OVERVIEW (Click on a course to view its curriculum map)

Middle School	Grade	Sections	Course	
	6th	Low	Course 1	
		Low-Avg / Avg		
		High-Avg / High		
	7th	Low	Course 2	
		Low-Avg / Avg	Course 2	Course 3
		High-Avg / High		
	8th	Low	Course 3	
		Low-Avg / Avg	Prealgebra	
		High-Avg / High	Algebra 1	

High School	Grade	Sections	Course
	9th	Standard	Algebra 1
		Honors	Geom / Intro to Alg 2
	10th	Standard	Algebra 2
		Honors	Precalculus
	11th	Standard	Geometry
		AP	Calculus AB
		Elective - Mixed	Intro to Stats
	12th	Standard	College Math
		AP	AP Stats
		AP	Calculus BC

SUMMARY (Click on a course or a standard's title to view in detail)

Number and Quantity (N) Standards

Column headers: N201, N202, N203, N301, N302, N303, N401, N402, N403, N404, N405, N406, N501, N502, N503, N504, N505, N601, N602, N603, N604, N605, N606, N607, N701, N702, N703, N704, N705, N706

Rows:
- Course 1 (6th) - A
- Course 2 (7th) - A (N402 marked "?")
- Course 3 (7th/8th) - A
- Prealgebra (8th) - S
- Algebra I (8th/9th) - S/H
- Geometry/ Intro Alg 2 (9th) - H (cell near N605 marked "?")
- Algebra 2 (10th) - S
- Precalculus (10th) - H
- Geometry (11th) - S
- College Math (12th) - S
- Statistics (11th) - E

Red line marks College Readiness Benchmarks

200 Level Standards = ACT Math Score 13 - 15
300 Level Standards = ACT Math Score 16 - 19
400 Level Standards = ACT Math Score 20 - 23
500 Level Standards = ACT Math Score 24 - 27
600 Level Standards = ACT Math Score 28 - 32
700 Level Standards = ACT Math Score 33 - 36

Yellow Cell: Standard is Covered in an earlier Course
Green Cell: Standard is Covered in Course
Red Cell: Standard is Not covered in Course

Underlined: Hyperlinked

Algebra and Functions (AF) Standards

Column headers: AF201, AF301, AF302, AF303, AF304, AF401, AF402, AF403, AF501, AF502, AF503, AF601, AF602, AF603, AF604, AF701, AF702, AF703, AF704, AF705, AF706

Rows:
- Course 1 (6th) - A
- Course 2 (7th) - A
- Course 3 (7th/8th) - A
- Prealgebra (8th) - S
- Algebra I (8th/9th) - S/H
- Geometry/ Intro Alg 2 (9th) - H
- Algebra 2 (10th) - S
- Precalculus (10th) - H
- Geometry (11th) - S
- College Math (12th) - S
- Statistics (11th) - E

Notes from ACT:

-Students who score in the 1–12 range are most likely beginning to develop the knowledge and skills assessed in the other ranges.

-Students who achieve the 28–32 level are likely able to use variables fluently so that they can solve problems with variables in the same way that they can solve the problems with numbers, and they can use variables to represent general properties.

-Because Algebra and Functions are closely connected, some standards apply to both categories. These have the abbreviation AF and are listed in both categories.

Algebra (A) Standards

Column headers: A201, A202, A301, A302, A303, A401, A402, A403, A404, A405, A406, A501, A502, A503, A504, A505, A506, A507, A508, A509, A510, A511, A512, A513, A514, A601, A602, A603, A604, A605, A606, A701, A702, A703

Rows:
- Course 1 (6th) - A
- Course 2 (7th) - A
- Course 3 (7th/8th) - A
- Prealgebra (8th) - S
- Algebra I (8th/9th) - S/H
- Geometry/ Intro Alg 2 (9th) - H
- Algebra 2 (10th) - S
- Precalculus (10th) - H
- Geometry (11th) - S
- College Math (12th) - S
- Statistics (11th) - E

Functions (F) Standards

Column headers: F201, F301, F401, F501, F502, F503, F504, F505, F506, F507, F508, F509, F510, F511, F601, F602, F603, F604, F701, F702, F703, F704, F705, F706, F707, F708

Geometry/ Intro Alg 2 (9th) - H

Course 1 (6th) - A
Course 2 (7th) - A
Course 3 (7th/8th) - A
Prealgebra (8th) - S
Algebra I (8th/9th) - S/H
Geometry/ Intro Alg 2 (9th) - H
Algebra 2 (10th) - S
Precalculus (10th) - H
Geometry (11th) - S
College Math (12th) - S
Statistics (11th) - E

Geometry (G) Standards

G201, G202, G203, G301, G302, G303, G304, G401, G402, G403, G404, G405, G406, G407, G501, G502, G503, G504, G505, G506, G507, G508, G509, G510, G511, G512, G601, G602, G603, G604, G605, G606, G607, G608, G609, G701, G702, G703, G704, G705

Statistics and Probability (S) Standards

S201, S202, S301, S302, S303, S304, S305, S401, S402, S403, S404, S405, S501, S502, S503, S504, S505, S506, S601, S602, S603, S604, S605, S606, S701, S702, S703, S704, S705

6th Grade Math: Course 1	
Chapter 1 Number Properties and Decimals	
Properties of numbers	N 201. Perform one-operation computation with whole numbers and decimals
Order of operations	N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor
Understanding decimals	
Adding and subtracting decimals	AF 201. Solve problems in one or two steps using whole numbers and using decimals in the context of money
Multiplying decimals	AF 302. Solve some routine two-step arithmetic problems
Dividing decimals	
Chapter 2 Expressions and Equations	
Variables and expressions	AF 402. Perform straightforward word-to-symbol translations
	A 201. Exhibit knowledge of basic expressions (e.g., identify an expression for a total as b + g)
Writing algebraic expressions	A 202. Solve equations in the form x + a = b, where a and b are whole numbers or decimals
Using number sense to solve one-step equations	A 301. Substitute whole numbers for unknown quantities to evaluate expressions
Solving addition equations	
Solving subtraction equations	
Solving multiplication and division equations	
Chapter 3 Number Theory	
Divisibility and mental math	N 301. Recognize one-digit factors of a number
	N 302. Identify a digit's place value
Exponents	N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor
Prime numbers and prime factorization	
	N 402. Write positive powers of 10 by using exponents
Greatest common factor	N 502. Find and use the least common multiple
Least common multiple	A 303. Combine like terms (e.g., 2x + 5x)
The distributive property	
Simplifying algebraic expressions	
Chapter 4 Fraction Operations	
Multiplying fractions and mixed numbers	N 501. Order fractions

Modeling fraction division	
Dividing fractions	
Dividing mixed numbers	
Equations with fractions	
Chapter 5 Ratios and Percents	
Ratios	AF 301. Solve routine one-step arithmetic problems using positive rational numbers, such as single-step percent
Unit rates	G 203. Perform common conversions of money and of length, weight, mass, and time within a measurement system (e.g., dollars to dimes,
Equivalent ratios and rates	inches to feet, and hours to minutes)
Using ratios to convert measurement units	
Understanding percents	
Percents, fractions, and decimals	
Finding a percent of a number	
Finding the whole	
Chapter 6 Integers and Rational Numbers	
Exploring integers	N 202. Recognize equivalent fractions and fractions in lowest terms
Comparing and ordering integers	N 203. Locate positive rational numbers (expressed as whole numbers, fractions, decimals, and mixed numbers) on the number line
Rational numbers	N 303. Locate rational numbers on the number line
Comparing and ordering rational numbers	N 403. Comprehend the concept of length on the number line, and find the distance between two points
Inequalities	
Solving one-step inequalities	
Chapter 7 The Coordinate Plane	
Points in the coordinate plane	F 201. Extend a given pattern by a few terms for patterns that have a constant increase or decrease between terms
Polygons in the coordinate plane	G 304. Locate points in the first quadrant
Functions	
Graphing functions	
Functions in the real world	
Chapter 8 Geometry and Measurement	
Areas of parallelograms and triangles	G 201. Estimate the length of a line segment based on other lengths in a geometric figure
	G 202. Calculate the length of a line segment based on the lengths of other line segments that go in the same direction (e.g., overlapping

Areas of polygons	line segments and parallel sides of polygons with only right angles)
Three-dimensional figures and spatial reasoning	G 302. Compute the perimeter of polygons when all side lengths are given
	G 303. Compute the area of rectangles when whole number dimensions are given
Surface areas of prisms and pyramids	G 504. Recognize that real-world measurements are typically imprecise and that an appropriate level of precision is related to the measuring device and procedure
Volumes of rectangular prisms	
Chapter 9 Data and Graphs	
Finding the mean	S 201. Calculate the average of a list of positive whole numbers
Median and mode	S 202. Extract one relevant number from a basic table or chart, and use it in a single computation
Frequency table and dot plots	S 301. Calculate the average of a list of numbers
	S 303. Read basic tables and charts
Bos-and-whisker plots	
Histograms	
Variability of data	
Shape of distributions	
Statistical questions	

7th Grade Math: Course 2

Chapter 1 Integers and Rational Numbers

Comparing and ordering numbers	N 201. Perform one-operation computation with whole numbers and decimals
	N 202. Recognize equivalent fractions and fractions in lowest terms
Adding and subtracting integers	N 203. Locate positive rational numbers (expressed as whole numbers, fractions, decimals, and mixed numbers) on the number line
	N 301. Recognize one-digit factors of a number
Multiplying and dividing integers	N 302. Identify a digit's place value
	N 303. Locate rational numbers on the number line
Fractions and decimals	N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor
Rational Numbers	
Adding and subtracting rational numbers	N 403. Comprehend the concept of length on the number line, and find the distance between two points
	N 501. Order fractions
Multiplying rational numbers	N 502. Find and use the least common multiple
	AF 201. Solve problems in one or two steps using whole numbers and using decimals in the context of money
Dividing rational numbers	AF 302. Solve some routine two-step arithmetic problems

Chapter 2 Equations

Evaluating and writing algebraic expressions	AF 302. Solve some routine two-step arithmetic problems
	AF 402. Perform straightforward word-to-symbol translation
Simplifying expressions	A 201. Exhibit knowledge of basic expressions (e.g., identify an expression for a total as b + g)
Solving one-step equations	A 202. Solve equations in the form x + a = b, where a and b are whole numbers or decimals
	A 301. Substitute whole numbers for unknown quantities to evaluate expressions
Exploring two-step equations	A 302. Solve one-step equations to get integer or decimal answers
	A 303. Combine like terms (e.g., 2x + 5x)
Solving two-step equations	
Solving equations involving the distributive property	

Chapter 3 inequalities

Graphing and writing inequalities	A 503. Solve first-degree inequalities when the method does not involve reversing the inequality sign
	A 602. Solve linear inequalities when the method involves reversing the inequality sign
Solving inequalities by adding or subtracting	A 603. Match linear inequalities with their graphs on the number line
Solving inequalities by multiplying or dividing	

