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	%
N-RN.A	A. Extend the properties of exponents to rational exponents. **Evidence Required:** 1. The student rewrites expressions in radical form into an equivalent expression with rational exponents. 2. The student rewrites expressions with rational exponents into an equivalent expression in radical form. 3. The student uses the properties of exponents to write equivalent expressions involving radicals and rational exponents. **Focus:** Use and identify properties of exponents to rewrite expressions.	N-RN.2	2	Low	65-75%
N-RN.B	B. Use properties of rational and irrational numbers. **Evidence Required:** 1. The student provides examples of addition or multiplication problems that will have sums or products of a specified type (either rational or irrational). 2. The student determines whether the sum of two numbers is a rational number or an irrational number. 3. The student determines whether the product of two numbers is a rational number or an irrational number. 4. The student provides an abstract generalization that the sum or product of any two rational numbers is rational, the sum of a rational number and an irrational number is irrational, and the product of a nonzero rational number and an irrational number is irrational. **Focus:** Solve problems using square and cube roots. For example, student may solve for a specified variables for equations such as distance between points, surface area, and volume.	N-RN.3			

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Focus	Target	Standards	Goal DOK	Relative Emphasis/ Comments	%
N-Q.A	C. Reason quantitatively and use units to solve problems. **Evidence Required:** 1. The student chooses units consistently in formulas. 2. The student chooses the scales for graphs and data displays. **Focus:** Use the context of real world and mathematical problems to choose appropriate units, with special emphasis on units related to length, area, and/or volume of a figure.	N-Q.1	2	Medium	Claim 1 cont. 65-75%
A-SSE.A	D. Interpret the structure of expressions. **Evidence Required:** 1. The student uses the structure of an expression to identify ways of rewriting it. **Focus:** Identify the meaning of parts of an expression in the context of geometric formulas. Use properties of these expressions to rewrite them. Functions may include nonlinear expressions including high degree polynomials.	A-SSE.2	1		
A-SSE.B	E. Write expressions in equivalent forms to solve problems. **Evidence Required:** 1. The student understands that the factored form of a quadratic expression reveals the zeros of the function it defines. 2. The student understands that completing the square for a quadratic expression reveals the maximum or minimum value of the function it defines. 3. The student uses the properties of exponents to transform exponential expressions. **Focus:** Factor and complete the square to find the zeros, maximum, and minimum values of a quadratic function.	A-SSE.3	2		
A-APR.A	F. Perform arithmetic operations on polynomials. **Evidence Required:** 1. The student adds or subtracts polynomials. 2. The student multiplies polynomials. **Focus:** Add, subtract, and multiply polynomials in the context of finding perimeter, area, and surface area of partial or composite figures.	A-APR.1	1	High	

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Focus	Target	Standards	Goal DOK	Relative Emphasis/ Comments	%
A-CED.A	G. Create equations that describe numbers or relationships. **Evidence Required:** 1. The student creates one variable equations arising from linear, quadratic, simple rational, and exponential functions in one variable. 2. The student creates one variable inequalities arising from linear, quadratic, simple rational, and exponential functions in one variable. 3. The student graphs equations or inequalities on coordinate axes with labels and scales to represent the solution to a contextual problem. 4. The student creates equations in two or more variables to represent relationships between quantities. **Focus:** Model relationships using nonlinear equations and linear inequalities including but not limited to problems involving distance between points and similar figures.	A-CED.1, A-CED.2	2	High	Claim 1 cont. 65-75%
A-REI.A	H. Understand solving equations as a process of reasoning and explain the reasoning. **Evidence Required:** 1. The student solves radical and/or simple rational equations in one variable, including identifying the number and type of real solutions that might exist for the equation (e.g., one, two, infinite, or no real). 2. The student evaluates proposed solutions to radical or simple rational equations, and recognizes where extraneous solution(s) might arise during the solving of the equation. **Focus:** Solve multi-step equations involving combining like terms and using the distributive property.	A-REI.2	2	Medium	

