Texas Tutorials are designed specifically for the Texas Essential Knowledge and Skills (TEKS) to prepare students for the State of Texas Assessment of Academic Readiness (STAAR)® end-of-course assessments.

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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, Equations, and Inequalities

- **SIMPLIFYING SQUARE ROOTS**
  - 11.A: The student applies the mathematical process standards and algebraic methods to rewrite algebraic expressions into equivalent forms. simplify numerical radical expressions involving square roots; and
- **LAWS OF EXPONENTS**
  - 11.B: The student applies the mathematical process standards and algebraic methods to rewrite algebraic expressions into equivalent forms. simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents.
  - 11.A: The student applies the mathematical process standards and algebraic methods to rewrite algebraic expressions into equivalent forms. simplify numerical radical expressions involving square roots; and
- **SOLVING MULTI-STEP EQUATIONS**
  - 5.A: The student applies the mathematical process standards to solve, with and without technology, linear equations and evaluate the reasonableness of their solutions. solve linear

equations in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides;

- **SOLVING MULTI-STEP INEQUALITIES**
  - 5.B: The student applies the mathematical process standards to solve, with and without technology, linear equations and evaluate the reasonableness of their solutions. solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides; and

Unit 2: Functions

- **FUNCTIONS AND RELATIONS**
  - 12.A: The student applies the mathematical process standards and algebraic methods to write, solve, analyze, and evaluate equations, relations, and functions. decide whether relations represented verbally, tabularly, graphically, and symbolically define a function;
- **DOMAIN AND RANGE**
  - 2.A: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. determine the domain and range of a linear function in mathematical problems; determine reasonable domain and range values for real-world situations, both continuous and discrete; and represent domain and range using inequalities;
- **EVALUATING FUNCTIONS**
  - 12.B: The student applies the mathematical process standards and algebraic methods to write, solve, analyze, and evaluate equations, relations, and functions. evaluate functions, expressed in function notation, given one or more elements in their domains;

Unit 3: Forms of Linear Equations

- **SLOPE**
  - 3.A: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. determine the slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms, including = + , + = , and - = (-);
  - 3.B: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. calculate the rate of change of a linear function represented tabularly, graphically, or algebraically in context of mathematical and real-world problems;
  - 3.A: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. determine the

slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms, including = + , + = , and - = (-);

- **SLOPE-INTERCEPT FORM OF A LINEAR EQUATION**
  - 3.A: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. determine the slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms, including = + , + = , and - = (-);
  - 2.B: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write linear equations in two variables in various forms, including = + , + = , and - = (-), given one point and the slope and given two points;
  - 3.A: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. determine the slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms, including = + , + = , and - = (-);
  - 3.C: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. graph linear functions on the coordinate plane and identify key features, including x-intercept, y-intercept, zeros, and slope, in mathematical and real-world problems;
  - 3.A: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. determine the slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms, including = + , + = , and - = (-);
  - 3.B: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. calculate the rate of change of a linear function represented tabularly, graphically, or algebraically in context of mathematical and real-world problems;
- **SLOPES OF PERPENDICULAR AND PARALLEL LINES**
  - 2.E: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write the equation of a line that contains a given point and is parallel to a given line;

- 2.F: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write the equation of a line that contains a given point and is perpendicular to a given line;
- 2.G: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write an equation of a line that is parallel or perpendicular to the X or Y axis and determine whether the slope of the line is zero or undefined;

- **POINT-SLOPE FORM OF A LINEAR EQUATION**
  - 2.B: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write linear equations in two variables in various forms, including = + , + = , and - = (-), given one point and the slope and given two points;
  - 3.A: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. determine the slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms, including = + , + = , and - = (-);
  - 3.C: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. graph linear functions on the coordinate plane and identify key features, including x-intercept, y-intercept, zeros, and slope, in mathematical and real-world problems;