Solving two-step inequalities	
Chapter 4 Ratios, Rates, and Proportions	
Ratios	AF 301. Solve routine one-step arithmetic problems using positive rational numbers, such as single-step percent
Unit rates and proportional reasoning	AF 502. Build functions and write expressions, equations, or 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)
Proportions	G 203. Perform common conversions of money and of length, weight, mass, and time within a measurement system (e.g., dollars to dimes, inches to feet, and hours to minutes)
Solving proportions	
Similar figures	
Maps and scale drawings	
Proportional relationships	
Chapter 5 Percents	
Percents, fractions and decimals	AF 301. Solve routine one-step arithmetic problems using positive rational numbers, such as single-step percent
Solving percent problems using proportions	
Solving percent problems using equations	
Application of percents	
Simple interest	
Finding percent of change	
Chapter 6 Geometry and Area	
Angle measures	G 201. Estimate the length of a line segment based on other lengths in a geometric figure
Area of a parallelogram	G 202. Calculate the length of a line segment based on the lengths of other line segments that go in the same direction (e.g., overlapping line segments and parallel sides of polygons with only right angles)
Area of a triangle	G 301. Exhibit some knowledge of the angles associated with parallel lines
Area of other figures	G 302. Compute the perimeter of polygons when all side lengths are given
Circumference and area of a circle	G 303. Compute the area of rectangles when whole number dimensions are given
Chapter 7 Surface Area and Volume	
Three-dimensional figures	
Surface area of prisms and cylinders	
Volume of prisms and cylinders	
Cross sections	
Chapter 8 Analyzing Data	

Random samples and surveys	S 202. Extract one relevant number from a basic table or chart, and use it in a single computation
	S 303. Read basic tables and charts
Estimating population size	S 304. Extract relevant data from a basic table or chart and use the data in a computation
	S 502. Manipulate data from tables and charts
Inferences	S 505. Recognize that when data summaries are reported in the real world, results are often rounded and must be interpreted as having
Data variability	appropriate precision
Chapter 9 Probability	
Probability	S 305. Use the relationship between the probability of an event and the probability of its complement
Experimental probability	S 403. Determine the probability of a simple event
Sample spaces	S 404. Describe events as combinations of other events (e.g., using and, or, and not)
Compound events	S 405. Exhibit knowledge of simple counting techniques
Simulating compound events	S 503. Compute straightforward probabilities for common situations

7th / 8th Grade Math: Course 3	
Chapter 1 Real Numbers and the Coordinate Plane	
Rational numbers	N 201. Perform one-operation computation with whole numbers and decimals
Irrational numbers and square roots	N 202. Recognize equivalent fractions and fractions in lowest terms
square roots	N 203. Locate positive rational numbers (expressed as whole numbers, fractions, decimals, and mixed numbers) on the number line
Cube roots	N 301. Recognize one-digit factors of a number
The Pythagorean theorem	N 302. Identify a digit's place value
	N 303. Locate rational numbers on the number line
Using the Pythagorean Theorem	N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor
Converse of the Pythagorean Theorem	N 403. Comprehend the concept of length on the number line, and find the distance between two points
Distance in the Coordinate Plane	N 405. Find the distance in the coordinate plane between two points with the same x-coordinate or y-coordinate
	N 501. Order fractions
Chapter 2 Solving Linear Equations	
Solving two-step equations	A 301. Substitute whole numbers for unknown quantities to evaluate expressions
	A 302. Solve one-step equations to get integer or decimal answers
Simplifying algebraic expressions	A 303. Combine like terms (e.g., 2x + 5x)
	A 401. Evaluate algebraic expressions by substituting integers for unknown quantities
Solving multi-step equations	A 402. Add and subtract simple algebraic expressions
	A 403. Solve routine first-degree equations
Solving equations with variables on both sides	
Types of solutions of linear equations	
Chapter 3 Introduction to Functions	
Relating graphs to events	AF 303. Relate a graph to a situation described qualitatively in terms of familiar properties such as before and after, increasing and decreasing, higher and lower
Functions	F 201. Extend a given pattern by a few terms for patterns that have a constant increase or decrease between terms
Proportional relationships	F 301. Extend a given pattern by a few terms for patterns that have a constant factor between terms
Linear functions	
Nonlinear functions	
Chapter 4 Graphing Functions	
Understanding slope	A 406. Exhibit knowledge of slope
Graphing linear functions	G 510. Determine the slope of a line from points or a graph
Writing rules for linear functions	
Comparing functions	
Chapter 5 Systems of Linear Equations	
Solving systems by graphing	A 604. Solve systems of two linear equations
Proportional relationships	
Solving systems by substitution	
Solving systems by elimination	
Systems in the real world	
Chapter 6 Exponents	
Scientific notation	N 402. Write positive powers of 10 by using exponents
Exponents and multiplication	A 511. Work with scientific notation
multiplication	A 512. Work problems involving positive integer exponents
Multiplication with scientific notation	
Exponents and division	
Dividing with scientific notation	
Chapter 7 An Introduction to Geometry	
Pairs of angles	G 301. Exhibit some knowledge of the angles associated with parallel lines
Angles and parallel lines	G 302. Compute the perimeter of polygons when all side lengths are given
Congruent figures	G 401. Use properties of parallel lines to find the measure of an angle
Similar figures	G 402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
Proving triangles similar	G 504. Recognize that real-world measurements are typically imprecise and that an appropriate level of precision is related to the measuring device and procedure
Angles and polygons	
Chapter 8 Transformations	
Translations	G 304. Locate points in the first quadrant
Reflections and symmetry	G 406. Locate points in the coordinate plane
	G 407. Translate points up, down, left, and right in the coordinate plane
Rotations	G 502. Count the number of lines of symmetry of a geometric figure

Transformations and congruence	~~G 504. Count the number of lines of symmetry of a geometric figure~~ G 512. Find the coordinates of a point rotated 180° around a given center point G 608. Find the coordinates of a point rotated 90° about the origin
More transformations and congruence	G 703. Use scale factors to determine the magnitude of a size change
Transformations and similarity	
Chapter 9 Geometry and Measurement	
Solids	G 405. Use geometric formulas when all necessary information is given
Volumes of prisms and cylinders	
Volumes of pyramids and cones	
Spheres	
Exploring similar solids	
Chapter 10 Data Analysis	
Scatter plots	S 402. Translate from one representation of data to another (e.g., a bar graph to a circle graph)
Analyzing scatter plots	S 505. Recognize that when data summaries are reported in the real world, results are often rounded and must be interpreted as having appropriate precision
Modeling data with lines	
Two-way tables	S 506. Recognize that when a statistical model is used, model values typically differ from actual values

8th Grade Math: Prealgebra

Chapter 1 Algebraic Expressions and Integers

1-1 Variables and Expressions	N 404. Understand absolute value in terms of distance
	N 603. Apply number properties involving positive/negative numbers
1-2 The Order of Operations	AF 302. Solve some routine two-step arithmetic problems
	AF 304. Apply a definition of an operation for whole numbers (e.g., a ◘ b = 3a – b)
1-3 Evaluating Expressions	AF 402. Perform straightforward word-to-symbol translation
	A 301. Substitute whole numbers for unknown quantities to evaluate expressions
1-4 Integers and Absolute Value	A 302. Solve one-step equations to get integer or decimal answers
	A 303. Combine like terms (e.g., 2x + 5x)
1-5 Adding Integers	A 401. Evaluate algebraic expressions by substituting integers for unknown quantities
1-6 Subtracting Integers	F 201. Extend a given pattern by a few terms for patterns that have a constant increase or decrease between terms
1-7 Inductive Reasoning	F 301. Extend a given pattern by a few terms for patterns that have a constant factor between terms
1-8 Look for a Pattern	G 304. Locate points in the first quadrant
1-9 Multiplying and Dividing Integers	G 406. Locate points in the coordinate plane
1-10 The Coordinate Plane	

Chapter 2 Solve One-Step Equations and Inequalities

2-1 Properties of Numbers	A 402. Add and subtract simple algebraic expressions
	A 403. Solve routine first-degree equations
2-2 The Distributive Property	
2-3 Simplifying Variable Expressions	
2-4 Variables and Equations	
2-5 Solving Equations by Adding or Subtracting	
2-6 Solving Equations by Multiplying or Dividing	
2-8 Inequalities and Their Graphs	
2-9 Solving Inequalities by Adding or Subtracting	
2-10 Solving Inequalities by Multiplying or Dividing	

Chapter 3 Decimals and Equations

3-1 Rounding and Estimating	N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor
3-2 Estimating Decimal Products and Quotients	S 701. Distinguish between mean, median, and mode for a list of numbers
3-3 Mean, Median, and Mode	
3-4 Using Formulas	
3-5 Solving Equations by Adding or Subtracting Decimals	
3-6 Solving Equations by Multiplying or Dividing Decimals	
3-7 Using the Metric System	
3-8 Simplify the Problem	

Chapter 4 Factors, Fractions, and Exponents

4-1 Divisibility Readiness	N 301. Recognize one-digit factors of a number
4-2 Exponents	N 302. Identify a digit's place value
4-3 Prime Factorization and Greatest Common Factor	N 303. Locate rational numbers on the number line
	N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor
4-4 Simplifying Fractions	N 402. Write positive powers of 10 by using exponents
4-5 Account for All Possibilities	N 503. Work with numerical factors
4-6 Rational Numbers	N 601. Apply number properties involving prime factorization
4-7 Exponents and Multiplication	N 602. Apply number properties involving even/odd numbers and factors/multiples
4-8 Exponents and Division	A 511. Work with scientific notation
	A 512. Work problems involving positive integer exponents
4-9 Scientific Notation	

Chapter 5 Operations With Fractions

5-1 Comparing and Ordering Fractions	N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor
5-2 Fractions and Decimals	N 501. Order fractions
	N 502. Find and use the least common multiple
5-3 Adding and Subtracting Fractions	
5-4 Multiplying and Dividing Fractions	
5-5 Using Customary Units of Measurement	
5-6 Working Backward	
5-7 Solving Equations by Adding or Subtracting Fractions	
5-8 Solving Equations by Multiplying Fractions	
5-9 Power of Products and Quotients	

Chapter 6 Ratios, Proportions, and Percents

6-1 Ratios and Unit Rates	AF 301. Solve routine one-step arithmetic problems using positive rational numbers, such as single-step percent
	AF 401. Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and estimating by using a given average value in place of actual values
6-2 Proportions	
6-3 Similar Figures and Scale Drawings	AF 502. Build functions and write expressions, equations, or 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)
6-4 Probability	G 703. Use scale factors to determine the magnitude of a size change
6-5 Fractions, Decimals, and Percents	
6-6 Proportions and Percents	
6-7 Percents and Equations	
6-8 Percent of Change	
6-9 Markup and Discount	
6-10 Make a Table	

Chapter 7 Solving Equations and Inequalities

7-1 Solving Two-Step Equations	A 405. Match simple inequalities with their graphs on the number line
	A 503. Solve first-degree inequalities when the method does not involve reversing the inequality sign
7-2 Solving Multi-Step Equations	A 602. Solve linear inequalities when the method involves reversing the inequality sign
7-3 Multi-Step Equations With Fractions and Decimals	A 603. Match linear inequalities with their graphs on the number line
7-4 Write an Equation	
7-5 Solving Equations With Variables on Both Sides	
7-6 Solving Two-Step Inequalities	
7-7 Transforming Formulas	
7-8 Simple and Compound Interest	

