Geometry Math Standards and “I Can Statements”

**Unit 1 Subsection A**

CC.9-12.G.CO.1 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.
- I can describe the undefined terms: point, line, and distance along a line in a plane
- I can describe the undefined terms: point, line, and distance along a line in a plane
- I can define circle and the distance around a circular arc

CC.9-12.G.CO.4 Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.
- I can recall definitions of angles, circles, perpendicular and parallel lines and line segments
- I can develop definitions of rotations, reflections and translations in terms of angles, circles, perpendicular lines, parallel lines and line segments

CC.9-12.G.CO.12 Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.
- I can explain the construction of geometric figures using a variety of tools and methods
- I can apply the definitions, properties and theorems about line segments, rays and angles to support geometric constructions
- I can apply properties and theorems about parallel and perpendicular lines to support constructions
- I can perform geometric constructions including: Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to given line through a point not on the line, using a variety of tools an methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.)

CC.9-12.G.CO.13 Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.
- I can construct an equilateral triangle, a square and a regular hexagon inscribed in a circle
Unit 1 Subsection B

CC.9-12.G.CO.7 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

- I can identify corresponding angles and sides of two triangles
- I can identify corresponding pairs of angles and sides of congruent triangles after rigid motions
- I can use the definition of congruence in terms of rigid motions to show that two triangles are congruent if corresponding pairs of sides and corresponding pairs of angles are congruent
- I can use the definition of congruence in terms of rigid motions to show that if the corresponding pairs of sides and corresponding pairs of angles of two triangles are congruent then the two triangles are congruent
- I can justify congruency of two triangles using transformations

CC.9-12.G.CO.6 Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.

- I can use geometric descriptions of rigid motions to transform figures
- I can predict the effect of a given rigid motion on a given figure
- I can define congruence in terms of rigid motions (i.e. two figures are congruent if there exists a rigid motion, or composition of rigid motions, that can take one figure to the second)
- I can describe rigid motion transformations
- I can predict the effect of a given rigid motion
- I can decide if two figures are congruent in terms of rigid motions (it is not necessary to find the precise transformation(s) that took one figure to a second, only to understand that such a transformation or composition exists)
- I can, given two figures, use the definition of congruence in terms of rigid motion to decide if they are congruent

CC.9-12.G.CO.8 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

- I can informally use rigid motions to make angles and segments (from 8th grade)
- I can formally use dynamic geometry software or straightedge and compass to take angles to angles and segments to segments
- I can identify ASA, SAS, and SSS
- I can explain how the criteria for triangle congruence (ASA, SAS, SSS) follows from the definition of congruence in terms of rigid motions (i.e. if two angles and the included side of one triangle are transformed by the same rigid motion(s) then the triangle image will be congruent to the original triangle)
CC.9-12.G.CO.3 Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.

- I can describe the rotations and/or reflections that carry it onto itself given a rectangle, parallelogram, trapezoid, or regular polygon.

CC.9-12.G.CO.2 Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).

- I can describe the different types of transformations including translations, reflections, rotations and dilations.
- I can describe transformations as functions that take points in the coordinate plane as inputs and give other points as outputs.
- I can compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).
- I can represent transformations in the plane using, e.g., transparencies and geometry software.
- I can write functions to represent transformations.
Unit 1 Subsection C

CC.9-12.G.CO.9 Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment’s endpoints.
- I can identify and use properties of vertical angles
- I can identify and use properties of parallel lines with transversals, corresponding angles, and alternate interior and exterior angles
- I can identify and use properties of perpendicular bisector
- I can identify and use properties of equidistant from endpoint
- I can identify and use properties of all angle relationships
- I can prove vertical angles are congruent
- I can prove corresponding angles are congruent when two parallel lines are cut by a transversal and converse
- I can prove alternate interior angles are congruent when two parallel lines are cut by a transversal and converse
- I can prove points are on a perpendicular bisector of a line segment are exactly equidistant from the segments endpoint

CC.9-12.G.CO.10 Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180 degrees; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.
- I can identify the hypothesis and conclusion of a triangle sum theorem
- I can identify the hypothesis and conclusion of a base angle of isosceles triangles
- I can identify the hypothesis and conclusion of midsegment theorem
- I can identify the hypothesis and conclusion of points of concurrency
- I can design an argument to prove theorems about triangles
- I can analyze components of the theorem
- I can prove theorems about triangles

CC.9-12.G.CO.11 Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.
- I can classify types of quadrilaterals
- I can explain theorems for various parallelograms involving opposite sides and angles and relate to figure
- I can explain theorems for various parallelograms involving diagonals and relate to figure
- I can use the principle that corresponding parts of congruent triangles are congruent to solve problems
- I can use properties of special quadrilaterals in a proof
CC.9-12.G.CO.5 Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.