Unit 4: Graphing Linear Functions and Inequalities

- **GRAPHING LINEAR FUNCTIONS**
  - 2.C: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write linear equations in two variables given a table of values, a graph, and a verbal description;
  - 3.C: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. graph linear functions on the coordinate plane and identify key features, including x-intercept, y-intercept, zeros, and slope, in mathematical and real-world problems;
- **TRANSFORMATIONS OF THE LINEAR PARENT FUNCTION**
  - 3.E: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve,

with and without technology, equations, inequalities, and systems of equations. determine the effects on the graph of the parent function () = when () is replaced by (), () + , (x -), () for specific values of , , , and ;

- **GRAPHS OF LINEAR INEQUALITIES**
  - 2.H: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write linear inequalities in two variables given a table of values, a graph, and a verbal description; and
  - 3.D: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. graph the solution set of linear inequalities in two variables on the coordinate plane;

Unit 5: Linear Systems

- **SOLVING SYSTEMS OF LINEAR EQUATIONS: GRAPHING**
  - 2.I: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write systems of two linear equations given a table of values, a graph, and a verbal description.
  - 5.C: The student applies the mathematical process standards to solve, with and without technology, linear equations and evaluate the reasonableness of their solutions. solve systems of two linear equations with two variables for mathematical and real-world problems.
  - 3.F: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. graph systems of two linear equations in two variables on the coordinate plane and determine the solutions if they exist;
  - 3.G: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. estimate graphically the solutions to systems of two linear equations with two variables in real-world problems; and
- **SOLVING SYSTEMS OF LINEAR EQUATIONS: SUBSTITUTION**
  - 2.I: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write systems of two linear equations given a table of values, a graph, and a verbal description.
  - 5.C: The student applies the mathematical process standards to solve, with and without technology, linear equations and evaluate the reasonableness of their solutions. solve systems of two linear equations with two variables for mathematical and real-world problems.

- **SOLVING SYSTEMS OF LINEAR EQUATIONS: ELIMINATION**
  - 2.I: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write systems of two linear equations given a table of values, a graph, and a verbal description.
  - 5.C: The student applies the mathematical process standards to solve, with and without technology, linear equations and evaluate the reasonableness of their solutions. solve systems of two linear equations with two variables for mathematical and real-world problems.
- **SOLVING SYSTEMS OF LINEAR INEQUALITIES**
  - 3.H: The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. graph the solution set of systems of two linear inequalities in two variables on the coordinate plane.

Unit 6: Operations with Polynomials

- **ADDITION AND SUBTRACTION OF POLYNOMIALS**
  - 10.A: The student applies the mathematical process standards and algebraic methods to rewrite in equivalent forms and perform operations on polynomial expressions. add and subtract polynomials of degree one and degree two;
- **MULTIPLICATION OF POLYNOMIALS**
  - 10.B: The student applies the mathematical process standards and algebraic methods to rewrite in equivalent forms and perform operations on polynomial expressions. multiply polynomials of degree one and degree two;
- **DIVISION OF POLYNOMIALS**
  - 10.C: The student applies the mathematical process standards and algebraic methods to rewrite in equivalent forms and perform operations on polynomial expressions. determine the quotient of a polynomial of degree one and polynomial of degree two when divided by a polynomial of degree one and polynomial of degree two when the degree of the divisor does not exceed the degree of the dividend;

Unit 7: Factoring Polynomials

- **FACTORING POLYNOMIALS WITH GCF**
  - 10.D: The student applies the mathematical process standards and algebraic methods to rewrite in equivalent forms and perform operations on polynomial expressions. rewrite polynomial expressions of degree one and degree two in equivalent forms using the distributive property;
  - 8.A: The student applies the mathematical process standards to solve, with and without technology, quadratic equations and evaluate the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-

world data. solve quadratic equations having real solutions by factoring, taking square roots, completing the square, and applying the quadratic formula; and

