

EPAS Mathematics Standards for Transition Found in the PASS Mathematics Courses

Strand	Score Range 13–15	Score Range 16–19	Score Range 20–23	Score Range 24–27	Score Range 28–32	Score Range 33–36
Basic Operations & Applications	<p>Perform one-operation computation with whole numbers and decimals</p> <p>Solve problems in one or two steps using whole numbers</p> <p>Perform common conversions (e.g., inches to feet or hours to minutes)</p> <p>Find equivalent values of coins</p>	<p>Solve routine one-step arithmetic problems such as single-step percent and calculate a simple average of whole numbers</p> <p>Solve some routine two-step arithmetic problems</p> <p><i>8th</i></p>	<p>Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, computing an average with negative integers, and computing with a given average</p> <p><i>8th</i></p> <p><i>Algebra I</i></p> <p><i>Algebra II</i></p>	<p>Solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour)</p>	<p>Solve word problems containing several rates, proportions, or percentages</p> <p><i>Algebra I</i></p> <p><i>Algebra II</i></p>	<p>Solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings)</p>
Probability, Statistics, & Data Analysis	<p>Perform a single computation using information from a table or chart</p>	<p>Read tables and graphs</p> <p>Perform computations on data from tables and graphs</p> <p>Use the relationship between the probability of an event and the probability of its complement</p> <p><i>8th</i></p> <p><i>Algebra I</i></p>	<p>Translate from one representation of data to another (e.g., a bar graph to a circle graph)</p> <p>Determine the probability of a simple event</p> <p>Exhibit knowledge of simple counting techniques</p> <p><i>8th</i></p> <p><i>Algebra I</i></p>	<p>Manipulate data from tables and graphs</p> <p>Use Venn diagrams in counting</p> <p>Compute straightforward probabilities for common situations</p> <p><i>Algebra I</i></p>	<p>Interpret and use information from figures, tables, and graphs including graphs in the coordinate plane</p> <p>Apply counting techniques</p> <p>Compute a probability when the event and/or sample space are not given or obvious</p> <p><i>Algebra I</i></p>	<p>Analyze and draw conclusions based on information from figures, tables, and graphs including graphs in the coordinate plane</p> <p>Exhibit knowledge of conditional and joint probability</p>

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Numbers: Concepts & Properties		Recognize one-digit factors of a number Identify a digit's place value	Exhibit knowledge of elementary number concepts including the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor <i>8th</i>	Work problems involving positive integer exponents, ordering fractions, numerical factors, least common multiple, square roots, and cube roots Determine when an expression is undefined Square numbers and expressions Exhibit some knowledge of the complex numbers <i>Algebra I</i> <i>Algebra II</i>	Apply the rules of exponents and number properties—often in a new context—to solve problems that involve even/odd numbers, positive/negative integers, factors/multiples, and prime factorizations Multiply two complex numbers <i>Algebra II</i>	Draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers Exhibit knowledge of logarithms and geometric sequences Apply properties of complex numbers <i>Algebra II</i>
Algebraic Expressions	Exhibit knowledge of basic expressions (e.g., identify an expression for a total as $b + g$) <i>Algebra I</i>	Combine like terms (e.g., $2x + 5x$) Substitute whole numbers for unknown quantities to evaluate expressions <i>Algebra I</i>	Manipulate basic algebraic expressions (e.g., substitute integers for unknown quantities, add and subtract simple algebraic expressions, multiply two binomials, and perform straightforward word-to-symbol translations) <i>Algebra I</i>	Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) Add, subtract, and multiply polynomials Write expressions with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions) <i>Algebra I</i> <i>Algebra II</i>	Manipulate expressions Write expressions for common algebra settings	Write expressions that require planning and/or manipulating to accurately model a situation

