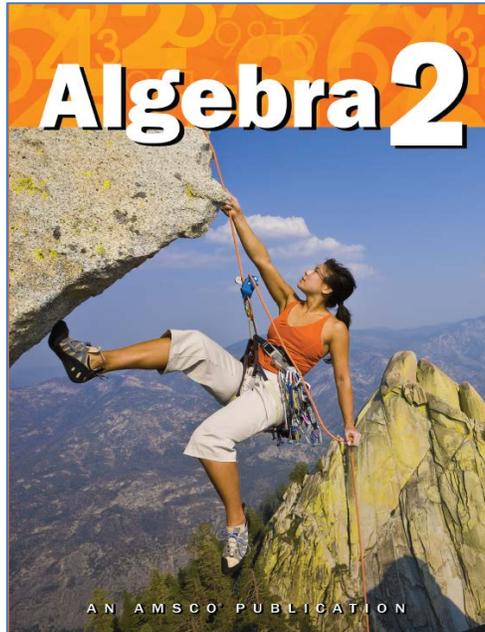


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AMSCO Algebra 2

alignment to

Minnesota Standards

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AMSCO Algebra 2 Alignment to Minnesota Standards

No.	Benchmark	AMSCO A2 Lesson
9.2.1.1	Understand the definition of a function. Use functional notation and evaluate a function at a given point in its domain.	R.3
9.2.1.2	Distinguish between functions and other relations defined symbolically, graphically or in tabular form.	R.3
9.2.1.3	Find the domain of a function defined symbolically, graphically or in a real- world context. For example: The formula $f(x) = \pi x^2$ can represent a function whose domain is all real numbers, but in the context of the area of a circle, the domain would be restricted to positive x .	R.3, 1.1, 2.8, 3.5, 3.8, 4.4, 5.5, 6.2, 6.3, 6.4, 7.2, 9.5, 9.6
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 $f(x) = ax^2 + bx + c$, in the form $f(x) = a(x - h)^2 + k$, or in factored form.	R.6, 1.3, 2.6, 2.7, 2.8
9.2.1.6	Identify intercepts, zeros, maxima, minima and intervals of increase and decrease from the graph of a function.	R.2, 1.1, 1.3, 2.7, 3.5, 3.7, 4.4, 5.5, 6.1, 6.2, 6.4, 7.2, 7.3, 7.5, 8.1, 8.3, 8.4, 9.5, 9.7
9.2.1.7	Understand the concept of an asymptote and identify asymptotes for exponential functions and reciprocals of linear functions, using symbolic and graphical methods.	1.1, 4.4, 6.1, 7.2, 8.4
9.2.1.8	Make qualitative statements about the rate of change of a function, based on its graph or table of values.	R.2, 1.1, 3.8, 6.1, 7.5
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.	R.6, 1.1, 4.4, 6.1, 7.2, 9.5
9.2.2.1	Represent and solve problems in various contexts using linear and quadratic functions.	R.4, 2.7
9.2.2.2	Represent and solve problems in various contexts using exponential functions, such as investment growth, depreciation and population growth.	6.2, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6
9.2.2.4	Express the terms in a geometric sequence recursively and by giving an explicit (closed form) formula, and express the partial sums of a geometric series recursively.	8.3, 8.4
9.2.2.5	Recognize and solve problems that can be modeled using finite geometric sequences and series, such as home mortgage and other compound interest examples. Know how to use spreadsheets and calculators to explore geometric sequences and series in various contexts.	8.3, 8.4

