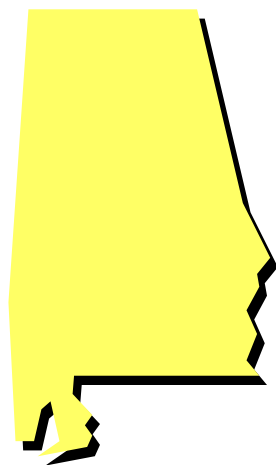
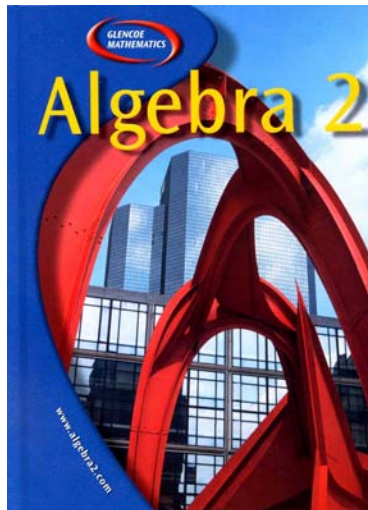


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correlated to

**Alabama Course of Study:
Algebra II**

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**ALABAMA
COURSE OF STUDY: ALGEBRA II**

OBJECTIVES	PAGE REFERENCES
Number and Operations	
Students will:	
1. Determine the relationships among the subsets of complex numbers.	SE: 270–275, 280, 315, 374–375 TWE: 270–275, 280, 315, 374–375
2. Simplify expressions involving complex numbers, using order of operations and including conjugate and absolute value.	SE: 270–275, 315–316, 372, 374–375 TWE: 270–275, 315–316, 372, 374–375
3. Analyze families of functions, including shifts, reflections, and dilations of $y = k/x$ (inverse variation), $y = kx$ (direct variation/linear), $y = x^2$ (quadratic), $y = a^x$ (exponential), and $y = \log_a x$ (logarithmic).	
<ul style="list-style-type: none"> • Identifying the domain and range of a relation given its graph, a table of values, or its equation, including those with restricted domains 	SE: 56–61, 93–95, 99–101, 104, 181, 397–398, 416, 523, 527–528, 830–831 TWE: 56–61, 93–95, 99–101, 104, 181, 397–398, 416, 523, 527–528, 830–831
<ul style="list-style-type: none"> • Identifying real-world situations corresponding to families of functions 	SE: 93–94 TWE: 93–94
4. Determine approximate real zeros of functions graphically and numerically and exact real zeros of polynomial functions.	
<ul style="list-style-type: none"> • Using completing the square, the zero product property, and the quadratic formula 	SE: 301–305, 306–312, 313–319, 345, 361–362, 370, 460, 841 TWE: 301–305, 306–312, 313–319, 345, 361–362, 370, 460, 841

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OBJECTIVES	PAGE REFERENCES
5. Identify the characteristics of quadratic functions from their roots, graphs, or equations.	
<ul style="list-style-type: none"> • Writing an equation when given its roots or graph 	SE: 303, 374–376 TWE: 303, 374–376
<ul style="list-style-type: none"> • Graphing a function when given its equation 	SE: 110–115, 123–127, 286–293, 294–299, 335–337, 348–349, 353–358, 395–396, 397–399, 420–423, 428–429, 435–437, 523–524, 762–768, 846–847 TWE: 110–115, 123–127, 286–293, 294–299, 335–337, 348–349, 353–358, 395–396, 397–399, 420–423, 428–429, 435–437, 523–524, 762–768, 846–847
<ul style="list-style-type: none"> • Determining the nature of the solutions of a quadratic equation 	SE: 313–319, 326–329, 339 TWE: 313–319, 326–329, 339
<ul style="list-style-type: none"> • Determining the maximum or minimum values of quadratic functions both graphically and algebraically 	SE: 288–290, 354–356, 358, 364 TWE: 288–290, 354–356, 358, 364
6. Perform operations on functions, including addition, subtraction, multiplication, division, and composition.	
<ul style="list-style-type: none"> • Determining the inverse of a function or a relation 	SE: 390–394, 399, 404–405, 521, 531, 617, 699, 749, 844, 859 TWE: 390–394, 399, 404–405, 521, 531, 617, 699, 749, 844, 859
<ul style="list-style-type: none"> • Performing operations on polynomial and rational expressions containing variables 	SE: 390–394, 399, 404–405, 521, 531, 617, 699, 749, 844, 859 TWE: 390–394, 399, 404–405, 521, 531, 617, 699, 749, 844, 859