Chapter 8 Linear Functions and Graphing

8-1 Relations and Functions	AF 303. Relate a graph to a situation described qualitatively in terms of familiar properties such as before and after, increasing and decreasing, higher and lower
8-2 Equations With Two Variables	AF 403. Relate a graph to a situation described in terms of a starting value and an additional amount per unit (e.g., unit cost, weekly growth)
8-3 Slope and y-intercept	AF 503. Match linear equations with their graphs in the coordinate plane
8-4 Writing Rules for Linear Functions	A 406. Exhibit knowledge of slope
8-5 Scatter Plots	A 514. Determine the slope of a line from an equation
8-6 Solve by Graphing	A 604. Solve systems of two linear equations
8-7 Solving Systems of Linear Equations	G 510. Determine the slope of a line from points or a graph
8-8 Graphing Linear Inequalities	

Chapter 9 Spatial Thinking

9-1 Introduction to Geometry: Points, Lines, and Planes	G 301. Exhibit some knowledge of the angles associated with parallel lines
	G 302. Compute the perimeter of polygons when all side lengths are given
	G 401. Use properties of parallel lines to find the measure of an angle
9-2 Angle Relationships and Parallel Lines	G 402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
	G 407. Translate points up, down, left, and right in the coordinate plane
9-3 Classifying Polygons	G 502. Count the number of lines of symmetry of a geometric figure
9-4 Draw a Diagram	G 504. Recognize that real-world measurements are typically imprecise and that an appropriate level of precision is related to the

9-5 Congruence	G 504. Recognize that real-world measurements are typically imprecise and that an appropriate level of precision is related to the measuring device and procedure
9-6 Circles	G 512. Find the coordinates of a point rotated 180° around a given center point
9-7 Constructions	G 608. Find the coordinates of a point rotated 90° about the origin
9-8 Translations	
9-9 Symmetry and Reflections	
9-10 Rotations	

Chapter 10 Area and Volume

10-1 Area: Parallelogram	G 303. Compute the area of rectangles when whole number dimensions are given
	G 403. Compute the area and perimeter of triangles and rectangles in simple problems
10-2 Area: Triangles and Trapezoids	G 405. Use geometric formulas when all necessary information is given
10-3 Area: Circles	G 506. Compute the area of triangles and rectangles when one or more additional simple steps are required
10-4 Space Figures	G 507. Compute the area and circumference of circles after identifying necessary information
10-5 Surface Area: Prisms and Cylinders	
10-6 Surface Area: Pyramids, Cones, and Spheres	
10-7 Volume: Prisms and Cylinders	
10-8 Make a Model	
10-9 Volume: Pyramids, Cones, and Spheres	

Chapter 11 Right Triangles in Algebra

11-1 Square Roots and Irrational Numbers	N 403. Comprehend the concept of length on the number line, and find the distance between two points
	N 405. Find the distance in the coordinate plane between two points with the same x-coordinate or y-coordinate
11-2 The Pythagorean Theorem	N 604. Apply the facts that π is irrational and that the square root of an integer is rational only if that integer is a perfect square
	A 509. Work with squares and square roots of numbers
11-3 Distance and Midpoint Formulas	G 404. Find the length of the hypotenuse of a right triangle when only very simple computation is involved (e.g., 3-4-5 and 6-8-10 triangles)
11-4 Write a Proportion	G 405. Use geometric formulas when all necessary information is given
11-5 Special Right Triangles	G 508. Given the length of two sides of a right triangle, find the third when the lengths are Pythagorean triples
11-6 Sine, Cosine, and Tangent Ratios	G 509. Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths
	G 602. Use the Pythagorean theorem
11-7 Angles of Elevation and Depression	

Chapter 12 Data Analysis and Probability

12-1 Frequency Tables and Line Plots	S 303. Read basic tables and charts
	S 304. Extract relevant data from a basic table or chart and use the data in a computation
12-2 Box-and-Whisker Plots	S 402. Translate from one representation of data to another (e.g., a bar graph to a circle graph)
12-3 Using Graphs to Persuade	S 403. Determine the probability of a simple event
	S 404. Describe events as combinations of other events (e.g., using and, or, and not)
12-4 Counting Outcomes and Theoretical Probability	S 405. Exhibit knowledge of simple counting techniques
	S 501. Calculate the average given the frequency counts of all the data values
	S 502. Manipulate data from tables and charts
	S 503. Compute straightforward probabilities for common situations
12-5 Independent and Dependent Events	S 504. Use Venn diagrams in counting
12-6 Permutations and Combinations	S 505. Recognize that when data summaries are reported in the real world, results are often rounded and must be interpreted as having appropriate precision
12-7 Experimental Probability	S 506. Recognize that when a statistical model is used, model values typically differ from actual values
12-8 Random Samples and Surveys	S 602. Interpret and use information from tables and charts, including two-way frequency tables
	S 603. Apply counting techniques
12-9 Simulate the Problem	S 606. Recognize the concept of independence expressed in real-world contexts
	S 703. Understand the role of randomization in surveys, experiments, and observational studies

Chapter 13 Nonlinear Functions and Polynomials

13-1 Patterns and Sequences	A 404. Multiply two binomials
	A 505. Add, subtract, and multiply polynomials
13-2 Graphing Nonlinear Functions	F 201. Extend a given pattern by a few terms for patterns that have a constant increase or decrease between terms
	F 301. Extend a given pattern by a few terms for patterns that have a constant factor between terms
13-3 Exponential Growth and Decay	
13-4 Polynomials	
13-5 Adding and Subtracting Polynomials	
13-6 Multiplying a Polynomial by a Monomial	
13-7 Multiplying Binomials	
13-8 Use Multiple Strategies	

8th / 9th Grade Math: Algebra 1

Chapter 1 Expressions, Equations, and Functions	
Variables and Expressions	N 603. Apply number properties involving positive/negative numbers
	AF 302. Solve some routine two-step arithmetic problems
Order of Operations	AF 303. Relate a graph to a situation described qualitatively in terms of familiar properties such as before and after, increasing and decreasing, higher and lower
Properties of Numbers	
The Distributive Property	AF 304. Apply a definition of an operation for whole numbers (e.g., a ◨ b = 3a – b)
Equations	AF 402. Perform straightforward word-to-symbol translations
Relations	A 301. Substitute whole numbers for unknown quantities to evaluate expressions
Functions	A 401. Evaluate algebraic expressions by substituting integers for unknown quantities
Interpreting Graphs of Functions	F 401. Evaluate linear and quadratic functions, expressed in function notation, at integer values

Chapter 2 Linear Equations	
Writing Equations	N 404. Understand absolute value in terms of distance
Solving One-Step Equations	AF 301. Solve routine one-step arithmetic problems using positive rational numbers, such as single-step percent
Solving Multi-Step Equations	AF 401. Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and estimating by using a given average value in place of actual values
Solving Equations with the Variable on Each Side	AF 502. Build functions and write expressions, equations, or 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)
	AF 503. Match linear equations with their graphs in the coordinate plane
Solving Equations Involving Absolute Value	A 302. Solve one-step equations to get integer or decimal answers
	A 403. Solve routine first-degree equations
Ratios and Proportions	A 501. Recognize that when numerical quantities are reported in real-world contexts, the numbers are often rounded
Percent of Change	A 502. Solve real-world problems by using first-degree equations
Literal Equations and Dimensional Analysis	A 606. Solve absolute value equations
Weighted Averages	S 601. Calculate or use a weighted average

Chapter 3 Linear Functions	
Graphing Linear Equations	A 406. Exhibit knowledge of slope
	G 304. Locate points in the first quadrant
Solving Linear Equations by Graphing	G 406. Locate points in the coordinate plane
	G 510. Determine the slope of a line from points or a graph
Rate of Change and Slope	
Direct Variation	
Arithmetic Sequences as Linear Functions	
Proportional and Nonproportional Relationships	

Chapter 4 Equations of Linear Functions	
Graphing Equations in Slope-Intercept Form	AF 403. Relate a graph to a situation described in terms of a starting value and an additional amount per unit (e.g., unit cost, weekly growth)
Writing Equations in Slope-Intercept Form	A 514. Determine the slope of a line from an equation
Writing Equations in Point-Slope Form	G 606. Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
	S 506. Recognize that when a statistical model is used, model values typically differ from actual values
Parallel and Perpendicular Lines	
Scatter Plots and Lines of Fit	
Regression and Median-Fit Lines	
Inverse Linear Functions	

Chapter 5 Linear Inequalities	
Solving Inequalities by Addition and Subtraction	A 405. Match simple inequalities with their graphs on the number line
	A 503. Solve first-degree inequalities when the method does not involve reversing the inequality sign
	A 504. Match compound inequalities with their graphs on the number line
Solving Inequalities by Multiplication and Division	A 603. Match linear inequalities with their graphs on the number line
	A 602. Solve linear inequalities when the method involves reversing the inequality sign
Solving Multi-Step Inequalities	A 701. Solve simple absolute value inequalities
Solving Compound Inequalities	
Inequalities Involving Absolute Value	
Graphing Inequalities in Two Variables	

Chapter 6 Solving Systems of Linear Equations	

Graphing Systems of Equations	A 604. Solve systems of two linear equations
Substitution	
Elimination Using Addition and Subtraction	
Elimination Using Multipcation	
Applying Systems of Linear Equations	
Systems of Inequalities	

Chapter 7 Exponents and Exponential Functions

Multiplication Properties of Exponents	N 605. Apply properties of rational exponents
Division Properties of Exponents	A 511. Work with scientific notation
Rational Exponents	A 512. Work problems involving positive integer exponents
Scientific Notation	F 301. Extend a given pattern by a few terms for patterns that have a constant factor between terms
Exponential Functions	
Growth and Decay	
Geometric Sequences as Exponential Functions	
Recursive Formulas	

Chapter 8 Quadratic Expressions and Equations

Adding and Subtracting Polynomials	N 402. Write positive powers of 10 by using exponents
Multiplying a Polynomial by a Monomial	A 303. Combine like terms (e.g., 2x + 5x)
	A 402. Add and subtract simple algebraic expressions
	A 404. Multiply two binomials
Multiplying Polynomials	A 505. Add, subtract, and multiply polynomials
Special Products	A 507. Solve quadratic equations in the form $(x + a)(x + b) = 0$, where a and b are numbers or variables
Using the Distributive Property	A 508. Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)
Solving Quadratics with a = 1	A 605. Solve quadratic equations
Solving Quadratics with a is not equal to 1	
Differences of Squares	
Perfect Squares	

Chapter 9 Quadratic Functions and Equations

Graphing Quadratic Functions	A 506. Identify solutions to simple quadratic equations
Solving Quadratic Equations by Graphing	A 601. Manipulate expressions and equations
	A 605. Solve quadratic equations
Transformations of Quadratic Functions	G 609. Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
Solving Quadratic Equations by Completing the Square	
Solving Quadratic Equations by Using the Quadratic Formula	
Analyzing Functions with Successive Differences and Ratios	
Special Functions	

Chapter 10 Radical Expressions and Triangles

Square Root Functions	N 503. Work with numerical factors
Simplifying Radical Expressions	N 601. Apply number properties involving prime factorization
Operations with Radical Expressions	N 604. Apply the facts that π is irrational and that the square root of an integer is rational only if that integer is a perfect square
	N 703. Apply properties of real numbers and the real number system, including properties of irrational numbers
Radical Equations	A 509. Work with squares and square roots of numbers
The Pythagorean Theorem	G 508. Given the length of two sides of a right triangle, find the third when the lengths are Pythagorean triples
	G 509. Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths
Trigonometric Ratios	G 602. Use the Pythagorean theorem

