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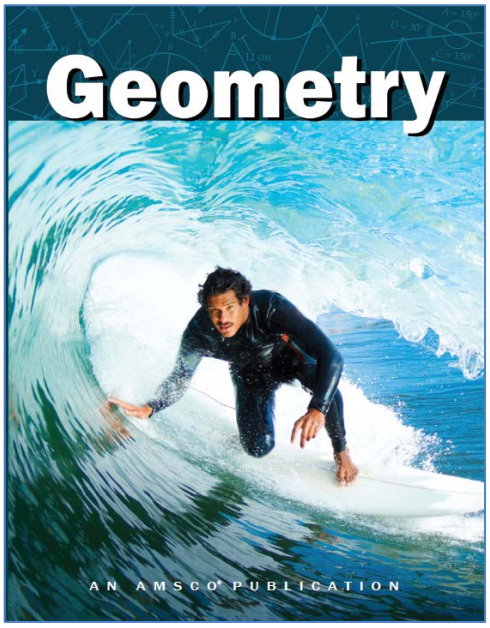

AMSCO Geometry

alignment to

Minnesota Standards

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AMSCO Geometry Alignment to Minnesota Standards		
No.	**Minnesota Standard**	**AMSCO GEO Lesson**
9.2.1.5	Identify the vertex, line of symmetry and intercepts of the parabola corresponding to a quadratic function, using symbolic and graphical methods, when the function is expressed in the form f (x) = ax2 + bx + c, in the form f (x) = a(x – h)2 + k , or in factored form.	R.9
9.2.1.9	Determine how translations affect the symbolic and graphical forms of a function. Know how to use graphing technology to examine translations.	1.3, 1.4
9.2.3.2	Add, subtract and multiply polynomials; divide a polynomial by a polynomial of equal or lower degree.	R.5
9.2.3.3	Factor common monomial factors from polynomials, factor quadratic polynomials, and factor the difference of two squares. For example: 9x6 – x4 = (3x3 – x2)(3x3 + x2).	R.6
9.2.3.7	Justify steps in generating equivalent expressions by identifying the properties used. Use substitution to check the equality of expressions for some particular values of the variables; recognize that checking with substitution does not guarantee equality of expressions for all values of the variables.	R.1, R.2
9.3.1.1	Determine the surface area and volume of pyramids, cones and spheres. Use measuring devices or formulas as appropriate.	10.2, 10.3
9.3.1.2	Compose and decompose two- and three-dimensional figures; use decomposition to determine the perimeter, area, surface area and volume of various figures.	10.2, 10.3
9.3.1.4	Understand and apply the fact that the effect of a scale factor k on length, area and volume is to multiply each by k, k2 and k3, respectively.	2.3, 10.5
9.3.2.1	Understand the roles of axioms, definitions, undefined terms and theorems in logical arguments.	3.1, 3.2, 3.3, 3.4
9.3.2.2	Accurately interpret and use words and phrases such as "if…then," "if and only if," "all," and "not." Recognize the logical relationships between an "if…then" statement and its inverse, converse and contrapositive.	3.2
9.3.2.3	Assess the validity of a logical argument and give counterexamples to disprove a statement.	3.1, 6.7