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Focus	Target	Standards	Goal DOK	Relative Emphasis/ Comments	%
A-REI.B	I. Solve equations and inequalities in one variable. **Evidence Required:** 1. The student solves linear equations in one variable with numeric coefficients. 2. The student solves linear inequalities in one variable with numeric coefficients. 3. The student solves linear inequalities in one variable with letter coefficients or identifies appropriate value(s) of a letter coefficient given specific information about a variable in a linear equation or inequality. 4. The student solves quadratic equations in one variable by taking square roots, completing the square, using the quadratic formula, or by factoring. 5. The student recognizes when the quadratic formula gives complex solutions (no real solutions). 6. The student writes complex solutions for the quadratic formula in the form $a \pm bi$ where a and b are real numbers. **Focus:** Solve linear and quadratic equations and linear inequalities in one variable with emphasis on problems with geometric context such as segment lengths, angle measures, etc.	A-REI.3, A-REI.4	2	High	Claim 1 cont. 65-75%
F-IF.A	K. Understand the concept of a function and use function notation. **Evidence Required:** 1. The student understands that a function from one set (the domain) to another set (the range) assigns to each element of the domain exactly one element of the range (e.g., distinguish between functions and non-functions). 2. The student recognizes any necessary restriction that needs to be placed on the domain in order for an equation to represent a function. 3. The student understands that the graph of f is the graph of the equation y = f(x). 4. The student recognizes that sequences are functions whose domain is a subset of the integers. **Focus:** Understand domain, range, and their restrictions when working with functions and function notation. Compare functions using similar variables, such as area and circumference in relation to radius and diameter, and determine any restrictions for those variables.	F-IF.1, F-IF.3	1	Low	

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Focus	Target	Standards	Goal DOK	Relative Emphasis/ Comments	%
F-IF.B	L. Interpret functions that arise in applications in terms of the context. **Evidence Required:** 1. The student interprets key features of a graph or a table representing a function modeling a relationship between two quantities. 2. The student sketches graphs showing key features given a verbal description of a relationship between two quantities that can be modeled with a function. 3. The student relates the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. 4. The student calculates and interprets the average rate of change of a function presented symbolically or as a table and estimates the rate of change of a function from a graph. **Focus:** Use applications of a function in context to interpret the solution, such as the result of the distance formula, the meaning of a line's slope, or the surface area of a figure.	F-IF.4, F-IF.5, F-IF.6	1	Low	Claim 1 cont. 65-75%
F-BF.A	N. Build a function that models a relationship between two quantities. **Evidence Required:** 1. The student writes explicit or recursive functions to describe relationships between two quantities from a context. 2. The student translates between explicit formulas and recursively defined functions. 3. The student understands a function as a model of the relationship between two quantities. **Focus:** Use sequences and series to define patterns and relationships between variables or similar and congruent figures.	F-BF.1, F-BF.2	2		

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Focus	Target	Standards	Goal DOK	Relative Emphasis/ Comments	%
G-SRT.C	O. Define trigonometric ratios and solve problems involving right triangles. **Evidence Required:** 1. The student uses the definitions of trigonometric ratios for acute angles in a right triangle. 2. The student uses similar triangles to define and determine trigonometric ratios in right triangles. 3. The student explains and uses the relationship between the sine and cosine of complementary angles. 4. The student uses the Pythagorean Theorem and trigonometric ratios to solve problems involving right triangles in mathematical or real-world context. **Focus:** Use sine and cosine to compare properties of complementary angles and use Pythagorean Theorem with trigonometric ratios to solve real-world and mathematical problems.	G-SRT.6, G-SRT.7, G-SRT.8	2	High	Claim 1 cont. 65-75%
S-ID.A	P. Summarize, represent, and interpret data on a single count or measurement variable. **Evidence Required:** 1. The student will be able to represent data on the real number line with a dot plot, histogram, or box plot. 2. The student will be able to use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. 3. The student will be able to interpret the differences in shape, center, and spread in the context of the data sets. 4. The student will be able to interpret the effects of outliers on the shape, center, and spread of a data set. **Focus:** Use appropriate statistics to determine shape and spread of data using measures of center and variability.	S-ID.1, S-ID.2, S-ID.3			

