linear; quadratic; exponential with integer exponents.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
  - FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)
- **FORMULATING AND SOLVING INEQUALITIES FROM WORD PROBLEMS**
  - FA.ACE.1: Creating Equations Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable. (Limit to linear; quadratic; exponential with integer exponents.)
  - FA.AREI.3: Reasoning with Equations and Inequalities Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
  - FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)
- **POLYNOMIAL BASICS**
  - FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)

Unit 4: Functions

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- **FUNCTIONS AND RELATIONS**
  - FA.FIF.2: Interpreting Functions Evaluate functions and interpret the meaning of expressions involving function notation from a mathematical perspective and in terms of the context when the function describes a real-world situation.
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
  - FA.FIF.1.b: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Represent a function using function notation and explain that f(x) denotes the output of function f that corresponds to the input x.
  - FA.FIF.1.a: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.
  - FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
- **DOMAIN AND RANGE**
  - FA.FIF.1.a: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.
  - FA.FIF.5: Interpreting Functions Relate the domain and range of a function to its graph and, where applicable, to the quantitative relationship it describes. (Limit to linear; quadratic; exponential.)
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
  - FA.FIF.1.b: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Represent a function using function notation and explain that f(x)

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denotes the output of function f that corresponds to the input x.

- **EVALUATING FUNCTIONS**
  - FA.FIF.2: Interpreting Functions Evaluate functions and interpret the meaning of expressions involving function notation from a mathematical perspective and in terms of the context when the function describes a real-world situation.
  - FA.FIF.1.b: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Represent a function using function notation and explain that f(x) denotes the output of function f that corresponds to the input x.
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
  - FA.FIF.1.a: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.

Unit 5: Graphs of Linear Equations and Inequalities

- **SLOPE**
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
  - FA.FIF.1.b: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Represent a function using function notation and explain that f(x) denotes the output of function f that corresponds to the input x.
- **GRAPHING AND ANALYZING LINEAR FUNCTIONS**
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.1.b: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Represent a function using function notation and explain that f(x) denotes the output of function f that corresponds to the input x.

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- FA.FIF.5: Interpreting Functions Relate the domain and range of a function to its graph and, where applicable, to the quantitative relationship it describes. (Limit to linear; quadratic; exponential.)
- FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
- FA.FIF.1.a: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.
- FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
- FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)

- **GRAPHING AND MANIPULATING Y = MX + B**
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
  - FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)

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- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
- FA.FLQE.5: Linear, Quadratic, and Exponential Interpret the parameters in a linear or exponential function in terms of the context. (Limit to linear.)

- **GRAPHS OF LINEAR INEQUALITIES**
  - FA.AREI.12: Reasoning with Equations and Inequalities Graph the solutions to a linear inequality in two variables.
  - FA.AREI.3: Reasoning with Equations and Inequalities Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

Unit 6: Linear Equations

- **SLOPE-INTERCEPT FORM OF A LINEAR EQUATION**
  - FA.AREI.10: Reasoning with Equations and Inequalities Explain that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane.
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
- **POINT-SLOPE FORM OF A LINEAR EQUATION**

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- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
- FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
- FA.AREI.10: Reasoning with Equations and Inequalities Explain that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane.
- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
- FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)

Unit 7: Two-Variable Linear Systems

- **SOLVING SYSTEMS OF LINEAR EQUATIONS: GRAPHING**
  - FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)
  - FA.AREI.10: Reasoning with Equations and Inequalities Explain that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane.
  - FA.AREI.11: Reasoning with Equations and Inequalities Solve an equation of the form f(x) = g(x) graphically by identifying the x- coordinate(s) of the point(s) of intersection of the graphs of y = f(x) and y = g(x). (Limit to linear; quadratic; exponential.)
- **SOLVING SYSTEMS OF LINEAR EQUATIONS: SUBSTITUTION**
  - FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)

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- FA.AREI.10: Reasoning with Equations and Inequalities Explain that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane.
- FA.AREI.6.a: Reasoning with Equations and Inequalities Solve systems of linear equations algebraically and graphically focusing on pairs of linear equations in two variables. Solve systems of linear equations using the substitution method.