- I can, given a geometric figure and a rotation, reflections or translation, draw the transformed figure using, e.g. graph paper, tracing paper or geometry software
- I can a draw transformed figure and specify the sequence of transformations that were used to carry the given figure onto the other
CC.9-12.G.SRT.1 Verify experimentally the properties of dilations given by a center and a scale factor:

-- a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.

- I can define image, pre-image, scale factor, center, and similar figures as they relate to transformations
- I can identify a dilation stating its scale factor and center
- I can verify experimentally that a dilated image is similar to its pre-image by showing congruent corresponding angles and proportional sides
- I can verify experimentally that a dilation takes a line not passing through the center of the dilation to a parallel line by showing the lines are parallel
- I can verify experimentally that dilation takes a line not passing through the center of the dilation unchanged by showing that it is the same line

-- b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor.

- I can define image, pre-image, scale factor, center, and similar figures as they relate to transformations
- I can identify a dilation stating its scale factor and center
- I can explain that the scale factor represents how many times longer or shorter a dilated line segment is than its pre-image
- I can verify experimentally that the dilation of a line segment is longer or shorter in the ratio given by the scale factor

CC.9-12.G.SRT.2 Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.

- I can, by using similarity transformations, explain that triangles are similar if all pairs of corresponding angles are congruent and all corresponding pairs of sides are proportional
- I can, given two figures, decide if they are similar by using the definition of similarity in terms of similarity transformations

CC.9-12.G.SRT.5. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

- I can recall congruence and similarity criteria for triangles
- I can use congruency and similarity theorems for triangles to solve problems
- I can use congruency and similarity theorems for triangles to prove relationships in geometric figures
CC.9-12.G.SRT.3 Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.
   - I can recall the properties of similarity transformations
   - I can establish the AA criterion for similarity of triangles by extending the properties of similarity transformations to the general case of any two similar triangles

**Unit 2 Subsection B**

CC.9-12.G.SRT.4 Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.
   - I can recall postulates, theorems, and definitions to prove theorems about triangles
   - I can prove theorems involving similarity about triangles. (Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity)

CC.9-12.G.SRT.6 Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
   - I can name the sides of right triangles as related to an acute angle
   - I can recognize that if two right triangles have a pair of acute, congruent angles that the triangles are similar
   - I can compare common ratios for similar right triangles and develop a relationship between the ratio and the acute angle leading to the trigonometry ratios

CC.9-12.G.SRT.8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.
   - I can recognize which methods could be used to solve right triangles in applied problems
   - I can solve for an unknown angle or side of a right triangle using sine, cosine, and tangent
   - I can apply right triangle trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems

CC.9-12.G.SRT.7 Explain and use the relationship between the sine and cosine of complementary angles.
   - I can use the relationship between the sine and cosine of complementary angles
   - I can identify the sine and cosine of acute angles in right triangles
   - I can identify the tangent of acute angles on right triangles
   - I can explain how the sine and cosine of complementary angles are related to each other

CC.9-12.G.SRT.10 (+) Prove the Laws of Sines and Cosines and use them to solve problems.
   - I can use the Laws of Sines and Cosines to find missing angles or side length measurements
   - I can Prove the Law of Sines
   - I can prove the Law of Cosines
   - I can recognize when the Law of Sines or Law of Cosines can be applied to a problem and solve problems in context using them

CC.9-12.G.SRT.11 (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).
• I can determine from given measurements in right and non-right triangles whether it is appropriate to use the Law of Sines or Cosines
• I can apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces)

CC.9-12.G.SRT.9 (+) Derive the formula $A = (1/2)ab \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.
- I can recall right triangle trigonometry to solve mathematical problems
- I can apply the area of a triangle formula by using the formula $A = \frac{1}{2}ab \sin(C)$ to solve real world problems
  - I can derive the formula $A = \frac{1}{2}ab \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side

CC.9-12.G.MG.1 Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).*(*Modeling Standard)
- I can use measures and properties of geometric shapes to describe real world objects
- I can, given a real-world object, classify the object as a known geometric shape – use this to solve problems in context

CC.9-12.G.MG.2 Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).*(*Modeling Standard)
- I can define density
- I can apply concepts of density based on area and volume to model real-life situations (e.g., persons per square mile, BTUs per cubic foot)

CC.9-12.G.MG.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).*(*Modeling Standard)
- I can describe a typographical grid system
- I can apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid system based on ratios)
Unit 3

CC.9-12.G.GMD.1 Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments, Cavalieri’s principle, and informal limit arguments.
  
