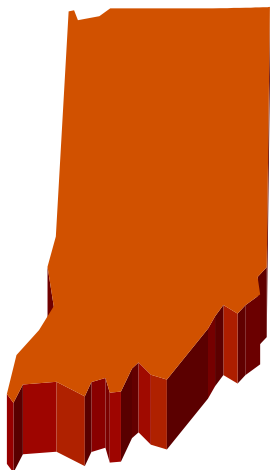
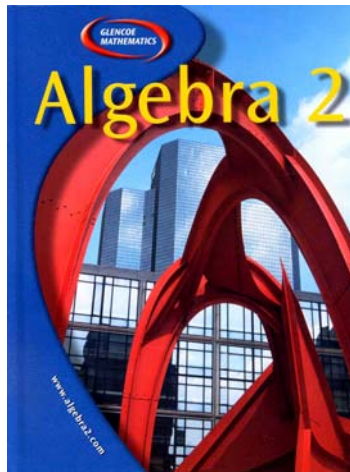


Glencoe/McGraw-Hill

Algebra 2 ©2003

ISBN # 0-07-827999-2



alignment to

**Indiana
Academic Mathematics Standards
Algebra II**

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES	PAGE REFERENCES
Relations and Functions	
Students graph relations and functions and find zeros. They use function notation and combine functions by composition. They interpret functions in given situations.	
A2.1.1 Recognize and graph various types of functions, including polynomial, rational, and algebraic functions.	PE: 348–349, 353–358, 401, 485–490, 499–504, 514–515, 577, 768, 848, 863 TWE: 348–349, 353–358, 401, 485–490, 499–504, 514–515, 577, 768, 848, 863
A2.1.2 Use function notation. Add, subtract, multiply, and divide pairs of functions.	PE: 59, 383–386, 403, 384, 474, 480, 513, 514 TWE: 59, 383–386, 403, 384, 474, 480, 513, 514
A2.1.3 Understand composition of functions and combine functions by composition.	PE: 384–386, 521, 530, 532 TWE: 384–386, 521, 530, 532
A2.1. 4 Graph relations and functions with and without graphing technology.	PE: 58–59, 65, 69–71, 90–92, 286–290, 348–349, 353–359, 401, 486–487, 491, 577, 766, 768, 770–773, 798, 863 TWE: 58–59, 65, 69–71, 90–92, 286–290, 348–349, 353–359, 401, 486–487, 491, 577, 766, 768, 770–773, 798, 863
A2.1.5 Find the zeros of a function.	PE: 348–349, 354, 371, 376, 379, 381, 394, 403, 675, 843 TWE: 348–349, 354, 371, 376, 379, 381, 394, 403, 675, 843

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES		PAGE REFERENCES	
A2.1.6	Solve an inequality by examining the graph.	PE:	96–99, 104, 109, 115, 657, 680, 832, 841, 844
		TWE:	96–99, 104, 109, 115, 657, 680, 832, 841, 844
A2.1.7	Graph functions defined piecewise.	PE:	90–91, 92, 104, 115, 370, 831
		TWE:	90–91, 92, 104, 115, 370, 831
A2.1.8	Interpret given situations as functions in graphs, formulas, and words.	PE:	6–10, 25, 47–48, 122, 313–319, 339, 344–347, 348–349, 353–358, 370–371, 400–401, 460, 841
		TWE:	6–10, 25, 47–48, 122, 313–319, 339, 344–347, 348–349, 353–358, 370–371, 400–401, 460, 841
Linear and Absolute Value Equations and Inequalities			
Students solve systems of linear equations and inequalities and use them to solve word problems. They model data with linear equations.			
A2.2.1	Graph absolute value equations and inequalities.	PE:	91–92, 97, 299, 335, 829
		TWE:	91–92, 97, 299, 335, 829
A2.2.2	Use substitution, elimination, and matrices to solve systems of two or three equations in two or three variables.	PE:	116–122, 138–144, 146, 148, 149, 153, 157–158, 161–166, 205, 206, 214, 215, 832
		TWE:	116–122, 138–144, 146, 148, 149, 153, 157–158, 161–166, 205, 206, 214, 215, 832

