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## TASC Test Assessing Secondary Completion™

### Mathematics

TASC test emphasizes the Common Core State Standards for Mathematics that are the most relevant to College and Career Readiness, as indicated by the categories in the below “High Emphasis” category. Concepts in the “Medium Emphasis” items will be fully assessed within TASC test as well, though there will be fewer questions aligned to these standards.

The “Low Emphasis” category will have no more than one or two items on any given test. Since TASC test is fully aligned to the Common Core, basic familiarity with these concepts may be assessed.

The Standards for Mathematical Practice, as well as the High School Modeling domain, are not separately assessed and reported on TASC test, but are skills that are incorporated throughout the assessment of the content standards.

No standards that are categorized by the Common Core State Standards as “advanced” will be directly assessed on TASC test.

#### High Emphasis:

##### Algebra: Arithmetic with Polynomials and Rational Expressions

- A-APR.1 - Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.
- A-APR.3 - Identify zeroes of polynomials when suitable factorizations are available, and use the zeroes to construct a rough graph of the function defined by the polynomial.

##### Algebra: Reasoning with Equations and Inequalities

- A-REI.1 - Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
- A-REI.3 - Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
- A-REI.4 - Solve quadratic equations in one variable.
- A-REI.10 - Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
- A-REI.12 - Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

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### Algebra: Creating Equations

- A-CED.1 - Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
- A-CED.2 – Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
- A-CED.3 – Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.
- A-CED.4 - Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law  $V = IR$  to highlight resistance  $R$ .

### Algebra: Seeing Structure in Expressions

- A-SSE.1 - Interpret expressions that represent a quantity in terms of its context.
- A-SSE.3 - Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

### Functions: Interpreting Functions

- F-IF.1 - 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. If  $f$  is a function and  $x$  is an element of its domain, then  $f(x)$  denotes the output of  $f$  corresponding to the input  $x$ . The graph of  $f$  is the graph of the equation  $y = f(x)$ .
- F-IF.2 – Use function notations, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
- F-IF.4 - For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.
- F-IF.5 - Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function  $h(n)$  gives the number of person-hours it takes to assemble  $n$  engines in a factory, then the positive integers would be an appropriate domain for the function.
- F-IF.6 - Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
- F-IF.7 - Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.
- F-IF.8 - Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.
- F-IF.9 - Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.

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### **Functions: Linear, Quadratic, and Exponential Models**

- F-LE.1 - Distinguish between situations that can be modeled with linear functions and with exponential functions.
- F-LE.2 - Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).
- F-LE.3 - Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.
- F-LE.5 - Interpret the parameters in a linear, quadratic, or exponential function in terms of a context.

### **Geometry: Geometric Measurement with Dimension**

- G-GMD.3 - Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
- G-GMD.4 - Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.

### **Geometry: Modeling with Geometry**

- G-MG.2 - Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).

### **Number and Quantity: The Real Number System**

- N-RN.2 - Rewrite expressions involving radicals and rational exponents using the properties of exponents.
- N-RN.3 - 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 rational number and an irrational number is irrational.

### **Medium Emphasis:**

- Functions: Building Functions
- Geometry: Congruence
- Geometry: Similarity, Right Triangles, and Trigonometry
- Number and Quantity: Quantities
- Statistics and Probability: Making Inferences and Justifying Conclusions
- Statistics and Probability: Interpreting Categorical and Quantitative Data

### **Low Emphasis:**

- Other standards from Domains listed above
- Functions: Trigonometric Functions
- Geometry: Circles
- Geometry: Expressing Geometric Properties with Equations
- Number and Quantity: The Complex Number System
- Statistics and Probability: Conditional Probability and Rules of Probability

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