- I can recognize cross-sections of solids as two-dimensional shapes
- I can recognize formulas for area and circumference of a circle and volume of a cylinder, pyramid, and cone
- I can use the techniques of dissection and limit arguments
- I can recognize Cavalieri’s principle
- I can decompose volume formulas into area formulas using cross-sections
- I can apply dissection and limit arguments (e.g., Archimedes’ inscriptions and circumscriptions of polygons about a circle) and as a component of the informal argument for the formulas for the circumference and area of a circle
- I can apply Cavalieri’s Principle as a component of the informal argument for the formulas for the volume of a cylinder, pyramid, and cone

CC.9-12.G.GMD.3 Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.*
  
- I can utilize the appropriate formula for volume depending on the figure
- I can use volume formulas for cylinders, pyramids, cones, and spheres to solve contextual problems

CC.9-12.G.MG.1 Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).*
  
- I can use measures and properties of geometric shapes to describe real-world objects to solve geometric problems
- I can, given a real-world object, classify the object as a known geometric shape; use this to solve problems in context
**Unit 4**

CC.9-12.G.GPE.2 Derive the equation of a parabola given a focus and directrix.
- I can define a parabola including the relationship of the focus and the equation of the directrix to the parabolic shape (using \( y = a(x-h)^2 + k \))
- I can derive the equation of a parabola given the focus and directrix using \( y = a(x-h)^2 + k \)

CC.9-12.G.GPE.4 Use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point \((1, \sqrt{3})\) lies on the circle centered at the origin and containing the point \((0,2)\).
- I can recall previous understandings of coordinate geometry (including, but not limited to: distance, midpoint and slope formula, equations of a line, definitions of parallel and perpendicular lines, etc.)
- I can use coordinate to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point \((1, 3)\) lies on the circle centered at the origin and containing the point \((0,2)\)

CC.9-12.G.GPE.5 Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
- I can recognize that slopes of parallel lines are equal
- I can recognize that slopes of perpendicular lines are opposite reciprocals (i.e., the slopes of perpendicular lines have a product of -1)
- I can find the equation of a line parallel to a given line that passes through a given point
- I can find the equation of a line perpendicular to a given line that passes through a given point
- I can prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems

CC.9-12.G.GPE.6 Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
- I can recall the definition of ratio
- I can recall previous understandings of coordinate geometry
- I can, given a line segment (including those with positive and negative slopes) and ratio, find the point on the segment that partitions the segment into the given ratio

CC.9-12.G.GPE.6 Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
- I can recall the definition of ratio
- I can recall previous understandings of coordinate geometry
- I can, given a line segment (including those with positive and negative slopes) and ratio, find the point on the segment that partitions the segment into the given ratio

CC.9-12.G.GPE.7 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.* (Modeling Standard)
- I can use the coordinates of the vertices of a polygon to find the necessary dimensions for finding the perimeter (i.e., the distance between vertices)
- I can use the coordinates of the vertices of a triangle to find the necessary dimensions (base, height) for finding the area (i.e., the distance between vertices by counting, distance, formula, Pythagorean Theorem, etc.)
- I can use coordinates of the vertices of a rectangle to find the necessary dimensions (base, height) for finding the area (i.e., the distance between vertices by counting, distance, formula)
- I can formulate a model of figures in contextual problems to compute area and/or perimeter
**Unit 5**

CC.9-12.G.C.1 Prove that all circles are similar.
- I can recognize when figures are similar. (Two figures are similar if one is the image of the other under a transformation from the plane into itself that multiplies all distances by the same positive scale factor, k. That is to say, one figure is a dilation of the other)
- I can compare the ratio of the circumference of a circle to the diameter of the circle
- I can discuss, develop and justify this ratio for several circles
- I can determine this ratio is constant for all circles

CC.9-12.G.C.2 Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.
- I can identify inscribed angles, radii, chords, central angles, circumscribed angles, diameter, tangent
- I can recognize that inscribed angles on a diameter are right angles
- I can recognize that radius of a circle is perpendicular to the radius at the point of tangency
- I can examine the relationship between central, inscribed and circumscribed angles by applying theorems about their measures

CC.9-12.G.C.3 Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.
- I can define inscribed and circumscribed circles of a triangle
- I can recall midpoint and bisector definitions
- I can define a point of concurrency
- I can prove properties of angles for a quadrilateral inscribed in a circle
- I can construct inscribed circles of a triangle
- I can construct circumscribed circles of a triangle

CC.9-12.G.C.4 (+) Construct a tangent line from a point outside a given circle to the circle.
- I can recall vocabulary: tangent, radius, perpendicular bisector, midpoint
- I can identify the center of the circle
- I can synthesize theorems that apply to circles and tangents, such as: tangents drawn from a common external point are congruent; a radius is perpendicular to a tangent at the point of tangency
- I can construct the perpendicular bisector of the line segment between the center C to the outside point P
- I can construct arcs on circle C from the midpoint Q, having length of CQ
- I can construct the tangent line