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OBJECTIVES	PAGE REFERENCES
<ul style="list-style-type: none"> Constructing graphs by analyzing their functions as sums or differences 	<p>The opportunity to address this objective is available. See the following:</p> <p>SE: 383, 387</p> <p>TWE: 383, 387</p>
7. Solve equations, inequalities, and applied problems involving absolute values, radicals, and quadratics over the complex numbers, as well as exponential and logarithmic functions.	
<ul style="list-style-type: none"> Solving equations using laws of exponents, including rational and irrational exponents 	<p>SE: 222–228, 257–262, 264–267, 279–280, 361–362, 526, 532, 535–536, 570, 604–607</p> <p>TWE: 222–228, 257–262, 264–267, 279–280, 361–362, 526, 532, 535–536, 570, 604–607</p>
<ul style="list-style-type: none"> Expressing the solution of an equation, inequality, or applied problem as a graph on a number line or by using set or interval notation 	<p>SE: 35, 37, 40–41, 44, 46, 51, 829</p> <p>TWE: 35, 37, 40–41, 44, 46, 51, 829</p>
Algebra II	
8. Solve systems of linear equations or inequalities in two variables using algebraic techniques, including those involving matrices.	
<ul style="list-style-type: none"> Evaluating the determinant of a 2x2 or 3x3 matrix 	<p>SE: 182–188, 189–191, 212, 835</p> <p>TWE: 182–188, 189–191, 212, 835</p>
<ul style="list-style-type: none"> Solving word problems involving real-life situations 	<p>This objective is addressed throughout. See, for example:</p> <p>SE: 26, 72, 122, 194, 237, 319, 334, 425, 438, 459, 490, 550, 642, 670, 737, 795, 869</p> <p>TWE: 26, 72, 122, 194, 237, 319, 334, 425, 438, 459, 490, 550, 642, 670, 737, 795, 869</p>

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OBJECTIVES	PAGE REFERENCES
Geometry	
9. Solve coordinate geometry problems using algebraic techniques.	SE: 175–178, 185, 390–391, 412–413, 417–418, 433–434 TWE: 175–178, 185, 390–391, 412–413, 417–418, 433–434
Data Analysis and Probability	
10. Use different forms of representation to compare characteristics of data gathered from two populations.	
<ul style="list-style-type: none"> • Evaluating the appropriateness of the design of an experimental study 	SE: 682–685 TWE: 682–685
<ul style="list-style-type: none"> • Describing how sample statistics reflect values of population parameters 	SE: 682–685 TWE: 682–685
11. Determine an equation of linear regression from a set of data.	
<ul style="list-style-type: none"> • Examining data to determine if a linear or quadratic relationship exists and to predict outcomes 	SE: 81–87, 95, 99, 103, 598, 831 TWE: 81–87, 95, 99, 103, 598, 831
12. Calculate probabilities of events using the laws of probability.	
<ul style="list-style-type: none"> • Using permutations and combinations to calculate probabilities 	SE: 644–647, 651–654, 658–660 TWE: 644–647, 651–654, 658–660
<ul style="list-style-type: none"> • Calculating conditional probability 	SE: 653–656 TWE: 653–656
<ul style="list-style-type: none"> • Calculating probabilities of mutually exclusive events, independent events, and dependent events 	SE: 632–635, 651–654, 658–659, 661, 670, 687–690, 854–855 TWE: 632–635, 651–654, 658–659, 661, 670, 687–690, 854–855

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