Chapter 11 Rational Expressions and Equations

Inverse Variation	N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor
Rational Functions	
Simplifying Rational Expressions	N 501. Order fractions
	N 502. Find and use the least common multiple
Multiplying and Dividing Rational Expressions	N 602. Apply number properties involving even/odd numbers and factors/multiples
	N 702. Apply properties of rational numbers and the rational number system
Dividing Polynomials	A 513. Determine when an expression is undefined

Adding and Subtracting Rational Expressions	A 513. Determine when an expression is undefined
Mixed Expressions and Complex Fractions	
Rational Equations	
Chapter 12 Statistics and Probability	
Samples and Studies	S 301. Calculate the average of a list of numbers
Statistics and Parameters	S 302. Calculate the average given the number of data values and the sum of the data values
Distributions of Data	S 303. Read basic tables and charts
Comparing Sets of Data	S 304. Extract relevant data from a basic table or chart and use the data in a computation
Simulations	S 305. Use the relationship between the probability of an event and the probability of its complement
Permutations and Combinations	S 403. Determine the probability of a simple event
	S 404. Describe events as combinations of other events (e.g., using and, or, and not)
Probability of Compound Events	S 405. Exhibit knowledge of simple counting techniques
Probability Distributions	S 503. Compute straightforward probabilities for common situations

9th Math: Geometry & Intro to Algebra 2	
Chapter 1 Tools of Geometry	
Points, Lines and Planes	N 403. Comprehend the concept of length on the number line, and find the distance between two points
Linear Measure	N 405. Find the distance in the coordinate plane between two points with the same x-coordinate or y-coordinate
Distance and Midpoints	G 303. Compute the area of rectangles when whole number dimensions are given
Angle Measures and relationships	G 304. Locate points in the first quadrant
	G 402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
Two-Dimensional Figures	G 405. Use geometric formulas when all necessary information is given
Three-Dimensional Figures	G 406. Locate points in the coordinate plane
	~~G 501. Use several angle properties to find an unknown angle measure~~
Chapter 2 Reasoning and Proof	
Inductive Reasoning and Conjecture	G 704. Analyze and draw conclusions based on a set of conditions
Logic	
Conditional Statements	
Deductive Reasoning	
Postulates and Paragraph Proofs	
Algebraic Proof	
Proving Segment Relationships	
Chapter 3 Parallel and Perpendicular Lines	
Parallel lines and transversals	AF 503. Match linear equations with their graphs in the coordinate plane
	A 406. Exhibit knowledge of slope
Angles and parallel lines	A 514. Determine the slope of a line from an equation
Slopes of lines	G 301. Exhibit some knowledge of the angles associated with parallel lines
Equations of lines	G 401. Use properties of parallel lines to find the measure of an angle
Proving Lines Parallel	G 405. Use geometric formulas when all necessary information is given
Perpendiculars and distance	G 501. Use several angle properties to find an unknown angle measure
	~~G 510. Determine the slope of a line from points or a graph~~
Chapter 4 Congruent Triangles	
Classifying Triangles	G 501. Use several angle properties to find an unknown angle measure
Angles of Triangles	G 503. Use symmetry of isosceles triangles to find unknown side lengths or angle measures
Congruent triangles using SAS, SSS, HL, AAS and ASA	G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
	G 704. Analyze and draw conclusions based on a set of conditions

Isosceles and Equilateral Triangles	
Congruence Transformations	
Triangles and Coordinate Proof	
Chapter 5 Relationships in Triangles	
Bisectors, medians and altitudes	G 501. Use several angle properties to find an unknown angle measure G 704. Analyze and draw conclusions based on a set of conditions
Inequalities involving triangles	
Indirect Proof	
Chapter 6 Quadrilaterals	
Angles of polygons	G 501. Use several angle properties to find an unknown angle measure G 704. Analyze and draw conclusions based on a set of conditions
Parallelograms	
Tests for Parallelograms	
Rectangles	
Rhombi and Squares	
Trapezoids and Kites	
Chapter 7 Proportions and Similarity	
Ratios and Proportions	AF 601. Solve word problems containing several rates, proportions, or percentages
Similar polygons	G 405. Use geometric formulas when all necessary information is given
Similar triangles	G 501. Use several angle properties to find an unknown angle measure
Parallel Lines and Proportional Parts	G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
Parts of Similar Triangles	G 703. Use scale factors to determine the magnitude of a size change
Similarity Transformations	G 704. Analyze and draw conclusions based on a set of conditions
Scale Drawings and Models	
Chapter 8 Right Triangles and Trigonometry	
Geometric means	N 601. Apply number properties involving prime factorization
The Pythagorean Theorem and Its Converse	G 404. Find the length of the hypotenuse of a right triangle when only very simple computation is involved (e.g., 3-4-5 and 6-8-10 triangles) G 405. Use geometric formulas when all necessary information is given G 501. Use several angle properties to find an unknown angle measure
Special right triangles	G 508. Given the length of two sides of a right triangle, find the third when the lengths are Pythagorean triples
Angles of elevation and depression	G 509. Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths G 602. Use the Pythagorean theorem
Basic trigonometry	G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles

Law of Sines and Law of Cosines	G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
	G 604. Apply basic trigonometric ratios to solve right-triangle problems
Vectors	G 704. Analyze and draw conclusions based on a set of conditions

Chapter 9 Transformations	
Reflections	G 407. Translate points up, down, left, and right in the coordinate plane
Translations	G 502. Count the number of lines of symmetry of a geometric figure
Rotations	origin
Compositions of	G 512. Find the coordinates of a point rotated 180° around a given center point
Transformations	G 607. Find the coordinates of a point reflected across a vertical or horizontal line or across y = x
Symmetry	G 608. Find the coordinates of a point rotated 90° about the origin
Dilations	

Chapter 10 Circles and Circumference	
Circles and circumference	AF 603. Interpret and use information from graphs in the coordinate plane
Measuring Angles and Arcs	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	G 405. Use geometric formulas when all necessary information is given
Arcs and chords	G 501. Use several angle properties to find an unknown angle measure
Inscribed angles	G 507. Compute the area and circumference of circles after identifying necessary information
Tangents	G 609. Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
Secants, Tangents, and Angle Measures	G 701. Use relationships among angles, arcs, and distances in a circle
Special Segments in a Circle	
Equations of Circles	

Chapter 11 Areas of Polygons and Circles	
Areas of parallelograms, triangles, trapezoids and rhombi	G 302. Compute the perimeter of polygons when all side lengths are given
	G 403. Compute the area and perimeter of triangles and rectangles in simple problems
	G 405. Use geometric formulas when all necessary information is given
Areas of Circles and Sectors	G 505. Compute the perimeter of simple composite geometric figures with unknown side lengths
	G 506. Compute the area of triangles and rectangles when one or more additional simple steps are required
Areas of regular polygons and Composite Figures	G 702. Compute the area of composite geometric figures when planning and/or visualization is required
Areas of Similar Figures	

Chapter 12 Extending Surface Area and Volume	
Representations of Three-Dimensional Figures	G 405. Use geometric formulas when all necessary information is given
	G 601. Use relationships involving area, perimeter, and volume of geometric figures to compute another measure (e.g., surface area for a cube of a
Surface areas of prisms, cylinders, pyramids, cones and spheres	given volume and simple geometric probability)
	G 705. Solve multistep geometry problems that involve integrating concepts, planning, and/or visualization

	G 705. Solve multistep geometry problems that involve integrating concepts, planning, and/or visualization
Volumes of prisms, cylinders, pyramids, cones and spheres	
Spherical Geometry	
Congruent and Similar Solids	

Chapter 13 Probability and Measurement

Representing Sample Spaces	G 601. Use relationships involving area, perimeter, and volume of geometric figures to compute another measure (e.g., surface area for a cube of a given volume and simple geometric probability)
Probability with Permutations and Combinations	G 705. Solve multistep geometry problems that involve integrating concepts, planning, and/or visualization
Geometric Probability	S 305. Use the relationship between the probability of an event and the probability of its complement
Simulations	S 403. Determine the probability of a simple event
Probabilities of Independent and Dependent Events	S 404. Describe events as combinations of other events (e.g., using and, or, and not)
	S 405. Exhibit knowledge of simple counting techniques
	S 606. Recognize the concept of independence expressed in real-world contexts
Probabilities of Mutually Exclusive Events	

Intro to Algebra 2

Algebra Essentials	N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor
	N 403. Comprehend the concept of length on the number line, and find the distance between two points
	N 501. Order fractions
	N 603. Apply number properties involving positive/negative numbers
	N 604. Apply the facts that π is irrational and that the square root of an integer is rational only if that integer is a perfect square
	N 701. Analyze and draw conclusions based on number concepts
	N 702. Apply properties of rational numbers and the rational number system
	N 703. Apply properties of real numbers and the real number system, including properties of irrational numbers
	AF 402. Perform straightforward word-to-symbol translations
	A 401. Evaluate algebraic expressions by substituting integers for unknown quantities
	A 509. Work with squares and square roots of numbers
	A 513. Determine when an expression is undefined

Polynomials and Synthetic Division	N 402. Write positive powers of 10 by using exponents
	N 503. Work with numerical factors
	N 602. Apply number properties involving even/odd numbers and factors/multiples
	A 402. Add and subtract simple algebraic expressions
	A 404. Multiply two binomials
	A 505. Add, subtract, and multiply polynomials
	A 508. Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)
	A 512. Work problems involving positive integer exponents
	A 601. Manipulate expressions and equations
Rational Expressions	N 502. Find and use the least common multiple
	F 508. Find the domain of polynomial functions and rational functions
Solving Equations	N 404. Understand absolute value in terms of distance
	A 403. Solve routine first-degree equations
	A 502. Solve real-world problems by using first-degree equations
	A 506. Identify solutions to simple quadratic equations
	A 507. Solve quadratic equations in the form $(x + a)(x + b) = 0$, where a and b are numbers or variables
	A 601. Manipulate expressions and equations
	A 605. Solve quadratic equations
	A 606. Solve absolute value equations

10th Grade Math: Algebra 2
Chapter 1 Equations and Inequalities

Expressions and Formulas	AF 402. Perform straightforward word-to-symbol translations
	AF 501. Solve multistep arithmetic problems that involve planning or converting common derived units of measure (e.g., feet per second to miles per hour)
	A 401. Evaluate algebraic expressions by substituting integers for unknown quantities
Properties of Real Numbers	N 603. Apply number properties involving positive/negative numbers
	N 604. Apply the facts that π is irrational and that the square root of an integer is rational only if that integer is a perfect square
	N 701. Analyze and draw conclusions based on number concepts
Solving Equations	A 403. Solve routine first-degree equations
	A 502. Solve real-world problems by using first-degree equations
Solving Absolute Value Equations	N 404. Understand absolute value in terms of distance
	A 606. Solve absolute value equations
Solving Inequalities	A 405. Match simple inequalities with their graphs on the number line
	A 503. Solve first-degree inequalities when the method does not involve reversing the inequality sign
	A 602. Solve linear inequalities when the method involves reversing the inequality sign
Solving Compound and Absolute Value Inequalities	A 504. Match compound inequalities with their graphs on the number line
	A 602. Solve linear inequalities when the method involves reversing the inequality sign
	A 701. Solve simple absolute value inequalities