AMSCO Algebra 2 Alignment to Minnesota Standards

No.	Benchmark	AMSCO A2 Lesson
9.2.2.6	Sketch the graphs of common non-linear functions such as $f(x) = \sqrt{x}$, $f(x) = 1/x$, $f(x) = x^3$, and translations of these functions, such as $f(x) = \sqrt{x-2}+4$. Know how to use graphing technology to graph these functions.	R.3, R.6, 2.4, 2.6, 3.5, 3.9, 4.4, 5.5, 6.1, 6.2, 6.4
9.2.3.1	Evaluate polynomial and rational expressions and expressions containing radicals and absolute values at specified points in their domains.	
9.2.3.2	Add, subtract and multiply polynomials; divide a polynomial by a polynomial of equal or lower degree.	3.1, 3.2, 3.3
9.2.3.3	Factor common monomial factors from polynomials, factor quadratic polynomials, and factor the difference of two squares. For example: $9x^2 - x^4 = (3x^2 - x^2)(3x^2 + x^2)$.	2.1, 2.2, 2.3
9.2.3.4	Add, subtract, multiply, divide and simplify algebraic fractions.	4.1, 4.2
9.2.3.5	Check whether a given complex number is a solution of a quadratic equation by substituting it for the variable and evaluating the expression, using arithmetic with complex numbers.	2.5, 2.6, 3.5, 3.6, 3.9
9.2.3.6	Apply the properties of positive and negative rational exponents to generate equivalent algebraic expressions, including those involving n th roots.	5.1, 5.2, 5.3
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
9.2.4.1	Represent relationships in various contexts using quadratic equations and inequalities. Solve quadratic equations and inequalities by appropriate methods including factoring, completing the square, graphing and the quadratic formula. Find non-real complex roots when they exist. Recognize that a particular solution may not be applicable in the original context. Know how to use calculators, graphing utilities or other technology to solve quadratic equations and inequalities.	2.3, 2.4, 2.5, 2.6, 2.7, 2.8
9.2.4.2	Represent relationships in various contexts using equations involving exponential functions; solve these equations graphically or numerically. Know how to use calculators, graphing utilities or other technology to solve these equations.	6.1, 6.2, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6
9.2.4.3	Recognize that to solve certain equations, number systems need to be extended from whole numbers to integers, from integers to rational numbers, from rational numbers to real numbers, and from real numbers to complex numbers. In particular, non-real complex numbers are needed to solve some quadratic equations with real coefficients.	2.5, 2.6

AMSCO Algebra 2 Alignment to Minnesota Standards		
No.	Benchmark	AMSCO A2 Lesson
9.2.4.4	Represent relationships in various contexts using systems of linear inequalities; solve them graphically. Indicate which parts of the boundary are included in and excluded from the solution set using solid and dotted lines.	R.4
9.2.4.5	Solve linear programming problems in two variables using graphical methods.	R.4, 1.3
9.2.4.7	Solve equations that contain radical expressions. Recognize that extraneous solutions may arise when using symbolic methods.	5.4
9.2.4.8	Assess the reasonableness of a solution in its given context and compare the solution to appropriate graphical or numerical estimates; interpret a solution in the original context.	1.2, 1.3, 2.7, 3.8, 6.2, 7.5
9.4.1.4	Use the mean and standard deviation of a data set to fit it to a normal distribution (bell-shaped curve) and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets and tables to estimate areas under the normal curve.	10.5
9.4.2.1	Evaluate reports based on data published in the media by identifying the source of the data, the design of the study, and the way the data are analyzed and displayed. Show how graphs and data can be distorted to support different points of view. Know how to use spreadsheet tables and graphs or graphing technology to recognize and analyze distortions in data displays.	10.7
9.4.3.2	Calculate experimental probabilities by performing simulations or experiments involving a probability model and using relative frequencies of outcomes.	10.6, 10.7
9.4.3.3	Understand that the Law of Large Numbers expresses a relationship between the probabilities in a probability model and the experimental probabilities found by performing simulations or experiments involving the model.	10.1
9.4.3.5	Apply probability concepts such as intersections, unions and complements of events, and conditional probability and independence, to calculate probabilities and solve problems.	10.1, 10.2, 10.3
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.	10.1, 10.2, 10.3
9.4.3.7	Understand and use simple probability formulas involving intersections, unions and complements of events.	10.2, 10.4