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9.3.2.4	Construct logical arguments and write proofs of theorems and other results in geometry, including proofs by contradiction. Express proofs in a form that clearly justifies the reasoning, such as two-column proofs, paragraph proofs, flow charts or illustrations.	1.4, 2.3, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.5, 5.1, 5.2, 5.3, 5.4, 6.1, 6.2, 6.3, 6.4, 6.5, 7.1, 7.2, 7.3, 7.4, 7.6, 7.8, 8.1, 8.2, 8.3, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 10.3, 10.5, 11.2, 11.3
9.3.2.5	Use technology tools to examine theorems, make and test conjectures, perform constructions and develop mathematical reasoning skills in multi- step problems. The tools may include compass and straight edge, dynamic geometry software, design software or Internet applets.	1.1, 4.3, 5.1, 6.2, 8.1, 8.3, 9.6, also see geometry activities at amscomath.com
9.3.3.1	Know and apply properties of parallel and perpendicular lines, including properties of angles formed by a transversal, to solve problems and logically justify results. .	4.1, 4.2, 4.3, 4.4, 4.5
9.3.3.2	Know and apply properties of angles, including corresponding, exterior, interior, vertical, complementary and supplementary angles, to solve problems and logically justify results.	4.1, 4.2, 4.3, 4.4, 4.5
9.3.3.3	Know and apply properties of equilateral, isosceles and scalene triangles to solve problems and logically justify results.	5.1, 5.2, 5.3, 5.4, 6.6
9.3.3.4	Apply the Pythagorean Theorem and its converse to solve problems and logically justify results.	R.11, 1.2, 2.3, 5.3, 6.2, 6.3, 7.3, 7.4, 10.1
9.3.3.5	Know and apply properties of right triangles, including properties of 45-45-90 and 30-60-90 triangles, to solve problems and logically justify results.	7.5, 7.6, 9.8
9.3.3.6	Know and apply properties of congruent and similar figures to solve problems and logically justify results.	5.1, 5.2, 5.3, 5.4, 6.1, 6.2, 6.3, 6.4, 6.5, 7.1, 7.2, 7.4, 7.5, 7.6, 7.7
9.3.3.7	Use properties of polygons—including quadrilaterals and regular polygons— to define them, classify them, solve problems and logically justify results.	9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8
9.3.3.8	Know and apply properties of a circle to solve problems and logically justify results.	8.1, 8.2, 8.3, 8.4, 8.5
9.3.4.1	Understand how the properties of similar right triangles allow the trigonometric ratios to be defined, and determine the sine, cosine and tangent of an acute angle in a right triangle.	7.6, 7.7

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9.3.4.2	Apply the trigonometric ratios sine, cosine and tangent to solve problems, such as determining lengths and areas in right triangles and in figures that can be decomposed into right triangles. Know how to use calculators, tables or other technology to evaluate trigonometric ratios.	7.6, 7.7, 7.8
9.3.4.3	Use calculators, tables or other technologies in connection with the trigonometric ratios to find angle measures in right triangles in various contexts.	7.6, 7.7, 7.8
9.3.4.4	Use coordinate geometry to represent and analyze line segments and polygons, including determining lengths, midpoints and slopes of line segments.	1.2, 4.4, 6.1, 9.5
9.3.4.5	Know the equation for the graph of a circle with radius r and center (h, k), $(x – h)2 + (y – k)2 = r2$, and justify this equation using the Pythagorean Theorem and properties of translations.	11.1, 11.3
9.3.4.6	Use numeric, graphic and symbolic representations of transformations in two dimensions, such as reflections, translations, scale changes and rotations about the origin by multiples of 90˚, to solve problems involving figures on a coordinate grid.	1.3, 1.4, 1.5, 1.6, 1.7, 2.2, 2.4,
9.3.4.7	Use algebra to solve geometric problems unrelated to coordinate geometry, such as solving for an unknown length in a figure involving similar triangles, or using the Pythagorean Theorem to obtain a quadratic equation for a length in a geometric figure.	2.1, 2.2, 2.3, 5.6, 6.2, 6.3, 6.5, 7.3, 7.4, 10.1
9.4.3.1	Select and apply counting procedures, such as the multiplication and addition principles and tree diagrams, to determine the size of a sample space (the number of possible outcomes) and to calculate probabilities.	12.1, 12.2
9.4.3.4	Use random numbers generated by a calculator or a spreadsheet, or taken from a table, to perform probability simulations and to introduce fairness into decision making.	12.3
9.4.3.6	Describe the concepts of intersections, unions and complements using Venn diagrams. Understand the relationships between these concepts and the words AND, OR, NOT, as used in computerized searches and spreadsheets.	12.3
9.4.3.7	Understand and use simple probability formulas involving intersections, unions and complements of events.	12.4
9.4.3.8	Apply probability concepts to real-world situations to make informed decisions.	12.5