Chapter 2 Linear Relations and Functions

Relations and Functions	F 503. Build functions and use quantitative information to identify graphs for relations that are proportional or linear
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Linear Relations and Functions	AF 403. Relate a graph to a situation described in terms of a starting value and an additional amount per unit (e.g., unit cost, weekly growth)
	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	F 401. Evaluate linear and quadratic functions, expressed in function notation, at integer values
Rate of Change and Slope	A 406. Exhibit knowledge of slope
	A 514. Determine the slope of a line from an equation
	F 601. Relate a graph to a situation described qualitatively in terms of faster change or slower change
	G 510. Determine the slope of a line from points or a graph
Writing Linear Equations	AF 503. Match linear equations with their graphs in the coordinate plane
	G 606. Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point
Special Functions	
Parent Functions and Transformations	AF 604. Given an equation or function, find an equation or function whose graph is a translation by a specified amount up or down
	AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
	AF 706. Given an equation or function, find an equation or function whose graph is a translation by specified amounts in the horizontal and vertical directions
	G 407. Translate points up, down, left, and right in the coordinate plane

Graphing Linear and Absolute Value Inequalities	A 603. Match linear inequalities with their graphs on the number line
Chapter 3 Systems of Equations and Inequalities	
Solving Systems of Equations	A 604. Solve systems of two linear equations
Solving Systems of Inequalities by Graphing	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Optimization with Linear Programming	F 511. Use function notation for simple functions of two variables
Systems of Equations in Three Variables	
Operations with Matrices	N 406. Add two matrices that have whole number entries N 505. Add and subtract matrices that have integer entries
Multiplying Matrices	N 607. Use relations involving addition, subtraction, and scalar multiplication of vectors and of matrices N 705. Multiply matrices
Solving Systems of Equations Using Cramer's Rule	N 706. Apply properties of matrices and properties of matrices as a number system
Solving Systems of Equations Using Inverse Matrices	N 706. Apply properties of matrices and properties of matrices as a number system
Chapter 4 Quadratic Functions and Relations	
Graphing Quadratic Functions	AF 603. Interpret and use information from graphs in the coordinate plane AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane A 506. Identify solutions to simple quadratic equations F 401. Evaluate linear and quadratic functions, expressed in function notation, at integer values
Solving Quadratic Equations by Graphing	A 506. Identify solutions to simple quadratic equations AF 603. Interpret and use information from graphs in the coordinate plane AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Solving Quadratic Equations by Factoring	N 503. Work with numerical factors N 602. Apply number properties involving even/odd numbers and factors/multiples A 506. Identify solutions to simple quadratic equations A 507. Solve quadratic equations in the form (x + a)(x + b) = 0, where a and b are numbers or variables A 508. Factor simple quadratics (e.g., the difference of squares and perfect square trinomials) A 601. Manipulate expressions and equations A 605. Solve quadratic equations
Complex Numbers	N 504. Exhibit some knowledge of the complex numbers N 606. Multiply two complex numbers N 704. Apply properties of complex numbers and the complex number system
Completing the Square	A 601. Manipulate expressions and equations
The Quadratic Formula and the Discriminant	A 605. Solve quadratic equations

Transformations of Quadratic Graphs	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as y = ax² + c
Quadratic Inequalities	A 702. Match simple quadratic inequalities with their graphs on the number line
Chapter 5 Polynomials and Polynomial Functions	
Operations with Polynomials	A 402. Add and subtract simple algebraic expressions
	A 404. Multiply two binomials
	A 505. Add, subtract, and multiply polynomials
	A 512. Work problems involving positive integer exponents
Dividing Polynomials	
Polynomial Functions	F 501. Evaluate polynomial functions, expressed in function notation, at integer values
Analyze Graphs of Polynomial Functions	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as y = ax² + c
	F 509. Find the range of polynomial functions
Solving Polynomial Equations	
The Remainder and Factor Theorems	A 703. Apply the remainder theorem for polynomials, that P(a) is the remainder when P(x) is divided by (x − a)
Roots and Zeros	
Rational Zero Theorem	
Chapter 6 Inverses and Radical Functions and Relations	
Operations on Functions	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	F 505. Understand the concept of a function as having a well-defined output value at each valid input value
	F 506. Understand the concept of domain and range in terms of valid input and output, and in terms of function graphs
	F 604. Evaluate composite functions at integer values
	F 708. Write an expression for the composite of two simple functions
Inverse Functions and Relations	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
Square Root Functions and Inequalities	N 703. Apply properties of real numbers and the real number system, including properties of irrational numbers
	A 509. Work with squares and square roots of numbers
nth Roots	N 601. Apply number properties involving prime factorization
	N 703. Apply properties of real numbers and the real number system, including properties of irrational numbers
	A 510. Work with cubes and cube roots of numbers
Operations with Radical Expressions	N 703. Apply properties of real numbers and the real number system, including properties of irrational numbers
Rational Exponents	N 605. Apply properties of rational exponents
Solving Radical Equations and Inequalities	N 703. Apply properties of real numbers and the real number system, including properties of irrational numbers
Chapter 7 Exponential and Logarithmic Functions and Relations	

Graphing Exponential Functions	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Solving Exponential Equations and Inequalities	
Logarithms and Logarithmic Functions	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	F 707. Exhibit knowledge of logarithms
Solving Logarithmic Equations and Inequalities	F 707. Exhibit knowledge of logarithms
Properties of Logarithms	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	F 707. Exhibit knowledge of logarithms
Common Logarithms	F 707. Exhibit knowledge of logarithms
Base e and Natural Logarithms	F 707. Exhibit knowledge of logarithms
Using Exponential and Logarithmic Functions	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	A 501. Recognize that when numerical quantities are reported in real-world contexts, the numbers are often rounded
	F 702. Build functions for relations that are exponential
	F 707. Exhibit knowledge of logarithms
Chapter 8 Rational Functions and Relations	
Multiplying and Dividing Rational Expressions	N 702. Apply properties of rational numbers and the rational number system
Adding and Subtracting Rational Expressions	N 502. Find and use the least common multiple
	N 702. Apply properties of rational numbers and the rational number system
Graphing Reciprocal Functions	N 702. Apply properties of rational numbers and the rational number system
	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	A 513. Determine when an expression is undefined
	F 508. Find the domain of polynomial functions and rational functions
	F 510. Find where a rational function's graph has a vertical asymptote
Graphing Rational Functions	N 702. Apply properties of rational numbers and the rational number system
	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	A 513. Determine when an expression is undefined
	F 510. Find where a rational function's graph has a vertical asymptote
Variation Functions	N 702. Apply properties of rational numbers and the rational number system
	F 602. Build functions for relations that are inversely proportional
Solving Rational Equations and Inequalities	N 702. Apply properties of rational numbers and the rational number system
	AF 601. Solve word problems containing several rates, proportions, or percentages
Chapter 9 Conic Sections	

Midpoint and Distance Formulas	N 403. Comprehend the concept of length on the number line, and find the distance between two points
	N 405. Find the distance in the coordinate plane between two points with the same x-coordinate or y-coordinate
	G 406. Locate points in the coordinate plane
	G 511. Find the midpoint of a line segment
	G 605. Use the distance formula
Parabolas	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
	G 609. Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
Circles	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	G 609. Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
Ellipses	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Hyperbolas	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Identifying Conic Sections	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Solving Linear-Nonlinear Systems	
Chapter 10 Sequences and Series	
Sequences as Functions	
Arithmetic Sequences and Series	
Geometric Sequences and Series	F 703. Exhibit knowledge of geometric sequences
Infinite Geometric Series	
Recursion and Iteration	F 502. Find the next term in a sequence described recursively
	F 603. Find a recursive expression for the general term in a sequence described recursively
The Binomial Theorem	
Proof by Mathematical Induction	
Chapter 11 Probability and Statistics	
Designing a Study	S 703. Understand the role of randomization in surveys, experiments, and observational studies
Distributions of Data	
Probability Distributions	
The Binomial Distribution	
The Normal Distribution	
Confidence Intervals and Hypothesis Testing	
Chapter 12 Trigonometric Functions	

Trigonometric Functions in Right Triangles	G 509. Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths
Angles and Angle Measure	
Trigonometric Functions of General Angles	F 704. Exhibit knowledge of unit circle trigonometry
Law of Sines	
Law of Cosines	
Graphing Trigonometric Functions	F 705. Match graphs of basic trigonometric functions with their equations
Translations of Trigonometric Graphs	
Inverse Trigonometric Functions	
Chapter 13 Trigonometric Indentities and Equations	
Trigonometric Identities	F 706. Use trigonometric concepts and basic identities to solve problems
Verifying Trigonometric Identities	F 706. Use trigonometric concepts and basic identities to solve problems
Sum and Difference of Angles Identities	
Double-Angle and Half-Angle Identities	
Solving Trigonometric Equations	

10th Grade Math: Precalculus	
Lesson 1 (Part I): Algebra and Geometry Essentials	N 501. Order fractions N 603. Apply number properties involving positive/negative numbers N 604. Apply the facts that π is irrational and that the square root of an integer is rational only if that integer is a perfect square N 701. Analyze and draw conclusions based on number concepts N 702. Apply properties of rational numbers and the rational number system N 703. Apply properties of real numbers and the real number system, including properties of irrational numbers AF 402. Perform straightforward word-to-symbol translations A 401. Evaluate algebraic expressions by substituting integers for unknown quantities A 509. Work with squares and square roots of numbers A 513. Determine when an expression is undefined
Lesson 1 (Part II): Algebra and Geometry Essentials	G 403. Compute the area and perimeter of triangles and rectangles in simple problems G 404. Find the length of the hypotenuse of a right triangle when only very simple computation is involved (e.g., 3-4-5 and 6-8-10 triangles) G 405. Use geometric formulas when all necessary information is given G 505. Compute the perimeter of simple composite geometric figures with unknown side lengths G 506. Compute the area of triangles and rectangles when one or more additional simple steps are required G 507. Compute the area and circumference of circles after identifying necessary information G 508. Given the length of two sides of a right triangle, find the third when the lengths are Pythagorean triples G 602. Use the Pythagorean theorem G 704. Analyze and draw conclusions based on a set of conditions
Lesson 2: Distance and Midpoint Formulas	G 403. Compute the area and perimeter of triangles and rectangles in simple problems G 405. Use geometric formulas when all necessary information is given G 511. Find the midpoint of a line segment G 605. Use the distance formula G 704. Analyze and draw conclusions based on a set of conditions
Lesson 3: nth Roots; Rational Exponents	N 601. Apply number properties involving prime factorization N 605. Apply properties of rational exponents A 510. Work with cubes and cube roots of numbers

Lesson 4: Functions, Composite Functions, One-to-one Functions; Inverse Functions	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane F 401. Evaluate linear and quadratic functions, expressed in function notation, at integer values F 501. Evaluate polynomial functions, expressed in function notation, at integer values F 503. Build functions and use quantitative information to identify graphs for relations that are proportional or linear F 505. Understand the concept of a function as having a well-defined output value at each valid input value F 506. Understand the concept of domain and range in terms of valid input and output, and in terms of function graphs F 507. Interpret statements that use function notation in terms of their context F 604. Evaluate composite functions at integer values F 708. Write an expression for the composite of two simple functions G 406. Locate points in the coordinate plane
Lesson 5: The Graph and Properties of a Function	F 504. Attend to the difference between a function modeling a situation and the reality of the situation
Lesson 6: Library of Functions and their Transformations; Piecewise-defined Functions	AF 603. Interpret and use information from graphs in the coordinate plane AF 604. Given an equation or function, find an equation or function whose graph is a translation by a specified amount up or down AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as y = ax² + c AF 706. Given an equation or function, find an equation or function whose graph is a translation by specified amounts in the horizontal and vertical directions G 407. Translate points up, down, left, and right in the coordinate plane G 607. Find the coordinates of a point reflected across a vertical or horizontal line or across y = x
Lesson 7: Lines and Linear Functions	AF 403. Relate a graph to a situation described in terms of a starting value and an additional amount per unit (e.g., unit cost, weekly growth) AF 503. Match linear equations with their graphs in the coordinate plane A 406. Exhibit knowledge of slope A 514. Determine the slope of a line from an equation F 601. Relate a graph to a situation described qualitatively in terms of faster change or slower change G 510. Determine the slope of a line from points or a graph G 606. Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point