- **SOLVING SYSTEMS OF LINEAR EQUATIONS: ELIMINATION**
  - FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)
  - FA.AREI.6.b: Reasoning with Equations and Inequalities Solve systems of linear equations algebraically and graphically focusing on pairs of linear equations in two variables. Solve systems of linear equations using linear combination.
  - FA.AREI.5: Reasoning with Equations and Inequalities Justify that the solution to a system of linear equations is not changed when one of the equations is replaced by a linear combination of the other equation.

Unit 8: Linear Systems

- **SOLVING SYSTEMS OF LINEAR INEQUALITIES**
  - FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)
  - FA.AREI.12: Reasoning with Equations and Inequalities Graph the solutions to a linear inequality in two variables.
- **SOLVING THREE-VARIABLE SYSTEMS OF LINEAR EQUATIONS**
  - FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)
  - FA.AREI.5: Reasoning with Equations and Inequalities Justify that the solution to a system of linear equations is not changed when one of the equations is replaced by a linear combination of the other equation.

Unit 9: Exponential Functions, Equations, and Inequalities

- **EXPONENTIAL FUNCTIONS**
  - FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)
  - FA.FLQE.1.a: Linear, Quadratic, and Exponential Distinguish between situations that can be modeled with linear functions or exponential functions by recognizing situations in which one quantity changes at a constant rate per unit interval as opposed to those in which a quantity changes by a constant

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percent rate per unit interval. Prove that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.

- FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
- FA.FLQE.3: Linear, Quadratic, and Exponential Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or more generally as a polynomial function.
- FA.FIF.1.b: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Represent a function using function notation and explain that f(x) denotes the output of function f that corresponds to the input x.
- FA.FIF.5: Interpreting Functions Relate the domain and range of a function to its graph and, where applicable, to the quantitative relationship it describes. (Limit to linear; quadratic; exponential.)
- FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
- FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
- FA.FIF.1.a: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.
- FA.FLQE.5: Linear, Quadratic, and Exponential Interpret the parameters in a linear or exponential function in terms of the context. (Limit to linear.)
- FA.ACE.1: Creating Equations Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable. (Limit to linear; quadratic; exponential with integer exponents.)

- **EXPONENTIAL GROWTH AND DECAY**
  - FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)
  - FA.FLQE.1.a: Linear, Quadratic, and Exponential Distinguish between situations that can be modeled with linear functions or exponential functions by recognizing situations in which one quantity changes at a constant rate per unit interval as opposed to those in which a quantity changes by a constant

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percent rate per unit interval. Prove that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.

- FA.FLQE.5: Linear, Quadratic, and Exponential Interpret the parameters in a linear or exponential function in terms of the context. (Limit to linear.)
- FA.FLQE.3: Linear, Quadratic, and Exponential Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or more generally as a polynomial function.
- FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
- FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)

- **SOLVING EXPONENTIAL INEQUALITIES**
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
  - FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)

Unit 10: Graphs of Quadratic Functions

- **QUADRATIC FUNCTIONS**
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)

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- FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)
- FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)
- FA.FIF.8.a: Interpreting Functions Translate between different but equivalent forms of a function equation to reveal and explain different properties of the function. (Limit to linear; quadratic; exponential.) Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.

- **ANALYZING GRAPHS OF QUADRATIC FUNCTIONS**
  - FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
  - FA.FIF.5: Interpreting Functions Relate the domain and range of a function to its graph and, where applicable, to the quantitative relationship it describes. (Limit to linear; quadratic; exponential.)
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
  - FA.FIF.1.a: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)

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- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
- FA.FIF.1.b: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Represent a function using function notation and explain that f(x) denotes the output of function f that corresponds to the input x.
- FA.FIF.8.a: Interpreting Functions Translate between different but equivalent forms of a function equation to reveal and explain different properties of the function. (Limit to linear; quadratic; exponential.) Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.
- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)

- **REPRESENTATIONS OF QUADRATIC FUNCTIONS**
  - FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).

