Geometry Standards

Chapter 1 Standards

1a	Identify, name, draw, and apply basic facts about points, lines, segments, rays, and planes
1b	Construct and use midpoints and congruent line segments
1c	Name, classify, measure, and construct angles and angle bisectors
1d	Identify adjacent, vertical, complementary, and supplementary angles
1e	Find measures of pairs of angles
1f	Apply formulas for perimeter, area, and circumference
1g	Develop and apply the formula for finding the midpoint
1h	Use the Distance Formula and the Pythagorean Theorem to find the distance between two points
1i	Identify reflections, rotations, and translations
1j	Graph transformations in the coordinate plane

Chapter 2 Standards

2a	Use inductive reasoning to identify patterns and make conjectures.
2b	Find counterexamples to disprove conjectures.
2c	Identify, write, and analyze the truth value of conditional statements.
2d	Write the inverse, converse, and contrapositive of a conditional statement.
2e	Apply the Law of Detachment and the Law of Syllogism in logical reasoning.
2f	Write and Analyze Biconditional Statements
2g	Using properties of equality to write algebraic proofs
2h	Identify properties of equality and congruence
2i	Write Two-Column Proofs
2j	Prove geometric theorems by using deductive reasoning
2k	Write Flowchart and Paragraph Proofs
2l	Prove geometric theorems by using deductive reasoning

Chapter 3 Standards

3a	Identify parallel, perpendicular, and skew lines
3b	Identify the angles formed by two lines and a transversal
3c	Prove and use theorems about the angles formed by parallel lines and a transversal
3d	Use the angles formed by a transversal to prove two lines are parallel
3e	Prove and apply theorems about perpendicular lines
3f	Find the slope of a line
3g	Use slopes to identify parallel and perpendicular lines
3h	Graph lines and write their equations in slope-intercept and point-slope form.
3i	Classify lines as parallel, intersecting, or coinciding.

Chapter 4 Standards

4a	Draw, identify, and describe transformations in the coordinate plane.
4b	Use properties of rigid motions to determine whether figures are congruent and to prove figures congruent.
4c	Classify triangles by their angle measures and side lengths.
4d	Use triangle classification to find angle measures and side lengths.
4e	Apply theorems about and find the measures of the interior and exterior angles of triangles.
4f	Use properties of congruent triangles to find angle measures and side lengths.
4g	Prove triangles congruent by using the definition of congruence.
4h	Proving Triangles Congruent Using Postulates (Side-Side-Side, Side-Angle-Side, Angle-Side-Angle, Angle-Angle-Side, and Hypotenuse-Leg
4i	Proving Parts of Triangles are Congruent using CPCTC
4j	Position figures in the coordinate plane for use in coordinate proofs.
4k	Prove geometric concepts by using coordinate proof.
4l	Prove theorems about isosceles and equilateral triangles.
4m	Apply properties of isosceles and equilateral triangles.

Chapter 5 Standards

5a	Prove and apply theorems about perpendicular bisectors.
5b	Prove and apply theorems about angle bisectors.
5c	Prove and apply properties of perpendicular & angle bisectors, circumcenters and incenters of triangles.
5d	Apply properties of medians, altitudes, orthocenters and centroids of triangles.
5e	Prove and use properties of triangle midsegments.
5f	Apply inequalities in one triangle.
5g	Write Indirect Proofs
5h	Apply inequalities in two triangles
5i	Use the Pythagorean Theorem and its converse to solve problems.
5j	Use Pythagorean inequalities to classify triangles.
5k	Justify and apply properties of 45°-45°-90° and 30°-60°-90° triangles.

Chapter 6 Standards

6a	Classify polygons based on their sides and angles.
6b	Find and use the measures of interior and exterior angles of polygons.
6c	Prove and apply properties of parallelograms to solve problems.
6d	Prove that a given quadrilateral is a parallelogram.
6e	Prove and apply properties of rectangles, rhombuses, and squares to solve problems.
6f	Prove that a given quadrilateral is a rectangle, rhombus, or square.
6g	Use properties of kites to solve problems.
6h	Use properties of trapezoids to solve problems.

Chapter 7 Standards

7a	Identify similar polygons.
7b	Apply properties of similar polygons to solve problems.
7c	Draw and describe similarity transformations in the coordinate plane.
7d	Use properties of similarity transformations to determine whether polygons are similar and to prove circles are similar.
7e	Prove certain triangles are similar by using AA, SSS, and SAS.
7f	Use triangle similarity to solve problems.
7g	Use properties of similar triangles to find segment lengths and angle measurements.
7h	Apply proportionality and triangle angle bisector theorems.
7i	Use ratios to make indirect measurements.
7j	Use scale drawings to solve problems.
7k	Apply similarity properties in the coordinate plane
7l	Use coordinate proof to prove figures similar.

Chapter 8 Standards

8a	Use geometric mean to find segment lengths in right triangles.
8b	Apply similarity relationships in right triangles to solve problems.
8c	Find the sine, cosine, and tangent of an acute angle.
8d	Use trigonometric ratios to find side lengths in right triangles and to solve real-world problems.
8e	Use trigonometric ratios to find angle measures in right triangles and to solve real-world problems.
8f	Use the Law of Sines and the Law of Cosines to solve triangles.
8g	Find the magnitude and direction of a vector.
8h	Use vectors and vector addition to solve real- world problems.

Chapter 10 Standards

10a	Solve problems involving perimeters and areas of triangles and special quadrilaterals.
10b	Develop and apply the formulas for the area and circumference of a circle.
10c	Develop and apply the formula for the area of a regular polygon.
10d	Use composite figures to estimate the areas of irregular shapes

Chapter 11 Standards

11a	Classify three-dimensional figures according to their properties
11b	Use nets and cross sections to analyze three-dimensional figures.
11c	Find the surface area of various composite three-dimensional figures
11d	Learn and apply the formula for the volume of a prism.
11e	Learn and apply the formula for the volume of a cylinder.
11f	Learn and apply the formula for the volume of a pyramid.
11g	Learn and apply the formula for the volume of a cone
11h	Learn and apply the formula for the volume and surface area of a sphere

Chapter 12 Standards

12a	Identify tangents, secants, and chords
12b	Use properties of tangents to solve problems
12c	Apply properties of arcs
12d	Apply properties of chords
12e	Find the area of sectors
12f	Find arc lengths
12g	Find the measure of an inscribed angle
12h	Use inscribed angles and their properties to solve problems
12i	Find the measures of angles formed by lines that intersect circles.
12j	Solve problems using angle measures formed by lines that intersect circles.
12k	Find the lengths of segments formed by lines that intersect circles.
12l	Use the lengths of segments in circles to solve problems.
12m	Write equations and graph circles in the coordinate plane.
12n	Use the equation and graph of a circle to solve problems

Trigonometry Chapter A Standards

A1a	Express angles in radian measure
A2a	Convert radian measure to degrees and vice versa
A2b	Measure angles as rotations and determine reference angles
A3a	Determine trigonometric ratios for special angles in standard position
A3b	Determine the coordinates on the unit circle for terminal rays of selected rotations
A3c	Find exact values of trigonometric expressions without a calculator
A4a	Find all six exact trigonometric ratios for an angle given a coordinate point on its terminal ray
A4b	Use a calculator to find approximate trig values for a given angle
A4c	Use a calculator to find all approximate angle measures for a given trig value
A5	Prove Trigonometric Identities and use them to simplify Trigonometric equations
A6a	Find and draw a resultant vector from other component vectors.
A6b	Find the direction angle of a resultant vector from other component vectors.