Lesson 8: Polynomials and Synthetic Division	N 503. Work with numerical factors
	N 602. Apply number properties involving even/odd numbers and factors/multiples
	A 402. Add and subtract simple algebraic expressions
	A 404. Multiply two binomials
	A 505. Add, subtract, and multiply polynomials
	A 508. Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)
	A 512. Work problems involving positive integer exponents
	A 601. Manipulate expressions and equations
	A 703. Apply the remainder theorem for polynomials, that P(a) is the remainder when P(x) is divided by (x – a)
Lesson 9: Polynomial Functions	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
	F 508. Find the domain of polynomial functions and rational functions
	F 509. Find the range of polynomial functions
	F 701. Compare actual values and the values of a modeling function to judge model fit and compare models
	G 609. Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
Lesson 10: Rational Expressions	N 502. Find and use the least common multiple
	F 508. Find the domain of polynomial functions and rational functions
Lesson 11: Properties and Graphs of Rational Functions	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	A 513. Determine when an expression is undefined
	F 508. Find the domain of polynomial functions and rational functions
	F 510. Find where a rational function's graph has a vertical asymptote
	F 602. Build functions for relations that are inversely proportional
Lesson 12: Solving Equations	A 403. Solve routine first-degree equations
	A 502. Solve real-world problems by using first-degree equations
	A 506. Identify solutions to simple quadratic equations
	A 507. Solve quadratic equations in the form $(x + a)(x + b) = 0$, where a and b are numbers or variables
	A 606. Solve absolute value equations
	A 601. Manipulate expressions and equations
	A 605. Solve quadratic equations
Lesson 13: Matrix Algebra and Determinants	N 406. Add two matrices that have whole number entries
	N 505. Add and subtract matrices that have integer entries
	N 607. Use relations involving addition, subtraction, and scalar multiplication of vectors and of matrices
	N 705. Multiply matrices
	N 706. Apply properties of matrices and properties of matrices as a number system

Lesson 14: Systems of Linear Equations: Substitution and Elimination, Matrices	A 604. Solve systems of two linear equations
Lesson 15: Interval Notation; Solving Inequalities	A 405. Match simple inequalities with their graphs on the number line A 503. Solve first-degree inequalities when the method does not involve reversing the inequality sign A 504. Match compound inequalities with their graphs on the number line A 602. Solve linear inequalities when the method involves reversing the inequality sign A 603. Match linear inequalities with their graphs on the number line A 701. Solve simple absolute value inequalities
Lesson 16: Systems of Inequalities and Linear Programming	AF 603. Interpret and use information from graphs in the coordinate plane AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane A 702. Match simple quadratic inequalities with their graphs on the number line F 511. Use function notation for simple functions of two variables
Lesson 17: Conics	
Lesson 18: Circles	AF 603. Interpret and use information from graphs in the coordinate plane AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane G 609. Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
Lesson 19: The Ellipse	AF 603. Interpret and use information from graphs in the coordinate plane AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Lesson 20: The Hyperbola	AF 603. Interpret and use information from graphs in the coordinate plane AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Lesson 21: Systems of Nonlinear Equations	AF 603. Interpret and use information from graphs in the coordinate plane AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Lesson 22: Problem Solving	AF 501. Solve multistep arithmetic problems that involve planning or converting common derived units of measure (e.g., feet per second to miles per hour) AF 502. Build functions and write expressions, equations, or 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) AF 601. Solve word problems containing several rates, proportions, or percentages AF 602. Build functions and write expressions, equations, and inequalities for common algebra settings (e.g., distance to a point on a curve and profit for variable cost and demand) AF 701. Solve complex arithmetic problems involving percent of increase or decrease or requiring integration of several concepts (e.g., using several ratios, comparing percentages, or comparing averages) AF 702. Build functions and write expressions, equations, and inequalities when the process requires planning and/or strategic manipulation AF 703. Analyze and draw conclusions based on properties of algebra and/or functions A 501. Recognize that when numerical quantities are reported in real-world contexts, the numbers are often rounded

Lesson	Standards
Lesson 23: Exponential and Logarithmic Functions	AF 603. Interpret and use information from graphs in the coordinate plane AF 703. Analyze and draw conclusions based on properties of algebra and/or functions AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane F 707. Exhibit knowledge of logarithms
Lesson 24: Properties of Logarithms	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions F 707. Exhibit knowledge of logarithms
Lesson 25: Logarithmic and Exponential Equations	F 707. Exhibit knowledge of logarithms
Lesson 26: Exponential and Logarithmic Growth and Decay Models	F 702. Build functions for relations that are exponential F 707. Exhibit knowledge of logarithms
Lesson 27: Angles and their Measure	G 402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
Lesson 28: Trigonometric Functions and Properties	F 704. Exhibit knowledge of unit circle trigonometry G 509. Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
Lesson 29: Trigonometric Identities	F 706. Use trigonometric concepts and basic identities to solve problems
Lesson 30: Inverse Trigonometric Functions and Solving Trigonometric Equations	
Lesson 31: Graphs of Sine, Cosine, and Tangent Functions	F 705. Match graphs of basic trigonometric functions with their equations
Lesson 32: Right Triangle Trigonometry; Applications	A 501. Recognize that when numerical quantities are reported in real-world contexts, the numbers are often rounded F 706. Use trigonometric concepts and basic identities to solve problems G 402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°) G 504. Recognize that real-world measurements are typically imprecise and that an appropriate level of precision is related to the measuring device and procedure G 604. Apply basic trigonometric ratios to solve right-triangle problems
Lesson 33: The Law of Sines and Cosines	
Lesson 34: Area of a Triangle	G 403. Compute the area and perimeter of triangles and rectangles in simple problems

Lesson 35: Sequences	F 502. Find the next term in a sequence described recursively
	F 603. Find a recursive expression for the general term in a sequence described recursively
Lesson 36: Arithmetic and Geometric Sequences	F 502. Find the next term in a sequence described recursively
	F 603. Find a recursive expression for the general term in a sequence described recursively
	F 703. Exhibit knowledge of geometric sequences
Lesson 37: The Binomial Theorem	
Lesson 38: Complex Numbers	N 504. Exhibit some knowledge of the complex numbers
	N 606. Multiply two complex numbers
	N 704. Apply properties of complex numbers and the complex number system
Lesson 39: Counting and Probability	S 305. Use the relationship between the probability of an event and the probability of its complement
	S 403. Determine the probability of a simple event
	S 404. Describe events as combinations of other events (e.g., using and, or, and not)
	S 405. Exhibit knowledge of simple counting techniques
	S 503. Compute straightforward probabilities for common situations
	S 504. Use Venn diagrams in counting
	S 603. Apply counting techniques
	S 604. Compute a probability when the event and/or sample space are not given or obvious
	S 606. Recognize the concept of independence expressed in real-world contexts
Lesson 40: Finding Limits Using Tables and Graphs	
Lesson 41: Polar Coordinates	
Lesson 42: Vectors	N 607. Use relations involving addition, subtraction, and scalar multiplication of vectors and of matrices

11th Math: Geometry

Chapter 1 Tools of Geometry	
Points, Lines and Planes	N 403. Comprehend the concept of length on the number line, and find the distance between two points
Linear Measure	N 405. Find the distance in the coordinate plane between two points with the same x-coordinate or y-coordinate
Distance and Midpoints	G 303. Compute the area of rectangles when whole number dimensions are given
Angle Measures and	G 304. Locate points in the first quadrant
relationships	G 402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
Two-Dimensional Figures	G 405. Use geometric formulas when all necessary information is given
Three-Dimensional Figures	G 406. Locate points in the coordinate plane
	G 501. Use several angle properties to find an unknown angle measure

Chapter 2 Reasoning and Proof	
Inductive Reasoning and	G 704. Analyze and draw conclusions based on a set of conditions
Conjecture	
Logic	
Conditional Statements	
Deductive Reasoning	
Postulates and Paragraph	
Proofs	
Algebraic Proof	
Proving Segment	
Relationships	

Chapter 3 Parallel and Perpendicular Lines	
Parallel lines and	AF 503. Match linear equations with their graphs in the coordinate plane
transversals	A 406. Exhibit knowledge of slope
Angles and parallel lines	A 514. Determine the slope of a line from an equation
Slopes of lines	G 301. Exhibit some knowledge of the angles associated with parallel lines
Equations of lines	G 401. Use properties of parallel lines to find the measure of an angle
Proving Lines Parallel	G 405. Use geometric formulas when all necessary information is given
Perpendiculars and	G 501. Use several angle properties to find an unknown angle measure
distance	G 510. Determine the slope of a line from points or equation

Chapter 4 Congruent Triangles	
Classifying Triangles	G 501. Use several angle properties to find an unknown angle measure
Angles of Triangles	G 503. Use symmetry of isosceles triangles to find unknown side lengths or angle measures
Congruent triangles using	G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
SAS, SSS, HL, AAS and ASA	G 704. Analyze and draw conclusions based on a set of conditions
Isosceles and Equilateral	
Triangles	
Congruence	
Transformations	
Triangles and Coordinate	
Proof	

Chapter 5 Relationships in Triangles	
Bisectors, medians and	G 501. Use several angle properties to find an unknown angle measure
altitudes	G 704. Analyze and draw conclusions based on a set of conditions
Inequalities involving	
triangles	
Indirect Proof	

Chapter 6 Quadrilaterals	
Angles of polygons	G 501. Use several angle properties to find an unknown angle measure
Parallelograms	G 704. Analyze and draw conclusions based on a set of conditions
Tests for Parallelograms	
Rectangles	
Rhombi and Squares	
Trapezoids and Kites	

Chapter 7 Proportions and Similarity	
Ratios and Proportions	AF 601. Solve word problems containing several rates, proportions, or percentages
Similar polygons	G 405. Use geometric formulas when all necessary information is given
Similar triangles	G 501. Use several angle properties to find an unknown angle measure
Parallel Lines and	G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
Proportional Parts	G 703. Use scale factors to determine the magnitude of a size change
Parts of Similar Triangles	G 704. Analyze and draw conclusions based on a set of conditions
Similarity Transformations	
Scale Drawings and	
Models	

Chapter 8 Right Triangles and Trigonometry	
Geometric means	G 404. Find the length of the hypotenuse of a right triangle when only very simple computation is involved (e.g., 3-4-5 and 6-8-10
The Pythagorean Theorem	triangles)
and Its Converse	G 405. Use geometric formulas when all necessary information is given
	G 501. Use several angle properties to find an unknown angle measure