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- FA.FIF.8.a: Interpreting Functions Translate between different but equivalent forms of a function equation to reveal and explain different properties of the function. (Limit to linear; quadratic; exponential.) Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.
- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
- FA.ACE.1: Creating Equations Create and solve equations and inequalities in one variable that model real-world problems involving linear, quadratic, simple rational, and exponential relationships. Interpret the solutions and determine whether they are reasonable. (Limit to linear; quadratic; exponential with integer exponents.)
- FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)

Unit 11: Solving Quadratic Equations

- **SOLVING QUADRATIC EQUATIONS BY FACTORING**
  - FA.FIF.8.a: Interpreting Functions Translate between different but equivalent forms of a function equation to reveal and explain different properties of the function. (Limit to linear; quadratic; exponential.) Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
  - FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
- **COMPLETING THE SQUARE**

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- FA.FIF.8.a: Interpreting Functions Translate between different but equivalent forms of a function equation to reveal and explain different properties of the function. (Limit to linear; quadratic; exponential.) Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.
- FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
- FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
- FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)

- **QUADRATIC FORMULA**
  - FA.ASE.1: Structure and Expressions Interpret the meanings of coefficients, factors, terms, and expressions based on their real-world contexts. Interpret complicated expressions as being composed of simpler expressions. (Limit to linear; quadratic; exponential.)
  - FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)

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- FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).

Unit 12: Parent Functions and Transformations

- **LINEAR AND EXPONENTIAL PARENT FUNCTIONS**
  - FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
  - FA.FIF.5: Interpreting Functions Relate the domain and range of a function to its graph and, where applicable, to the quantitative relationship it describes. (Limit to linear; quadratic; exponential.)
  - FA.FIF.1.a: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.
  - FA.AREI.10: Reasoning with Equations and Inequalities Explain that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane.
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
- **QUADRATIC PARENT FUNCTION**
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.5: Interpreting Functions Relate the domain and range of a function to its graph and, where applicable, to the quantitative relationship it describes. (Limit to linear; quadratic; exponential.)

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- FA.FIF.1.a: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.

- **TRANSFORMATIONS OF THE LINEAR AND EXPONENTIAL PARENT FUNCTIONS**
  - FA.FBF.3: Building Functions Describe the effect of the transformations kf (x), f(x) + k, f(x + k), and combinations of such transformations on the graph of y = f (x) for any real number k. Find the value of k given the graphs and write the equation of a transformed parent function given its graph. (Limit to linear; quadratic; exponential with integer exponents; vertical shift and vertical stretch.)
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
- **TRANSFORMATIONS OF THE QUADRATIC PARENT FUNCTION**
  - FA.FBF.3: Building Functions Describe the effect of the transformations kf (x), f(x) + k, f(x + k), and combinations of such transformations on the graph of y = f (x) for any real number k. Find the value of k given the graphs and write the equation of a transformed parent function given its graph. (Limit to linear; quadratic; exponential with integer exponents; vertical shift and vertical stretch.)
  - FA.FIF.5: Interpreting Functions Relate the domain and range of a function to its graph and, where applicable, to the quantitative relationship it describes. (Limit to linear; quadratic; exponential.)
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
  - FA.FIF.1.a: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.

Unit 13: Comparing Functions

- **LINEAR VERSUS NONLINEAR FUNCTIONS**
  - FA.FLQE.1.a: Linear, Quadratic, and Exponential Distinguish between situations that can be modeled with linear functions or exponential functions by recognizing situations in which one quantity changes at a constant rate per unit interval as opposed to those in which a quantity changes by a constant percent rate per unit interval. Prove that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple

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cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)

- FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
- FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)

- **MULTIPLE REPRESENTATIONS OF FUNCTIONS**
  - FA.FIF.9: Interpreting Functions Compare properties of two functions given in different representations such as algebraic, graphical, tabular, or verbal. (Limit to linear; quadratic; exponential.)
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FIF.4: Interpreting Functions Interpret key features of a function that models the relationship between two quantities when given in graphical or tabular form. Sketch the graph of a function from a verbal description showing key features. Key features include intercepts; intervals where the function is increasing, decreasing, constant, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. (Limit to linear; quadratic; exponential.)
  - FA.ACE.2: Creating Equations Create equations in two or more variables to represent relationships between quantities. Graph the equations on coordinate axes using appropriate labels, units, and scales. (Limit to linear; quadratic; exponential with integer exponents; direct and indirect variation.)
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)
  - FA.FLQE.1.a: Linear, Quadratic, and Exponential Distinguish between situations that can be modeled with linear functions or exponential functions by recognizing situations in which one quantity changes at a constant rate per unit interval as opposed to those in which a quantity changes by a constant percent rate per unit interval. Prove that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.
  - FA.FIF.7: Interpreting Functions Graph functions from their symbolic representations. Indicate key features including intercepts; intervals where the function is increasing, decreasing, positive, or

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negative; relative maximums and minimums; symmetries; end behavior and periodicity. Graph simple cases by hand and use technology for complicated cases. (Limit to linear; quadratic; exponential only in the form y =a + k.)