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<p>Equations & Inequalities</p>	<p>Solve equations in the form $x + a = b$, where a and b are whole numbers or decimals</p>	<p>Solve one-step equations having integer or decimal answers</p>	<p>Solve routine first-degree equations</p> <p align="center"><i>8th</i></p>	<p>Solve real-world problems using first-degree equations</p> <p>Solve first-degree inequalities that do not require reversing the inequality sign</p> <p>Identify solutions to simple quadratic equations</p> <p>Write equations and inequalities with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions)</p> <p align="center"><i>8th</i> <i>Algebra I</i></p>	<p>Manipulate equations</p> <p>Write equations and inequalities for common algebra settings</p> <p>Solve absolute value and quadratic equations</p> <p>Solve linear inequalities that require reversing the inequality sign</p> <p>Find solutions to systems of linear equations</p> <p align="center"><i>8th</i> <i>Algebra I</i> <i>Algebra II</i></p>	<p>Solve simple absolute value inequalities</p> <p>Write equations and inequalities that require planning, manipulating, and/or solving</p>

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Graphical Representations	Identify the location of a point with a positive coordinate on the number line	Locate points on the number line and in the first quadrant <i>Algebra I</i> <i>Geometry</i>	Comprehend the concept of length on the number line Locate points in the coordinate plane Exhibit knowledge of vertical and horizontal lines and of their point of intersection Exhibit knowledge of slope <i>Algebra I</i> <i>Geometry</i>	Identify the graph of a linear inequality on the number line Determine the slope of a line from points or equations Match linear graphs with their equations Find the midpoint of a line segment <i>Algebra I</i> <i>Geometry</i>	Match number line graphs with solution sets of linear inequalities Use the distance formula Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle) <i>Algebra I</i> <i>Geometry</i> <i>Algebra II</i>	Match number line graphs with solution sets of simple quadratic inequalities Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$ Solve problems integrating multiple algebraic and/or geometric concepts <i>Algebra II</i>
Properties of Plane Figures			Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90° , 180° , and 360°) <i>Geometry</i>	Use properties of isosceles triangles Recognize Pythagorean triples Use several angle properties to find an unknown angle measure <i>Geometry</i>	Apply properties of 30° - 60° - 90° , 45° - 45° - 90° , similar, and congruent triangles Use the Pythagorean theorem <i>Geometry</i>	Draw conclusions based on a set of conditions Solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas Use relationships among angles, arcs, and distances in a circle <i>Geometry</i>

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Measurement	<p>Estimate or calculate the length of a line segment based on other lengths given on a geometric figure</p> <p style="color: blue;">8th Geometry</p>	<p>Compute the perimeter of polygons when all side lengths are given</p> <p>Compute the area of rectangles when whole number dimensions are given</p> <p style="color: blue;">8th</p>	<p>Compute the area and perimeter of triangles and rectangles when the problems are simple</p> <p>Use geometric formulas when all necessary information is given</p> <p style="color: blue;">8th</p>	<p>Compute areas and circumferences of circles after identifying necessary information</p> <p>Compute areas of rectangles and triangles when one or more additional simple steps are required</p> <p>Compute the perimeter of simple composite geometric figures with unknown side lengths</p> <p style="color: blue;">8th Geometry</p>	<p>Use relationships involving area, perimeter, and volume of geometric figures to compute another measure</p> <p style="color: blue;">Geometry</p>	<p>Use scale factors to determine the magnitude of a size change</p> <p>Compute the area of composite geometric figures when planning or visualization is required</p>
Functions			<p>Work with function notation in evaluating simple quadratic functions at integer values</p> <p style="color: blue;">Algebra I Algebra II</p>	<p>Work with function notation in evaluating polynomial functions at integer values</p> <p>Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths</p> <p style="color: blue;">Geometry</p>	<p>Evaluate composite functions at integer values</p> <p>Apply basic trigonometric ratios to solve right-triangle problems</p> <p style="color: blue;">Geometry</p>	<p>Write an expression for the composite of two simple functions</p> <p>Use trigonometric concepts and basic identities to solve problems</p> <p>Exhibit knowledge of unit circle trigonometry</p> <p>Match graphs of basic trigonometric functions with their equations</p> <p style="color: blue;">Geometry</p>