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Focus	Target	Standards	Goal DOK	Relative Emphasis/ Comments	%
G-CO.C	Q. Prove geometric theorems. **Evidence Required:** 1. The student explains proofs or reasoning related to theorems about lines and angles. Theorems include, but are not limited to: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints. 2. The student explains proofs or reasoning related to theorems about triangles. Theorems include, but are not limited to: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point. 3. The student explains proofs or reasoning related to theorems about circles. Include proof that all circles are similar. 4. The student explains proofs or reasoning related to theorems about parallelograms. Theorems include, but are not limited to: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals. **Focus:** Explain proofs and reasoning related to lines, angles, triangles, circles, and parallelograms.	G-CO.9, G-CO.10, G-CO.11	2	High	Claim 1 cont. 65-75%
G-GMD.A	R. Explain volume formulas and use them to solve problems. **Evidence Required:** 1. The student solves real-world problems by applying the formulas for the volume of cylinders, pyramids, cones, and spheres. 2. The student solves mathematical problems by applying the formulas for the volume of cylinders, pyramids, cones, and spheres. **Focus:** Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.	G-GMD.1, G-GMD.3			

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.					
Focus	**Target**	**Standard**	**Goal DOK**	**Relative Emphasis/ Comments**	**%**
Not used in this grade.	**A-D** A. Apply mathematics to solve well-posed problems in pure mathematics and arising in everyday life, society, and the workplace. B. Select and use appropriate tools strategically. C. Interpret results in the context of a situation. D. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas).	Focus Clusters: N-Q.A, A-SSE.A, A-SSE.B, A-CED.A, A-REI.2, A-REI.B, A-REI.C, A-REI.D, F-IF.A, F-IF.B, F-IF.C, F-BF.A, G-SRT.C, S-ID.C, S-CP.A *denotes minor clusters	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.					
Focus	**Target**	**Standards**	**Goal DOK**	**Relative Emphasis/ Comments**	**%**
Not used in this grade.	**A-F** A. Test propositions or conjectures with specific examples. B. Construct, autonomously, chains of reasoning that will justify or refute propositions or conjectures. C. State logical assumptions being used. D. Use the technique of breaking an argument into cases. E. Distinguish correct logic or reasoning from that which is flawed and—if there is a flaw in the argument— explain what it is. F. Base arguments on concrete referents such as objects, drawings, diagrams, and actions.	Focus Clusters/Standards: N-RN.A, N-RN.B, N-RN.3, A-SSE.2, A-APR.1, A-APR.B, A-APR.4, A-APR.6, A-REI.A, A-REI.1, A-REI.2, A-REI.C, A-REI.10, A-REI.11, F-IF.1, F-IF.5, F-IF.9, F-BF.3, F-BF.4a, F-TF.1, F-TF.2, F-TF.8, G-CO.A, G-CO.B, G-CO.C, G-CO.9, G-CO.10, G-CO.11, G-SRT.A, G-SRT.B	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.	**A-G** A. Apply mathematics to solve problems arising in everyday life, society, and the workplace. B. Construct, autonomously, chains of reasoning to justify mathematical models used, interpretations made, and solutions proposed for a complex problem. C. State logical assumptions being used. D. Interpret results in the context of a situation. E. Analyze the adequacy of and make improvements to an existing model or develop a mathematical model of a real phenomenon. F. Identify important quantities in a practical situation and map their relationships (e.g., using diagrams, two-way tables, graphs, flowcharts, or formulas). G. Identify, analyze, and synthesize relevant external resources to pose or solve problems. (performance tasks only)	Focus Clusters: N-Q.A, A-SSE.B, A-CED.A, A-REI.A, A-REI.B, A-REI.C, F-IF.B, F-IF.C, F-BF.A, S-ID.A, S-ID.B, S-IC.1, S-IC.B, F-LE.A, F-LE.B, F-TF.5, G-GMD.3, G-MG *denotes minor clusters	3	Tasks limited to machine-scorable responses, so not all Targets may be addressed.	8-12%