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES	PAGE REFERENCES
A2.2.3 Use systems of equations and inequalities to solve word problems.	PE: 116, 120–122, 138, 140–144, 147–148, 149, 157–158, 161–166, 205, 206–207, 215, 832 TWE: 116, 120–122, 138, 140–144, 147–148, 149, 157–158, 161–166, 205, 206–207, 215, 832
A2.2.4 Find a linear equation that models a data set using the median fit method and use the model to make predictions.	PE: 81–86, 87 TWE: 81–86, 87
Quadratic Equations and Functions	
Students solve quadratic equations, including the use of complex numbers. They interpret maximum and minimum values of quadratic functions. They solve equations that contain square roots.	
A2.3.1 Define complex numbers and perform basic operations with them.	PE: 270–275, 280, 370, 374–375 TWE: 270–275, 280, 370, 374–375
A2.3.2 Understand how real and complex numbers are related, including plotting complex numbers as points in the plane.	PE: 110, 270–275, 280, 370, 374–375, 721 TWE: 110, 270–275, 280, 370, 374–375, 721
A2.3.3 Solve quadratic equations in the complex number system.	PE: 294–299, 301–305, 306–312, 315, 328, 337–338, 345, 352, 370, 389, 411, 455–460, 461, 466, 490, 587, 840 TWE: 294–299, 301–305, 306–312, 315, 328, 337–338, 345, 352, 370, 389, 411, 455–460, 461, 466, 490, 587, 840

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES		PAGE REFERENCES	
A2.3.4	Graph quadratic functions. Apply transformations to quadratic functions. Find and interpret the zeros and maximum or minimum value of quadratic functions.	PE:	129, 158, 286–293, 322–328, 336–337, 339–340, 354–356, 358, 364, 663, 839
		TWE:	129, 158, 286–293, 322–328, 336–337, 339–340, 354–356, 358, 364, 663, 839
A2.3.5	Solve word problems using quadratic equations.	PE:	129, 158, 286–293, 322–328, 336–337, 339–340, 354–356, 358, 364, 663, 839 389
		TWE:	129, 158, 286–293, 322–328, 336–337, 339–340, 354–356, 358, 364, 663, 839 389
A2.3.6	Solve equations that contain radical expressions.	PE:	263–269, 280, 362
		TWE:	263–269, 280, 362
A2.3.7	Solve pairs of equations, one quadratic and one linear, or both quadratic.	PE:	455–457
		TWE:	455–457
Conic Sections			
Students write equations of conic sections and draw their graphs.			
A2.4.1	Write the equations of conic sections (circle, ellipse, parabola, and hyperbola).	PE:	419, 421–425, 426–431, 434–440, 441–448, 449–452, 453–454, 457–460, 461–466, 467, 869
		TWE:	419, 421–425, 426–431, 434–440, 441–448, 449–452, 453–454, 457–460, 461–466, 467, 869

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES	PAGE REFERENCES
A2.4.2 Graph conic sections.	PE: 420–423, 428–429, 435–437, 441–448, 449–452, 453–454, 457–460, 461–466, 467, 846, 869 TWE: 420–423, 428–429, 435–437, 441–448, 449–452, 453–454, 457–460, 461–466, 467, 846, 869

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES	PAGE REFERENCES
Polynomials	
Students use the binomial theorem, divide and factor polynomials, and solve polynomial equations.	
A2.5.1 Understand the binomial theorem and use it to expand binomial expressions raised to positive integer powers.	PE: 612–617, 625–626 TWE: 612–617, 625–626
A2.5.2 Divide polynomials by others of lower degree.	PE: 233–236, 242, 277, 364, 365–366 TWE: 233–236, 242, 277, 364, 365–366
A2.5.3 Factor polynomials completely and solve polynomial equations by factoring.	PE: 239–241, 278, 358, 366, 377, 761, 815–816, 837 TWE: 239–241, 278, 358, 366, 377, 761, 815–816, 837
A2.5.4 Use graphing technology to find approximate solutions for polynomial equations.	PE: 205, 241, 296, 307, 309, 355–356, 359, 367, 457 TWE: 205, 241, 296, 307, 309, 355–356, 359, 367, 457
A2.5.6 Use polynomial equations to solve word problems.	PE: 231, 237–238, 239, 243, 247–249, 363–364, 367–370, 376–377, 381–382 TWE: 231, 237–238, 239, 243, 247–249, 363–364, 367–370, 376–377, 381–382
A2.5.6 Write a polynomial equation given its solutions.	PE: 239, 368–370, 374–377 TWE: 239, 368–370, 374–377