Special right triangles	G 508. Given the length of two sides of a right triangle, find the third when the lengths are Pythagorean triples
Angles of elevation and depression	G 509. Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths
Basic trigonometry	G 602. Use the Pythagorean theorem
Law of Sines and Law of Cosines	G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
	G 604. Apply basic trigonometric ratios to solve right-triangle problems
Vectors	G 704. Analyze and draw conclusions based on a set of conditions

Chapter 9 Transformations

Reflections	G 407. Translate points up, down, left, and right in the coordinate plane
Translations	G 502. Count the number of lines of symmetry of a geometric figure
Rotations	origin
Compositions of Transformations	G 512. Find the coordinates of a point rotated 180° around a given center point
	G 607. Find the coordinates of a point reflected across a vertical or horizontal line or across y = x
Symmetry	G 608. Find the coordinates of a point rotated 90° about the origin
Dilations	

Chapter 10 Circles and Circumference

Circles and circumference	AF 603. Interpret and use information from graphs in the coordinate plane
Measuring Angles and Arcs	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	G 405. Use geometric formulas when all necessary information is given
Arcs and chords	G 501. Use several angle properties to find an unknown angle measure
Inscribed angles	G 507. Compute the area and circumference of circles after identifying necessary information
Tangents	G 609. Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)
Secants, Tangents, and Angle Measures	G 701. Use relationships among angles, arcs, and distances in a circle
Special Segments in a Circle	
Equations of Circles	

Chapter 11 Areas of Polygons and Circles

Areas of parallelograms, triangles, trapezoids and rhombi	G 302. Compute the perimeter of polygons when all side lengths are given
	G 403. Compute the area and perimeter of triangles and rectangles in simple problems
	G 405. Use geometric formulas when all necessary information is given
Areas of Circles and Sectors	G 505. Compute the perimeter of simple composite geometric figures with unknown side lengths
Areas of regular polygons and Composite Figures	G 506. Compute the area of triangles and rectangles when one or more additional simple steps are required
	G 702. Compute the area of composite geometric figures when planning and/or visualization is required
Areas of Similar Figures	

Chapter 12 Extending Surface Area and Volume

Representations of Three-Dimensional Figures	G 405. Use geometric formulas when all necessary information is given
	G 601. Use relationships involving area, perimeter, and volume of geometric figures to compute another measure (e.g., surface area for a cube of a
Surface areas of prisms, cylinders, pyramids, cones and spheres	given volume and simple geometric probability)
	G 705. Solve multistep geometry problems that involve integrating concepts, planning, and/or visualization
Volumes of prisms, cylinders, pyramids, cones and spheres	
Spherical Geometry	
Congruent and Similar Solids	

Chapter 13 Probability and Measurement

Representing Sample Spaces	G 601. Use relationships involving area, perimeter, and volume of geometric figures to compute another measure (e.g., surface area for a cube of a
Probability with Permutations and Combinations	given volume and simple geometric probability)
	G 705. Solve multistep geometry problems that involve integrating concepts, planning, and/or visualization
Geometric Probability	S 305. Use the relationship between the probability of an event and the probability of its complement
Simulations	S 403. Determine the probability of a simple event
Probabilities of Independent and Dependent Events	S 404. Describe events as combinations of other events (e.g., using and, or, and not)
	S 405. Exhibit knowledge of simple counting techniques
	S 606. Recognize the concept of independence expressed in real-world contexts
Probabilities of Mutually Exclusive Events	

12th Grade Math: College Math	
Trigonometric Functions	
Trigonometric Functions in Right Triangles	A 501. Recognize that when numerical quantities are reported in real-world contexts, the numbers are often rounded
Angles and Angle Measure	F 704. Exhibit knowledge of unit circle trigonometry
	F 705. Match graphs of basic trigonometric functions with their equations
	G 402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)
Trigonometric Functions of General Angles	G 504. Recognize that real-world measurements are typically imprecise and that an appropriate level of precision is related to the measuring device and procedure
Law of Sines	G 509. Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths
Law of Cosines	G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles
Graphing Trigonometric Functions	G 604. Apply basic trigonometric ratios to solve right-triangle problems
Translations of Trigonometric Graphs	
Inverse Trigonometric Functions	
Trigonometric Indentities and Equations	
Trigonometric Identities	F 706. Use trigonometric concepts and basic identities to solve problems
Verifying Trigonometric Identities	
Sum and Difference of Angles Identities	
Double-Angle and Half-Angle Identities	
Solving Trigonometric Equations	
Financial Mathematics	
Simple Interest	AF 401. Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and estimating by using a given average value in place of actual values
Compound Interest	
Time Value of Money	
Credit Cards	
Loan Calculations	
Annuities	
Systems of linear equations	
Systems of linear equations	A 604. Solve systems of two linear equations
Quadratic Functions	
Graphing Quadratic Functions	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	A 506. Identify solutions to simple quadratic equations
	F 401. Evaluate linear and quadratic functions, expressed in function notation, at integer values
Solving Quadratic Equations by Graphing	A 506. Identify solutions to simple quadratic equations
	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Solving Quadratic Equations by Factoring	N 503. Work with numerical factors
	N 602. Apply number properties involving even/odd numbers and factors/multiples
	A 506. Identify solutions to simple quadratic equations
	A 507. Solve quadratic equations in the form $(x + a)(x + b) = 0$, where a and b are numbers or variables
	A 508. Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)
	A 601. Manipulate expressions and equations
	A 605. Solve quadratic equations
Complex Numbers	N 504. Exhibit some knowledge of the complex numbers
	N 606. Multiply two complex numbers
Completing the Square	A 601. Manipulate expressions and equations
The Quadratic Formula and the Discriminant	A 605. Solve quadratic equations
Transformations of Quadratic Graphs	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
Quadratic Inequalities	A 702. Match simple quadratic inequalities with their graphs on the number line
Exponential and Logarithmic Functions	
Graphing Exponential Functions	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
Solving Exponential Equations and Inequalities	
Logarithms and Logarithmic Functions	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	F 707. Exhibit knowledge of logarithms
Solving Logarithmic Equations and Inequalities	F 707. Exhibit knowledge of logarithms
Properties of Logarithms	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	F 707. Exhibit knowledge of logarithms
Common Logarithms	F 707. Exhibit knowledge of logarithms
Base e and Natural Logarithms	F 707. Exhibit knowledge of logarithms

Using Exponential and Logarithmic Functions	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	A 501. Recognize that when numerical quantities are reported in real-world contexts, the numbers are often rounded
	F 702. Build functions for relations that are exponential
	F 707. Exhibit knowledge of logarithms
Polynomial Functions	
Operations with Polynomials	A 402. Add and subtract simple algebraic expressions
	A 404. Multiply two binomials
	A 505. Add, subtract, and multiply polynomials
	A 512. Work problems involving positive integer exponents
Dividing Polynomials	
Polynomial Functions	F 501. Evaluate polynomial functions, expressed in function notation, at integer values
Analyze Graphs of Polynomial Functions	AF 603. Interpret and use information from graphs in the coordinate plane
	AF 703. Analyze and draw conclusions based on properties of algebra and/or functions
	AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane
	AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$
	F 509. Find the range of polynomial functions
Solving Polynomial Equations	
The Remainder and Factor Theorems	A 703. Apply the remainder theorem for polynomials, that P(a) is the remainder when P(x) is divided by (x − a)
Roots and Zeros	
Rational Zero Theorem	

11th Grade Math Elective: Intro to Statistics	
Chapter 1: Exploring Data	
Analyzing Categorical Data	S 303. Read basic tables and charts
	S 304. Extract relevant data from a basic table or chart and use the data in a computation
Displaying Quantitative Data with Graphs	S 202. Extract one relevant number from a basic table or chart, and use it in a single computation
	S 303. Read basic tables and charts
	S 304. Extract relevant data from a basic table or chart and use the data in a computation
	S 402. Translate from one representation of data to another (e.g., a bar graph to a circle graph)
	S 502. Manipulate data from tables and charts
	S 505. Recognize that when data summaries are reported in the real world, results are often rounded and must be interpreted as having appropriate precision
	S 506. Recognize that two data sets statistical model is each real world data are statistically different at a certain level
Describing Quantitative Data with Numbers	S 201. Calculate the average of a list of positive whole numbers
	S 301. Calculate the average of a list of numbers
	S 302. Calculate the average given the number of data values and the sum of the data values
	S 401. Calculate the missing data value given the average and all data values but one
	S 501. Calculate the average given the frequency counts of all the data values
	S 601. Calculate or use a weighted average
	S 701. Distinguish between mean, median, and mode for a list of numbers
Chapter 2: Modeling Distributions of Data	
Describing Location in a Distribution	
Normal Distributions	
Chapter 3: Describing Relationships	
Scatterplots and Correlation	S 705. Recognize that part of the power of statistical modeling comes from looking at regularity in the differences between actual values and model values
Least-Squares Regression	S 705. Recognize that part of the power of statistical modeling comes from looking at regularity in the differences between actual values and model values
Chapter 4: Designing Studies	
Samples and Surveys	S 703. Understand the role of randomization in surveys, experiments, and observational studies
Experiments	S 703. Understand the role of randomization in surveys, experiments, and observational studies
Using Studies Wisely	S 703. Understand the role of randomization in surveys, experiments, and observational studies
Chapter 5: Probability: What are the Chances?	
Randomness, Probability, and Simulation	S 405. Exhibit knowledge of simple counting techniques
	S 603. Apply counting techniques
	S 604. Compute a probability when the event and/or sample space are not given or obvious
Probability Rules	S 305. Use the relationship between the probability of an event and the probability of its complement
	S 403. Determine the probability of a simple event
	S 404. Describe events as combinations of other events (e.g., using and, or, and not)
	S 503. Compute straightforward probabilities for common situations
	S 504. Use Venn diagrams in counting
	S 602. Interpret and use information from tables and charts, including two-way frequency tables
	S 604. Compute a probability when the event and/or sample space are not given or obvious
	S 702. Analyze and draw conclusions based on information from tables and charts, including two-way frequency tables
Conditional Probability and Independence	S 602. Interpret and use information from tables and charts, including two-way frequency tables
	S 605. Recognize the concepts of conditional and joint probability expressed in real-world contexts
	S 606. Recognize the concept of independence expressed in real-world contexts
	S 704. Exhibit knowledge of conditional and joint probability

Number and Quantity (N)

13–15

N 201. Perform one-operation computation with whole numbers and decimals

N 202. Recognize equivalent fractions and fractions in lowest terms

N 203. Locate positive rational numbers (expressed as whole numbers, fractions, decimals, and mixed numbers) on the number line

16–19

N 301. Recognize one-digit factors of a number

N 302. Identify a digit's place value

N 303. Locate rational numbers on the number line

20–23

N 401. Exhibit knowledge of elementary number concepts such as rounding, the ordering of decimals, pattern identification, primes, and greatest common factor

N 402. Write positive powers of 10 by using exponents

N 403. Comprehend the concept of length on the number line, and find the distance between two points

N 404. Understand absolute value in terms of distance

N 405. Find the distance in the coordinate plane between two points with the same x-coordinate or y-coordinate

N 406. Add two matrices that have whole number entries

24–27

N 501. Order fractions

N 502. Find and use the least common multiple

N 503. Work with numerical factors

N 504. Exhibit some knowledge of the complex numbers

N 505. Add and subtract matrices that have integer entries

28–32

N 601. Apply number properties involving prime factorization

N 602. Apply number properties involving even/odd numbers and factors/multiples

N 603. Apply number properties involving positive/negative numbers

N 604. Apply the facts that π is irrational and that the square root of an integer is rational only if that integer is a perfect square

