

Claim 1: Concepts and Procedures. Students can explain and apply mathematical concepts and interpret and carry out mathematical procedures with precision and fluency.

Focus	Target	Standards	Goal DOK	Relative Emphasis/ Comments	%
Not used in this grade.	<p>A. Know that there are numbers that are not rational, and approximate them by rational numbers.</p> <p>Evidence Required:</p> <ol style="list-style-type: none"> The student classifies real numbers as rational or irrational. The student converts a repeating decimal into a fraction. The student writes approximations of irrational numbers as rational numbers. The student compares the sizes of irrational numbers by using rational approximations of irrational numbers. The student approximates the locations of irrational numbers on the number line by using rational approximations of irrational numbers. The student identifies or writes the prime factorization of a number using exponents. 	8.NS.1, 8.NS.2, 8.NS.3	1	Medium	65-75%
	<p>B. Work with radicals and integer exponents.</p> <p>Evidence Required:</p> <ol style="list-style-type: none"> The student generates equivalent numerical expressions by applying the properties of integer exponents. The student represents solutions to equations of the form $x^2 = p$ using square root symbols. The student represents solutions to equations of the form $x^3 = p$ using cube root symbols. The student states how many times as large or as small one number, written as a single digit times a power of 10, is than another, to estimate very large or very small quantities. The student performs operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. 	8.EE.1, 8.EE.2, 8.EE.3, 8.EE.4	1	High	

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Not used in this grade.	<p>C. Understand the connections between proportional relationships, lines, and linear equations. Evidence Required:</p> <ol style="list-style-type: none"> 1. The student graphs proportional relationships. 2. The student interprets the unit rate as the slope of the graph of a proportional relationship. 3. The student compares two different proportional relationships represented in different formats. 4. The student uses similar triangles to determine that the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane. 5. The student finds the equation $y = mx$ or $y = mx + b$ for a line. 	8.EE.5, 8.EE.6			
	<p>D. Analyze and solve linear equations and pairs of simultaneous linear equations. Evidence Required:</p> <ol style="list-style-type: none"> 1. The student identifies and writes examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. 2. The student solves linear equations in one variable with rational number coefficients, including equations with solutions that require expanding expressions using the distributive property and collecting like terms. 3. The student estimates solutions by graphing systems of two linear equations in two variables. 4. The student recognizes when a system of two linear equations in two variables has one solution, no solution, or infinitely many solutions. 5. The student solves a system of two linear equations in two variables algebraically, or solves real-world and mathematical problems leading to two linear equations in two variables. 	8.EE.7, 8.EE.8	2	High	Claim 1 cont. 65-75%

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Not used in this grade.	<p>E. Define, evaluate, and compare functions. Evidence Required The student recognizes that a function is a rule that assigns to each input exactly one output.</p> <ol style="list-style-type: none"> The student identifies or produces input and output pairs for given functions. The student recognizes the same function written in different functional forms (algebraic, graphic, tabular, or verbal). The student compares properties of two functions, each represented in a different way (algebraic, graphic, tabular, or verbal). The student interprets the equation $y = mx + b$ as defining a linear function with a graph that is a straight line. The student recognizes and gives examples of functions that are not linear. 	8.F.1, 8.F.2, 8.F.3	2	High	
	<p>F. Use functions to model relationships between quantities. Evidence Required:</p> <ol style="list-style-type: none"> The student constructs a function to model a linear relationship between two quantities. The student determines the rate of change and initial value of a function, either from a description of a relationship or from two (x, y) values, including reading the rate of change and/or the value of the function from a table or a graph. The student interprets features of a linear function, such as rate of change and initial value, in terms of the situation it models, its graph, or a table of values. The student qualitatively describes the functional relationship between two quantities by analyzing a graph (e.g., whether the function is increasing or decreasing, or whether the graph is linear or nonlinear). The student draws a graph that exhibits the qualitative features of a function that has been described in writing. 	8.F.4, 8.F.5	2	Medium	Claim 1 cont. 65-75%