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES	PAGE REFERENCES
A2.5.7 Understand and describe the relationships among the solutions of an equation, the zeros of a function, the x -intercepts of a graph, and the factors of a polynomial expression.	PE: 348–352, 353–358, 371–377, 378–382, 394, 400, 403, 675, 843 TWE: 348–352, 353–358, 371–377, 378–382, 394, 400, 403, 675, 843
Algebraic Fractions	
Students use negative and fractional exponents. They simplify algebraic fractions and solve equations involving algebraic fractions. They solve problems of direct, inverse, and joint variation.	
A2.6.1 Understand and use negative and fractional exponents.	PE: 222–225, 257–262, 264, 361–362, 838 TWE: 222–225, 257–262, 264, 361–362, 838
A2.6.2 Add, subtract, multiply, divide, and simplify algebraic fractions.	PE: 474–475, 480–481, 505–509, 513–514 TWE: 474–475, 480–481, 505–509, 513–514
A2.6.3 Simplify complex fractions.	PE: 472–475, 480–481 TWE: 472–475, 480–481
A2.6.4 Solve equations involving algebraic fractions.	PE: 493–495, 505–509, 512, 516 TWE: 493–495, 505–509, 512, 516
A2.6.5 Solve word problems involving fractional equations.	PE: 494–497, 505–512, 516 TWE: 494–497, 505–512, 516

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES	PAGE REFERENCES
A2.6.6 Solve problems of direct, inverse, and joint variation.	PE: 492, 495, 496, 499, 500, 502, 515, 517, 559, 650, 848 TWE: 492, 495, 496, 499, 500, 502, 515, 517, 559, 650, 848
Logarithmic and Exponential Functions	
Students graph exponential functions and relate them to logarithms. They solve logarithmic and exponential equations and inequalities. They solve word problems using exponential functions.	
A2.7.1 Graph exponential functions.	PE: 523–224, 531, 539–540 TWE: 523–524, 531, 539–540
A2.7.2 Prove simple laws of logarithms.	PE: 534, 541–543, 548–549 TWE: 534, 541–543, 548–549
A2.7.3 Understand and use the inverse relationship between exponents and logarithms.	PE: 527, 531–533, 541–543, 548–549, 554–556 TWE: 527, 531–533, 541–543, 548–549, 554–556
A2.7.4 Solve logarithmic and exponential equations and inequalities.	PE: 525–527, 533–534, 543, 546–548, 552–553, 555–556, 560–562 TWE: 525–527, 533–534, 543, 546–548, 552–553, 555–556, 560–562
A2.7.5 Use the definition of logarithms to convert logarithms from one base to another.	PE: 548, 569 TWE: 548, 569
A2.7.6 Use the properties of logarithms to simplify logarithmic expressions and to find their approximate values.	PE: 532–534, 541–546, 548–549, 568 TWE: 532–534, 541–546, 548–549, 568

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES		PAGE REFERENCES	
A2.7.7	Use calculators to find decimal approximations of natural and common logarithmic numeric expressions.	PE:	547–553, 554–559, 569, 617
		TWE:	547–553, 554–559, 569, 617
A2.7.8	Solve word problems involving applications of exponential functions to growth and decay.	PE:	524–525, 528, 560–565, 567, 570, 849
		TWE:	524–525, 528, 560–565, 567, 570, 849
Sequences and Series			
Students define and use arithmetic and geometric sequences and series.			
A2.8.1	Define arithmetic and geometric sequences and series.	PE:	578–580, 583–585, 588–590, 594–596, 599
		TWE:	578–580, 583–585, 588–590, 594–596, 599
A2.8.2	Find specified terms of arithmetic and geometric sequences.	PE:	578–583, 588–593, 594–598, 599–604, 622–624, 768, 781, 851–852
		TWE:	578–583, 588–593, 594–598, 599–604, 622–624, 768, 781, 851–852
A2.8.3	Find partial sums of arithmetic and geometric series.	PE:	578–583, 588–593, 594–598, 599–604, 622–624, 768, 781, 851–852
		TWE:	578–583, 588–593, 594–598, 599–604, 622–624, 768, 781, 851–852
A2.8.4	Solve word problems involving applications of sequences and series.	PE:	578–583, 588–593, 594–598, 599–604, 606–610, 622–624, 768, 781, 851–852
		TWE:	578–583, 588–593, 594–598, 599–604, 606–610, 622–624, 768, 781, 851–852