- **FACTORING QUADRATIC TRINOMIALS**
  - 10.E: The student applies the mathematical process standards and algebraic methods to rewrite in equivalent forms and perform operations on polynomial expressions. factor, if possible, trinomials with real factors in the form + + , including perfect square trinomials of degree two; and
  - 8.A: The student applies the mathematical process standards to solve, with and without technology, quadratic equations and evaluate the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. solve quadratic equations having real solutions by factoring, taking square roots, completing the square, and applying the quadratic formula; and
  - 10.E: The student applies the mathematical process standards and algebraic methods to rewrite in equivalent forms and perform operations on polynomial expressions. factor, if possible, trinomials with real factors in the form + + , including perfect square trinomials of degree two; and
- **FACTORING SPECIAL CASES**
  - 10.E: The student applies the mathematical process standards and algebraic methods to rewrite in equivalent forms and perform operations on polynomial expressions. factor, if possible, trinomials with real factors in the form + + , including perfect square trinomials of degree two; and
  - 10.F: The student applies the mathematical process standards and algebraic methods to rewrite in equivalent forms and perform operations on polynomial expressions. decide if a binomial can be written as the difference of two squares and, if possible, use the structure of a difference of two squares to rewrite the binomial.
  - 7.B: The student applies the mathematical process standards when using graphs of quadratic functions and their related transformations to represent in multiple ways and determine, with and without technology, the solutions to equations. describe the relationship between the linear factors of quadratic expressions and the zeros of their associated quadratic functions; and

Unit 8: Quadratic Functions

- **QUADRATIC FUNCTIONS**
  - 7.A: The student applies the mathematical process standards when using graphs of quadratic functions and their related transformations to represent in multiple ways and determine, with and without technology, the solutions to equations. graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including -intercept, -intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry;
- **GRAPHING AND WRITING QUADRATIC FUNCTIONS**

- 6.A: The student applies the mathematical process standards when using properties of quadratic functions to write and represent in multiple ways, with and without technology, quadratic equations. determine the domain and range of quadratic functions and represent the domain and range using inequalities;
- 7.C: The student applies the mathematical process standards when using graphs of quadratic functions and their related transformations to represent in multiple ways and determine, with and without technology, the solutions to equations. determine the effects on the graph of the parent function () = when () is replaced by (), () + , (-), () for specific values of , , , and .

Unit 9: Solving Quadratic Equations

- **SOLVING QUADRATIC EQUATIONS BY FACTORING**
  - 8.A: The student applies the mathematical process standards to solve, with and without technology, quadratic equations and evaluate the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. solve quadratic equations having real solutions by factoring, taking square roots, completing the square, and applying the quadratic formula; and
  - 6.C: The student applies the mathematical process standards when using properties of quadratic functions to write and represent in multiple ways, with and without technology, quadratic equations. write quadratic functions when given real solutions and graphs of their related equations.
  - 7.B: The student applies the mathematical process standards when using graphs of quadratic functions and their related transformations to represent in multiple ways and determine, with and without technology, the solutions to equations. describe the relationship between the linear factors of quadratic expressions and the zeros of their associated quadratic functions; and
- **COMPLETING THE SQUARE**
  - 8.A: The student applies the mathematical process standards to solve, with and without technology, quadratic equations and evaluate the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. solve quadratic equations having real solutions by factoring, taking square roots, completing the square, and applying the quadratic formula; and
  - 6.B: The student applies the mathematical process standards when using properties of quadratic functions to write and represent in multiple ways, with and without technology, quadratic equations. write equations of quadratic functions given the vertex and another point on the graph, write the equation in vertex form (() = (-)+), and rewrite the equation from vertex form to standard form (() = + +); and
  - 6.C: The student applies the mathematical process standards when using properties of quadratic functions to write and represent in multiple ways, with and without technology, quadratic equations. write quadratic functions when given real solutions and graphs of their related equations.

- **QUADRATIC FORMULA**
  - 8.A: The student applies the mathematical process standards to solve, with and without technology, quadratic equations and evaluate the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. solve quadratic equations having real solutions by factoring, taking square roots, completing the square, and applying the quadratic formula; and
  - 6.C: The student applies the mathematical process standards when using properties of quadratic functions to write and represent in multiple ways, with and without technology, quadratic equations. write quadratic functions when given real solutions and graphs of their related equations.

