Mathematics Textbook and Instructional Materials Correlation to the
2009 Algebra II Standards of Learning and Curriculum Framework

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2009 Algebra II Standards of Learning	
STANDARD	**Correlation: Must address both the standards and the curriculum framework. Use page number and SE for Student Edition or CT for Core Technology. (Identify no more than 8 correlations.)**
AII.1　The student, given rational, radical, or polynomial expressions, will	
a)　add, subtract, multiply, divide, and simplify rational algebraic expressions;	pp. 438–442 SE, pp. 443–446 SE, and pp. 452–456 SE
b)　add, subtract, multiply, divide, and simplify radical expressions containing rational numbers and variables, and expressions containing rational exponents;	pp. 202–206 SE, pp. 207–212 SE, and pp. 213–217 SE
c)　write radical expressions as expressions containing rational exponents and vice versa; and	pp.213–217 SE

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STANDARD	**Correlation: Must address both the standards and the curriculum framework. Use page number and SE for Student Edition or CT for Core Technology. (Identify no more than 8 correlations.)**
d) factor polynomials completely.	pp. 398–402 SE, pp. 403–407 SE, and pp.408–412 SE

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STANDARD	**Correlation: Must address both the standards and the curriculum framework. Use page number and SE for Student Edition or CT for Core Technology. (Identify no more than 8 correlations.)**
AII.2 The student will investigate and apply the properties of arithmetic and geometric sequences and series to solve real-world problems, including writing the first n terms, finding the nth term, and evaluating summation formulas. Notation will include Σ and a_n.	pp. 476–480 SE, pp. 481–486 SE, pp.487–492 SE, pp. 493–498 SE, and pp. 506–513

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AII.3 The student will perform operations on complex numbers, express the results in simplest form using patterns of the powers of *i*, and identify field properties that are valid for the complex numbers.	pp. 223–227 SE

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AII.4 The student will solve, algebraically and graphically,	
a) absolute value equations and inequalities;	pp. 17–22 SE
b) quadratic equations over the set of complex numbers;	pp. 244–248 SE, pp. 249–252 SE, pp. 253–258 SE, pp. 259–264 SE, and pp. 270–273 SE
Graphing calculators will be used for solving and for confirming the algebraic solutions.	

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STANDARD	**Correlation: Must address both the standards and the curriculum framework. Use page number and SE for Student Edition or CT for Core Technology. (Identify no more than 8 correlations.)**
c) equations containing rational algebraic expressions; and	pp. 447–451 SE
d) equations containing radical expressions.	pp. 218–222 SE
Graphing calculators will be used for solving and for confirming the algebraic solutions.	

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STANDARD	**Correlation: Must address both the standards and the curriculum framework. Use page number and SE for Student Edition or CT for Core Technology. (Identify no more than 8 correlations.)**
AII.5 The student will solve nonlinear systems of equations, including linear-quadratic and quadratic-quadratic, algebraically and graphically. Graphing calculators will be used as a tool to visualize graphs and predict the number of solutions.	pp. 323–327 SE

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AII.6 The student will recognize the general shape of function (absolute value, square root, cube root, rational, polynomial, exponential, and logarithmic) families and will convert between graphic and symbolic forms of functions. A transformational approach to graphing will be employed. Graphing calculators will be used as a tool to investigate the shapes and behaviors of these functions.	pp. 172–178 SE, pp. 179–183 SE, pp. 244–248 SE, pp. 342–347 SE, pp.348–353 SE, pp. 408–412 SE, and pp. 432–437 SE

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AII.7 The student will investigate and analyze functions algebraically and graphically. Key concepts include	
a) domain and range, including limited and discontinuous domains and ranges;	pp. 154–160 SE and pp. 432–437 SE
b) zeros;	pp. 244–248 SE, pp. 259–264 SE and pp. 408–412 SE
Graphing calculators will be used as a tool to assist in investigation of functions.	

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STANDARD	**Correlation: Must address both the standards and the curriculum framework. Use page number and SE for Student Edition or CT for Core Technology. (Identify no more than 8 correlations.)**
c) *x*- and *y*-intercepts;	p. 25 SE
d) intervals in which a function is increasing or decreasing;	Additional material covered in supplemental material. Available for free download at: www.cordcommunications.com.
e) asymptotes;	pp. 342–347 SE and pp. 432–437 SE
f) end behavior;	topic can be addressed with p. 420 SE. Additional material covered in supplemental material. Available for free download at: www.cordcommunications.com.
g) inverse of a function; and	pp. 168–171 SE
h) composition of multiple functions.	p. 161–167 SE
Graphing calculators will be used as a tool to assist in investigation of functions.	

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STANDARD	**Correlation: Must address both the standards and the curriculum framework. Use page number, and SE for Student Edition or CT for Core Technology. (Identify no more than 8 correlations.)**
AII.8 The student will investigate and describe the relationships among solutions of an equation, zeros of a function, *x*-intercepts of a graph, and factors of a polynomial expression.	pp. 244–248 SE, pp. 259–264 SE and pp. 408–412 SE

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<tr><td>AII.9   The student will collect and analyze data, determine the equation of the curve of best fit, make predictions, and solve real-world problems, using mathematical models. Mathematical models will include polynomial, exponential, and logarithmic functions.</td><td>pp. 36–42 SE and pp. 344–345 SE</td></tr>
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<tr><td>AII.10   The student will identify, create, and solve real-world problems involving inverse variation, joint variation, and a combination of direct and inverse variations.</td><td>pp. 457–461 SE</td></tr>
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STANDARD	**Correlation: Must address both the standards and the curriculum framework. Use page number and SE for Student Edition or CT for Core Technology. (Identify no more than 8 correlations.)**
AII.11 The student will identify properties of a normal distribution and apply those properties to determine probabilities associated with areas under the standard normal curve.	Covered in Algebra 1 Lesson 7.6

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AII.12 The student will compute and distinguish between permutations and combinations and use technology for applications.	pp. 623–626 SE and pp. 627–630 SE