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Not used in this grade.	<p>G. Understand congruence and similarity using physical models, transparencies, or geometry software.</p> <p>Evidence Required:</p> <ol style="list-style-type: none"> The student verifies that rigid transformations preserve distance and angle measures. The student describes sequences of rotations, reflections, translations, and dilations that can verify whether two dimensional figures are similar or congruent to each other. The student constructs a new figure after the original figure is dilated, rotated, reflected, or translated. The student describes the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. 	8.G.1, 8.G.2, 8.G.3, 8.G.4, 8.G.5	2	High	Claim 1 cont. 65-75%
	<p>H. Understand and apply the Pythagorean Theorem.</p> <p>Evidence Required:</p> <ol style="list-style-type: none"> The student solves real-world and mathematical problems of right triangles in two and three dimensions by applying the Pythagorean Theorem and its converse. The student finds the distance between two points in a coordinate system by applying the Pythagorean Theorem. 	8.G.6, 8.G.7, 8.G.8	2	High	
	<p>I. Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.</p> <p>Evidence Required:</p> <ol style="list-style-type: none"> The student solves real-world problems by applying the formulas for the volumes of cylinders, cones, and spheres. The student solves mathematical problems by applying the formulas for the volumes of cylinders, cones, and spheres. 	8.G.9	2	Low	

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Not used in this grade.	<p>J. Investigate patterns of association in bivariate data.</p> <p>Evidence Required:</p> <ol style="list-style-type: none"> 1. The student interprets patterns of association between two quantities in a scatter plot (clustering in reference to the line of best fit, positive or negative association, linear association, nonlinear association, and the effect of outliers) and interprets the slope and y-intercept in terms of the context. 2. The student identifies the slope (rate of change) and intercept (initial value) of a line suggested by examining bivariate measurement data in a scatter plot. 3. The student constructs and interprets a two-way table summarizing data on two categorical variables collected from the same subjects. 	8.SP.1, 8.SP.2, 8.SP.3, 8.SP.4	2	Medium	Claim 1 cont. 65-75%

Claim 2: Problem Solving. Students can solve a range of complex well-posed problems in pure and applied mathematics, making productive use of knowledge and problems solving strategies.

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Not used in this grade.	<p>A-D</p> <p>A. Apply mathematics to solve well-posed problems in pure mathematics and arising in everyday life, society, and the workplace.</p> <p>B. Select and use appropriate tools strategically.</p> <p>C. Interpret results in the context of a situation.</p> <p>D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas).</p>	<p>Focus Clusters: 8.EE.B, 8.EE.C, 8.F.A, 8.F.B*, 8.G.A, 8.G.B, 8.G.C* *denotes minor clusters</p>	3	Tasks limited to machine-scorable responses, so not all Targets may be addressed.	8-12%

Claim 3: Communicating Reason. Students can clearly and precisely construct viable arguments to support their own reasoning and to critique the reasoning of other.

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Not used in this grade.	<p>A-F</p> <p>A. Test propositions or conjectures with specific examples.</p> <p>B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures.</p> <p>C. State logical assumptions being used.</p> <p>D. Use the technique of breaking an argument into cases.</p> <p>E. Distinguish correct logic or reasoning from that which is flawed and—if there is a flaw in the argument— explain what it is.</p> <p>F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.</p>	<p>Focus Clusters/Standards: 8.EE.1, 8.EE.5, 8.EE.6, 8.EE.7a, 8.EE.7b, 8.EE.8a, 8.F.1, 8.F.2, 8.F.3, 8.G.1, 8.G.2, 8.G.4, 8.G.5, 8.G.6, 8.G.8</p>	3	Tasks limited to machine-scorable responses, so not all Targets may be addressed.	8-12%

Claim 4: Modeling and Data Analysis. Students can analyze complex, real-world scenarios and can construct and use mathematical models to interpret and solve problems.

Focus	Target	Standards	Goal DOK	Relative Emphasis/ Comments	%
Not used in this grade.	<p>A-G</p> <p>A. Apply mathematics to solve problems arising in everyday life, society, and the workplace.</p> <p>B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem.</p> <p>C. State logical assumptions being used.</p> <p>D. Interpret results in the context of a situation.</p> <p>E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon.</p> <p>F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas).</p> <p>G. Identify, analyze, and synthesize relevant external resources to pose or solve problems. (performance tasks only)</p>	<p>Focus Clusters: 8.EE.3, 8.EE.4, 8.EE.B, 8.EE.C, 8.F.B*, 8.G.B, 8.G.C*, 8.SP.A* *denotes minor clusters</p>	3	Tasks limited to machine-scorable responses, so not all Targets may be addressed.	8-12%