Grades 9-12

Prentice Hall

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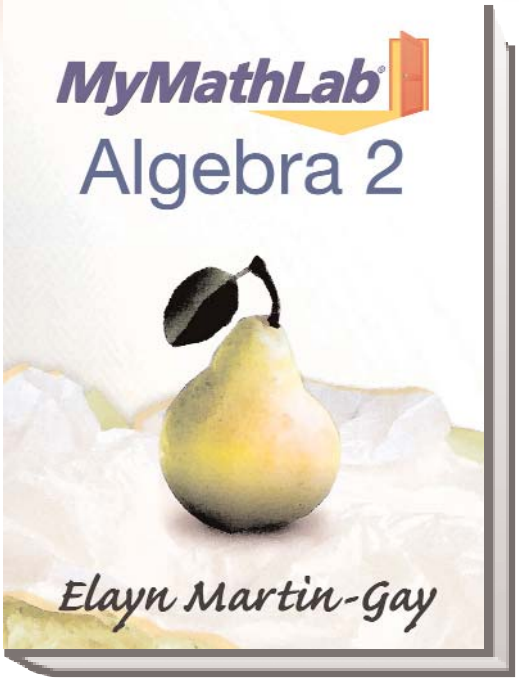

CORRELATED TO

Alabama Course of Study, 2009 Draft: Algebra II

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Correlated to:
Alabama Course of Study Adopted Draft, April 2009, for Algebra II

ALABAMA COURSE OF STUDY ADOPTED DRAFT, APRIL 2009, FOR ALGEBRA II	MYMATHLAB ALGEBRA 2 © 2011
ALGEBRA II	
Number and Operations	
Students will:	
1. Determine relationships among subsets of complex numbers.	**SE/TE:** 1.2, 8.7
2. Use order of operations, conjugates, and absolute value to simplify expressions involving complex numbers.	**SE/TE:** 8.7
Algebra	
3. Determine effects of shifts, reflections, and dilations on families of functions, including $y=k/x$ (inverse variation), $y=kx$(direct variation/linear), $y=x^2$(quadratic), $y=a^x$ (exponential), and $y=\log_a x$(logarithmic).	**SE/TE:** 3.6, 10.3, 10.4, 11.3, GA.13
• Identifying the domain and range of a relation given its graph, a table of values, or its equation, including those with restricted domains	**SE/TE:** 3.2, 7.1, 11.3
• Identifying application-based situations corresponding to families of functions	**SE/TE:** 7.7, 8.6, 9.1, 9.2, 9.3, 10.3, 10.6, 11.4
4. Determine the nature of solutions of a quadratic equation.	**SE/TE:** 9.2
5. Determine approximate real zeros of functions graphically and numerically and exact real zeros of polynomial functions by completing the square and applying the zero product property and the quadratic formula.	**SE/TE:** 9.4, 9.5
• Deriving the quadratic formula	**SE/TE:** 9.2
6. Identify characteristics, including maximum and minimum values, of quadratic functions from their roots, graphs, or equations.	**SE/TE:** 11.2
• Determining a quadratic equation when given its graph or roots	**SE/TE:** 11.1
• Constructing the graph of a function when given its equation	**SE/TE:** 11.1, 11.2
• Using the maximum or minimum value of a quadratic function to solve application-based problems	**SE/TE:** 11.2
7. Perform operations, including addition, subtraction, multiplication, division, and composition of functions, with polynomial and rational expressions containing variables.	**SE/TE:** 6.3, 6.4, 7.1, 7.2, 7.4, 10.1
• Determining the inverse of a function or a relation	**SE/TE:** 10.2
• Evaluating rational functions	**SE/TE:** 7.1, 8.1

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8. Apply laws of exponents to simplify expressions, including those containing zero and negative integral exponents.	**SE/TE:** 6.1, 6.2, 7.3
• Applying laws of logarithms to simplify expressions and solve equations	**SE/TE:** 10.4, 10.5
9. Solve equations, inequalities, and applied problems involving rational and irrational exponents, absolute values, radicals, and quadratics over complex numbers, as well as exponential and logarithmic functions with the solution represented as a graph on a number line, set notation, and interval notation.	**SE/TE:** 2.4, 2.6, 2.7, 3.1, 8.6, 9.1, 9.3, 9.6, 10.3, 10.6, 10.7
10. Solve systems of linear equations or inequalities in two and three variables using algebraic techniques, including those involving matrices.	**SE/TE:** 4.1, 4.2, 4.4, 4.5, 5.3, 5.5, 11.7
• Calculating the determinant of a matrix 2 x 2 and a 3 x 3	**SE/TE:** 5.3
• Solving two- and three-variable word problems involving application-based situations	**SE/TE:** 4.3
Geometry	
11. Solve coordinate geometry problems using algebraic techniques.	**SE/TE:** GA.7
Data Analysis and Probability	
12. Use multiple representations, including graphical, numerical, analytical, and verbal, to compare characteristics of data gathered from two populations.	**SE/TE:** 8.8
• Identifying characteristics of the design of an experimental study	**SE/TE:** Appendix D
• Describing effects of an experimental study design on its outcome	**SE/TE:** Appendix D
• Predicting population characteristics using sample statistics	**SE/TE:** 8.8
• Identifying characteristics, including the mean and standard deviation of a normal distribution	**SE/TE:** 8.8, 13.8
13. Analyze data to determine if a linear or quadratic relationship exists.	**SE/TE:** 3.2
• Determining an equation of linear regression from a set of data to predict outcomes	**SE/TE:** 3.2, 4.6
14. Calculate probabilities of events using permutations, combinations, the laws of probability, and the binomial theorem.	**SE/TE:** 12.5, 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, GA.10
• Calculating conditional probability	**SE/TE:** 13.7