CC.9-12.G.C.5 Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.
- I can recall how to find the area and circumference of a circle
- I can explain that $1^\circ = \pi 180$ radians
- I can recall from G.C.1, that all circles are similar
- I can determine the constant of proportionality (scale factor)
- I can justify the radii of any two circles ($r_1$ and $r_2$) and the arc lengths ($s_1$ and $s_2$) determined by congruent central angles are proportional, such that $r_1/s_1 = r_2/s_2$
- I can verify that the constant of a proportion is the same as the radian measure, $\Theta$, of the given central angle. Conclude $s = r\Theta$

CC.9-12.G.GPE.1 Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.
- I can define a circle
- I can use Pythagorean Theorem
- I can complete the square of a quadratic equation
- I can use the distance formula
- I can derive the equation of a circle using the Pythagorean Theorem – given coordinates of the center and length of the radius
- I can determine the center and radius by completing the square

CC.9-12.G.GPE.2 Derive the equation of a parabola given a focus and directrix.
- I can recall previous understandings of coordinate geometry (including, but not limited to: distance, midpoint and slope formula, equation of a line, definitions of parallel and perpendicular lines, etc.)
- I can use coordinates to prove simple geometric theorems algebraically. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, 3) lies on the circle centered at the origin and containing the point (0,2)

CC.9-12.G.MG.1 Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder). *(Modeling Standard)
- I can use measures and properties of geometric shapes and circles to describe real-world objects and solve geometric problems
- I can, given a real-world object, classify the object as a known geometric shape – use this to solve problems in context
Unit 6

CC.9-12.S.CP.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”).

- I can define unions, intersections and complements of events
- I can describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or”, “and”, “not”)

CC.9-12.S.CP.2 Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.*

Statistics and Probability is a Modeling Conceptual Category

- I can categorize events as independent or not using the characterization that two events A and B are independent when the probability of A and B occurring together is the product of their probabilities
- I can determine the outcome of independent events as the product of their probabilities

CC.9-12.S.CP.3 Understand the conditional probability of A given B as \( P(A \text{ and } B)/P(B) \), and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.*

Statistics and Probability is a Modeling Conceptual Category

- I can recognize the conditional probability of A given B is the same as \( P(A \text{ and } B)/P(B) \)
- I can interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B

CC.9-12.S.CP.4 Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your
school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.* Statistics and Probability is a Modeling Conceptual Category

- I can use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities
- I can interpret two-way frequency tables of data when two categories are associated with each object being classified. (For example, collect data from a random sample of students in your school on their favorite subject among math, science and English. Estimate the probability that a randomly selected student from your school will favor science given that student is in 10th grade. Do the same for other subjects and compare results

CC.9-12.S.CP.5 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.* Statistics and Probability is a Modeling Conceptual Category

- I can recognize the concepts of conditional probability and independence in everyday language and everyday situations
- I can explain the concepts of conditional probability and independence in everyday language and everyday situations (For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer)

CC.9-12.S.CP.6 Find the conditional probability of A given B as the fraction of B’s outcomes that also belong to A, and interpret the answer in terms of the model.* Statistics and Probability is a Modeling Conceptual Category

- I can find the conditional probability of A given B as the fraction of B’s outcomes that also belong to A

CC.9-12.S.CP.7 Apply the Addition Rule, \( P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B) \), and interpret the answer in terms of the model.* Statistics and Probability is a Modeling Conceptual Category

- I can use the Additional Rule, \( P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B) \)
- I can interpret the answer in terms of the model

CC.9-12.S.CP.8 (+) Apply the general Multiplication Rule in a uniform probability model, \( P(A \text{ and } B) = [P(A)] \times [P(B|A)] = [P(B)] \times [P(A|B)] \), and interpret the answer in terms of the model.* Statistics and Probability is a Modeling Conceptual Category

- I can use the multiplication rule with correct notation
- I can apply the general Multiplication Rule in a uniform probability model \( P(A \text{ and } B) = P(A)P(B|A) = P(B)P(A|B) \)
- I can interpret the answer in terms of the model

CC.9-12.S.CP.9 (+) Use permutations and combinations to compute probabilities of compound events and solve problems.* Statistics and Probability is a Modeling Conceptual Category

- I can identify situations that are permutations and those that are combinations
- I can use permutations and combinations to compute probabilities of compound events and solve problems
CC.9-12.S.MD.6 (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator). *This unit sets the stage for work in Algebra 2, where the ideas of statistical inference are introduced. Evaluating the risks associated with conclusions drawn from sample data (i.e. incomplete information) requires an understanding of probability concepts. Statistics and Probability is a Modeling Conceptual Category
  - I can compute Theoretical and Experimental Probabilities
  - I can use probabilities to make fair decisions (e.g. drawing by lots, using random number generator)

CC.9-12.S.MD.7 (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).* Statistics and Probability is a Modeling Conceptual Category
  - I can recall prior understandings of probability
  - I can analyze decision and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game)