Unit 14: Nonlinear Functions

- **ABSOLUTE VALUE FUNCTIONS**
  - FA.FIF.1.b: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Represent a function using function notation and explain that f(x) denotes the output of function f that corresponds to the input x.
  - FA.FIF.1.a: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range.
  - FA.FIF.1.c: Interpreting Functions Extend previous knowledge of a function to apply to general behavior and features of a function. Understand that the graph of a function labeled as f is the set of all ordered pairs (x,y) that satisfy the equation y = f(x).
  - FA.FBF.3: Building Functions Describe the effect of the transformations kf (x), f(x) + k, f(x + k), and combinations of such transformations on the graph of y = f (x) for any real number k. Find the value of k given the graphs and write the equation of a transformed parent function given its graph. (Limit to linear; quadratic; exponential with integer exponents; vertical shift and vertical stretch.)
- **SYSTEMS OF NONLINEAR EQUATIONS**
  - FA.AREI.11: Reasoning with Equations and Inequalities Solve an equation of the form f(x) = g(x) graphically by identifying the x- coordinate(s) of the point(s) of intersection of the graphs of y = f(x) and y = g(x). (Limit to linear; quadratic; exponential.)

Unit 15: Statistics

- **SCATTERPLOTS**
  - FA.SPID.6: Interpreting Data Using technology, create scatterplots and analyze those plots to compare the fit of linear, quadratic, or exponential models to a given data set. Select the appropriate model, fit a function to the data set, and use the function to solve problems in the context of the data.
  - FA.SPID.7: Interpreting Data Create a linear function to graphically model data from a real-world problem and interpret the meaning of the slope and intercept(s) in the context of the given problem.
- **SCATTERPLOTS AND MODELING**
  - FA.SPID.6: Interpreting Data Using technology, create scatterplots and analyze those plots to compare the fit of linear, quadratic, or exponential models to a given data set. Select the appropriate model, fit a function to the data set, and use the function to solve problems in the context of the data.
  - FA.SPID.8: Interpreting Data Using technology, compute and interpret the correlation coefficient of a linear fit.

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- FA.SPID.7: Interpreting Data Create a linear function to graphically model data from a real-world problem and interpret the meaning of the slope and intercept(s) in the context of the given problem.
- FA.FLQE.1.a: Linear, Quadratic, and Exponential Distinguish between situations that can be modeled with linear functions or exponential functions by recognizing situations in which one quantity changes at a constant rate per unit interval as opposed to those in which a quantity changes by a constant percent rate per unit interval. Prove that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.

- **ANALYZING STATISTICAL SAMPLES**
  - FA.SPMJ.1: Making Inferences and Justifying Conclusions Understand statistics and sampling distributions as a process for making inferences about population parameters based on a random sample from that population.
- **FREQUENCY TABLES**
  - FA.SPID.5: Interpreting Data Analyze bivariate categorical data using two-way tables and identify possible associations between the two categories using marginal, joint, and conditional frequencies.

Unit 16: Probability

- **ANALYZING DECISIONS IN PROBABILITY**
  - FA.SPMJ.2: Making Inferences and Justifying Conclusions Distinguish between experimental and theoretical probabilities. Collect data on a chance event and use the relative frequency to estimate the theoretical probability of that event. Determine whether a given probability model is consistent with experimental results.
  - FA.SPMD.5: Using Probability to Make Decisions Use probability to evaluate outcomes of decisions. Use probabilities to make fair decisions.
  - FA.SPMD.6: Using Probability to Make Decisions Analyze decisions and strategies using probability concepts.
  - FA.SPMD.4: Using Probability to Make Decisions Use probability to evaluate outcomes of decisions by finding expected values and determine if decisions are fair.
- **GEOMETRIC PROBABILITIES**
  - FA.SPMD.6: Using Probability to Make Decisions Analyze decisions and strategies using probability concepts.

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