N 605. Apply properties of rational exponents

N 606. Multiply two complex numbers

N 607. Use relations involving addition, subtraction, and scalar multiplication of vectors and of matrices

33–36

N 701. Analyze and draw conclusions based on number concepts

N 702. Apply properties of rational numbers and the rational number system

N 703. Apply properties of real numbers and the real number system, including properties of irrational numbers

N 704. Apply properties of complex numbers and the complex number system

N 705. Multiply matrices

N 706. Apply properties of matrices and properties of matrices as a number system

Algebra and Functions (AF)

13–15

AF 201. Solve problems in one or two steps using whole numbers and using decimals in the context of money

16–19

AF 301. Solve routine one-step arithmetic problems using positive rational numbers, such as single-step percent

AF 302. Solve some routine two-step arithmetic problems

AF 303. Relate a graph to a situation described qualitatively in terms of familiar properties such as before and after, increasing and decreasing, higher and lower

AF 304. Apply a definition of an operation for whole numbers (e.g., a ◘ b = 3a − b)

20–23

AF 401. Solve routine two-step or three-step arithmetic problems involving concepts such as rate and proportion, tax added, percentage off, and estimating by using a given average value in place of actual values

AF 402. Perform straightforward word-to-symbol translations

AF 403. Relate a graph to a situation described in terms of a starting value and an additional amount per unit (e.g., unit cost, weekly growth)

24–27

AF 501. Solve multistep arithmetic problems that involve planning or converting common derived units of measure (e.g., feet per second to miles per hour)

AF 502. Build functions and write expressions, equations, or 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)

AF 503. Match linear equations with their graphs in the coordinate plane

28–32

AF 601. Solve word problems containing several rates, proportions, or percentages

AF 602. Build functions and write expressions, equations, and inequalities for common algebra settings (e.g., distance to a point on a curve and profit for variable cost and demand)

AF 603. Interpret and use information from graphs in the coordinate plane

AF 604. Given an equation or function, find an equation or function whose graph is a translation by a specified amount up or down

33–36

AF 701. Solve complex arithmetic problems involving percent of increase or decrease or requiring integration of several concepts (e.g., using several ratios, comparing percentages, or comparing averages)

AF 702. Build functions and write expressions, equations, and inequalities when the process requires planning and/or strategic manipulation

AF 703. Analyze and draw conclusions based on properties of algebra and/or functions

AF 704. Analyze and draw conclusions based on information from graphs in the coordinate plane

AF 705. Identify characteristics of graphs based on a set of conditions or on a general equation such as $y = ax^2 + c$

AF 706. Given an equation or function, find an equation or function whose graph is a translation by specified amounts in the horizontal and vertical directions

Algebra (A)

13–15

A 201. Exhibit knowledge of basic expressions (e.g., identify an expression for a total as b + g)

A 202. Solve equations in the form x + a = b, where a and b are whole numbers or decimals

16–19

A 301. Substitute whole numbers for unknown quantities to evaluate expressions

A 302. Solve one-step equations to get integer or decimal answers

A 303. Combine like terms (e.g., 2x + 5x)

20-23

A 401. Evaluate algebraic expressions by substituting integers for unknown quantities

A 402. Add and subtract simple algebraic expressions

A 403. Solve routine first-degree equations

A 404. Multiply two binomials

A 405. Match simple inequalities with their graphs on the number line

A 406. Exhibit knowledge of slope

24–27

A 501. Recognize that when numerical quantities are reported in real-world contexts, the numbers are often rounded

A 502. Solve real-world problems by using first-degree equations

A 503. Solve first-degree inequalities when the method does not involve reversing the inequality sign

A 504. Match compound inequalities with their graphs on the number line (e.g., −10.5 < x ≤ 20.3)

A 505. Add, subtract, and multiply polynomials

A 506. Identify solutions to simple quadratic equations

A 507. Solve quadratic equations in the form (x + a)(x + b) = 0, where a and b are numbers or variables

A 508. Factor simple quadratics (e.g., the difference of squares and perfect square trinomials)

A 509. Work with squares and square roots of numbers

A 510. Work with cubes and cube roots of numbers

A 511. Work with scientific notation

A 512. Work problems involving positive integer exponents

A 513. Determine when an expression is undefined

A 514. Determine the slope of a line from an equation • Solve multistep arithmetic problems that involve planning or converting

28–32

A 601. Manipulate expressions and equations

A 602. Solve linear inequalities when the method involves reversing the inequality sign

A 603. Match linear inequalities with their graphs on the number line

A 604. Solve systems of two linear equations

A 605. Solve quadratic equations

A 606. Solve absolute value equations

33–36

A 701. Solve simple absolute value inequalities

A 702. Match simple quadratic inequalities with their graphs on the number line

A 703. Apply the remainder theorem for polynomials, that P(a) is the remainder when P(x) is divided by (x − a)

Functions (F)

13–15

F 201. Extend a given pattern by a few terms for patterns that have a constant increase or decrease between terms

16–19

F 301. Extend a given pattern by a few terms for patterns that have a constant factor between terms

20-23

F 401. Evaluate linear and quadratic functions, expressed in function notation, at integer values

24–27

F 501. Evaluate polynomial functions, expressed in function notation, at integer values

F 502. Find the next term in a sequence described recursively

F 503. Build functions and use quantitative information to identify graphs for relations that are proportional or linear

F 504. Attend to the difference between a function modeling a situation and the reality of the situation

F 505. Understand the concept of a function as having a well-defined output value at each valid input value

F 506. Understand the concept of domain and range in terms of valid input and output, and in terms of function graphs

F 507. Interpret statements that use function notation in terms of their context

F 508. Find the domain of polynomial functions and rational functions

F 509. Find the range of polynomial functions

F 510. Find where a rational function's graph has a vertical asymptote

F 511. Use function notation for simple functions of two variables

28–32

F 601. Relate a graph to a situation described qualitatively in terms of faster change or slower change

F 602. Build functions for relations that are inversely proportional

F 603. Find a recursive expression for the general term in a sequence described recursively

F 604. Evaluate composite functions at integer values

33–36

F 701. Compare actual values and the values of a modeling function to judge model fit and compare models

F 702. Build functions for relations that are exponential

F 703. Exhibit knowledge of geometric sequences

F 704. Exhibit knowledge of unit circle trigonometry

F 705. Match graphs of basic trigonometric functions with their equations

F 706. Use trigonometric concepts and basic identities to solve problems

F 707. Exhibit knowledge of logarithms

F 708. Write an expression for the composite of two simple functions

13–15

G 201. Estimate the length of a line segment based on other lengths in a geometric figure

G 202. Calculate the length of a line segment based on the lengths of other line segments that go in the same direction (e.g., overlapping line segments and parallel sides of polygons with only right angles)

G 203. Perform common conversions of money and of length, weight, mass, and time within a measurement system (e.g., dollars to dimes, inches to feet, and hours to minutes)

16–19

G 301. Exhibit some knowledge of the angles associated with parallel lines

G 302. Compute the perimeter of polygons when all side lengths are given

G 303. Compute the area of rectangles when whole number dimensions are given

G 304. Locate points in the first quadrant

20–23

G 401. Use properties of parallel lines to find the measure of an angle

G 402. Exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 90°, 180°, and 360°)

G 403. Compute the area and perimeter of triangles and rectangles in simple problems

G 404. Find the length of the hypotenuse of a right triangle when only very simple computation is involved (e.g., 3-4-5 and 6-8-10 triangles)

G 405. Use geometric formulas when all necessary information is given

G 406. Locate points in the coordinate plane

G 407. Translate points up, down, left, and right in the coordinate plane

24–27

G 501. Use several angle properties to find an unknown angle measure

G 502. Count the number of lines of symmetry of a geometric figure

G 503. Use symmetry of isosceles triangles to find unknown side lengths or angle measures

G 504. Recognize that real-world measurements are typically imprecise and that an appropriate level of precision is related to the measuring device and procedure

G 505. Compute the perimeter of simple composite geometric figures with unknown side lengths

G 506. Compute the area of triangles and rectangles when one or more additional simple steps are required

G 507. Compute the area and circumference of circles after identifying necessary information

G 508. Given the length of two sides of a right triangle, find the third when the lengths are Pythagorean triples

G 509. Express the sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths

G 510. Determine the slope of a line from points or a graph

G 511. Find the midpoint of a line segment

G 512. Find the coordinates of a point rotated 180° around a given center point

28–32

G 601. Use relationships involving area, perimeter, and volume of geometric figures to compute another measure (e.g., surface area for a cube of a given volume and simple geometric probability)

G 602. Use the Pythagorean theorem

G 603. Apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles

G 604. Apply basic trigonometric ratios to solve right-triangle problems

G 605. Use the distance formula G 606. Use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point

G 607. Find the coordinates of a point reflected across a vertical or horizontal line or across y = x

G 608. Find the coordinates of a point rotated 90° about the origin

G 609. Recognize special characteristics of parabolas and circles (e.g., the vertex of a parabola and the center or radius of a circle)

33–36

G 701. Use relationships among angles, arcs, and distances in a circle

G 702. Compute the area of composite geometric figures when planning and/or visualization is required

G 703. Use scale factors to determine the magnitude of a size change

G 704. Analyze and draw conclusions based on a set of conditions

G 705. Solve multistep geometry problems that involve integrating concepts, planning, and/or visualization

Statistics and Probability (S)

13–15

S 201. Calculate the average of a list of positive whole numbers

S 202. Extract one relevant number from a basic table or chart, and use it in a single computation

16–19

S 301. Calculate the average of a list of numbers

S 302. Calculate the average given the number of data values and the sum of the data values

S 303. Read basic tables and charts

S 304. Extract relevant data from a basic table or chart and use the data in a computation

S 305. Use the relationship between the probability of an event and the probability of its complement

20–23

S 401. Calculate the missing data value given the average and all data values but one

S 402. Translate from one representation of data to another (e.g., a bar graph to a circle graph)

S 403. Determine the probability of a simple event

S 404. Describe events as combinations of other events (e.g., using and, or, and not)

S 405. Exhibit knowledge of simple counting techniques

24–27

S 501. Calculate the average given the frequency counts of all the data values

S 502. Manipulate data from tables and charts

S 503. Compute straightforward probabilities for common situations

S 504. Use Venn diagrams in counting

S 505. Recognize that when data summaries are reported in the real world, results are often rounded and must be interpreted as having appropriate precision

S 506. Recognize that when a statistical model is used, model values typically differ from actual values

28–32

S 601. Calculate or use a weighted average

S 602. Interpret and use information from tables and charts, including two-way frequency tables

S 603. Apply counting techniques

S 604. Compute a probability when the event and/or sample space are not given or obvious

S 605. Recognize the concepts of conditional and joint probability expressed in real-world contexts

S 606. Recognize the concept of independence expressed in real-world contexts

33–36

S 701. Distinguish between mean, median, and mode for a list of numbers

S 702. Analyze and draw conclusions based on information from tables and charts, including two-way frequency tables

S 703. Understand the role of randomization in surveys, experiments, and observational studies

S 704. Exhibit knowledge of conditional and joint probability

S 705. Recognize that part of the power of statistical modeling comes from looking at regularity in the differences between actual values and model values