Unit 10: Exponential Functions

- **EXPONENTIAL FUNCTIONS**
  - 9.A: The student applies the mathematical process standards when using properties of exponential functions and their related transformations to write, graph, and represent in multiple ways exponential equations and evaluate, with and without technology, the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. determine the domain and range of exponential functions of the form () = to the power and represent the domain and range using inequalities;
  - 9.D: The student applies the mathematical process standards when using properties of exponential functions and their related transformations to write, graph, and represent in multiple ways exponential equations and evaluate, with and without technology, the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. graph exponential functions that model growth and decay and identify key features, including y-intercept and asymptote, in mathematical and real-world problems; and
  - 9.B: The student applies the mathematical process standards when using properties of exponential functions and their related transformations to write, graph, and represent in multiple ways exponential equations and evaluate, with and without technology, the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. interpret the meaning of the values of and in exponential functions of the form () = to the power in real-world problems;
  - 9.C: The student applies the mathematical process standards when using properties of exponential functions and their related transformations to write, graph, and represent in multiple ways exponential equations and evaluate, with and without technology, the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. write exponential functions in the form () = to the power (where is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay;
- **EXPONENTIAL GROWTH AND DECAY**

- 9.B: The student applies the mathematical process standards when using properties of exponential functions and their related transformations to write, graph, and represent in multiple ways exponential equations and evaluate, with and without technology, the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. interpret the meaning of the values of and in exponential functions of the form () = to the power in real-world problems;
- 9.C: The student applies the mathematical process standards when using properties of exponential functions and their related transformations to write, graph, and represent in multiple ways exponential equations and evaluate, with and without technology, the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. write exponential functions in the form () = to the power (where is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay;
- 9.D: The student applies the mathematical process standards when using properties of exponential functions and their related transformations to write, graph, and represent in multiple ways exponential equations and evaluate, with and without technology, the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. graph exponential functions that model growth and decay and identify key features, including y-intercept and asymptote, in mathematical and real-world problems; and

- **ARITHMETIC AND GEOMETRIC SEQUENCES**
  - 12.D: The student applies the mathematical process standards and algebraic methods to write, solve, analyze, and evaluate equations, relations, and functions. write a formula for the th term of arithmetic and geometric sequences, given the value of several of their terms; and
  - 12.C: The student applies the mathematical process standards and algebraic methods to write, solve, analyze, and evaluate equations, relations, and functions. identify terms of arithmetic and geometric sequences when the sequences are given in function form using recursive processes;

Unit 11: Modeling Data

- **SCATTERPLOTS**
  - 4.A: The student applies the mathematical process standards to formulate statistical relationships and evaluate their reasonableness based on real-world data. calculate, using technology, the correlation coefficient between two quantitative variables and interpret this quantity as a measure of the strength of the linear association;
  - 4.B: The student applies the mathematical process standards to formulate statistical relationships and evaluate their reasonableness based on real-world data. compare and contrast association and causation in real-world problems; and
- **SCATTERPLOTS AND MODELING**

- 4.C: The student applies the mathematical process standards to formulate statistical relationships and evaluate their reasonableness based on real-world data. write, with and without technology, linear functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems.

- **QUADRATIC AND EXPONENTIAL MODELS**
  - 8.B: The student applies the mathematical process standards to solve, with and without technology, quadratic equations and evaluate the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. write, using technology, quadratic functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems.
  - 9.E: The student applies the mathematical process standards when using properties of exponential functions and their related transformations to write, graph, and represent in multiple ways exponential equations and evaluate, with and without technology, the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. write, using technology, exponential functions that provide a reasonable fit to data and make predictions for real-world problems.

Unit 12: Equations and Variation

- **LITERAL EQUATIONS**
  - 12.E: The student applies the mathematical process standards and algebraic methods to write, solve, analyze, and evaluate equations, relations, and functions. solve mathematic and scientific formulas, and other literal equations, for a specified variable.

- **DIRECT VARIATION**
  - 2.D: The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. write and solve equations involving direct variation;