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES	PAGE REFERENCES
Counting Principles and Probability	
Students use fundamental counting principles to compute combinations, permutations, and probabilities.	
A2.9.1 Understand and apply counting principles to compute combinations and permutations.	PE: 632–637, 638–643, 644, 650, 687–688, 715 TWE: 632–637, 638–643, 644, 650, 687–688, 715
A2.9.2 Use the basic counting principle, combinations, and permutations to compute probabilities.	PE: 631, 644–650, 651–657, 658–663, 687–688, 715 TWE: 631, 644–650, 651–657, 658–663, 687–688, 715
Mathematical Reasoning and Problem Solving	
Students use a variety of strategies to solve problems.	
A2.10.1 Use a variety of problem-solving strategies, such as drawing a diagram, guess-and-check, solving a simpler problem, writing an equation, and working backwards.	PE: 19, 23, 81–83, 111, 124, 140–141, 203, 240, 289, 295–296, 355, 396, 507–508, 539–540, 611, 703, 716, 748, 854, 862–875 TWE: 19, 23, 81–83, 111, 124, 140–141, 203, 240, 289, 295–296, 355, 396, 507–508, 539–540, 611, 703, 716, 748, 854, 862–875
A2.10.2 Decide whether a solution is reasonable in the context of the original situation.	PE: 85, 263–264 TWE: 85, 263–264

**GLENCOE/MCGRAW-HILL
ALGEBRA II ©2003**

ALIGNMENT TO

**INDIANA
ACADEMIC MATHEMATICS STANDARDS FOR**

ALGEBRA II

OBJECTIVES	PAGE REFERENCES
Students develop and evaluate mathematical arguments and proofs.	
A2.10.3 Decide if a given algebraic statement is true always, sometimes, or never (statements involving rational or radical expressions, logarithmic or exponential functions)	PE: 24, 30–31, 226–227, 242, 247, 249, 254–255, 267, 267, 310, 476, 482 TWE: 24, 30–31, 226–227, 242, 247, 249, 254–255, 267, 267, 310, 476, 482
A2.10.4 Use the properties of number systems and the order of operations to justify the steps of simplifying functions and solving equations.	PE: 6–7, 21, 23, 28–30, 33, 244, 566, 618–619, 781 TWE: 6–7, 21, 23, 28–30, 33, 244, 566, 618–619, 781
A2.10.5 Understand that the logic of equation solving begins with the assumption that the variable is a number that satisfies the equation, and that the steps taken when solving equations create new equations that have, in most cases, the same solution set as the original. Understand that similar logic applies to solving systems of equations simultaneously.	PE: 7, 22, 25, 59, 109, 116–122, 138–144, 146, 148, 149, 153, 157–158, 161–166, 205, 206, 214, 215, 389, 832 TWE: 7, 22, 25, 59, 109, 116–122, 138–144, 146, 148, 149, 153, 157–158, 161–166, 205, 206, 214, 215, 389, 832
A2.10.6 Use counterexamples to show that statements are false	PE: 14, 16, 32, 92, 185, 242, 580, 619, 620, 621, 643, 666, 706, 794, 853 TWE: 14, 16, 32, 92, 185, 242, 580, 619, 620, 621, 643, 666, 706, 794, 853

GLENCOE/McGraw-Hill
South Central Region
6510 Jimmy Carter Boulevard
Norcross, GA 30071
770/613-0281
800/731-2365