



# Algebra 2

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## Correlation Between the Ohio Academic Content Standards, Mathematics, and Glencoe's Ohio Edition of *Algebra 2* © 2010

Lessons in which the standard is the primary focus are indicated in **bold**.

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
<b>Number, Number Sense and Operations Standard</b>			
1	Determine what properties hold for matrix addition and matrix multiplication; e.g., use examples to show addition is commutative and when multiplication is not commutative.	4-2, 4-3	193-199, 200-207
2	Determine what properties hold for vector addition and multiplication, and for scalar multiplication.	4-2, Extend 4-4	193-199, 218-219
3	Represent complex numbers on the complex plane.	5-4	276-282
4	Use matrices to represent given information in a problem situation.	4-1, Extend 4-1, 4-2, 4-3, 4-4, 4-5, 4-6	185-191, 192, 193-199, 200-207, 209-217, 220-228, 229-235
5	Model, using the coordinate plane, vector addition and scalar multiplication.	Extend 4-4	218-219
6	Compute sums, differences and products of matrices using paper and pencil calculations for simple cases, and technology for more complicated cases.	4-2, 4-3	193-199, 200-207

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
7	Compute sums, differences, products and quotients of complex numbers.	5-4	276-282
8	Use fractional and negative exponents as optional ways of representing and finding solutions for problem situations; e.g., $27^{\frac{2}{3}} = \left(27^{\frac{1}{3}}\right)^2 = 9$ .	6-1, 7-6	333-339, 446-452
9	Use vector addition and scalar multiplication to solve problems.	4-2, Extend 4-4	193-199, 218-219
<b>Measurement Standard</b>			
1	Determine the number of significant digits in a measurement.	—	
2	Use radian and degree angle measures to solve problems and perform conversions as needed.	13-2, 13-3, 13-6	817-823, 825-831, 848-854
3	Derive a formula for the surface area of a cone as a function of its slant height and the circumference of its base.	<i>Glencoe Geometry 12-3</i>	838-846
4	Calculate distances, areas, surface areas and volumes of composite three-dimensional objects to a specified number of significant digits.	0-7, 10-1, 13-1, <i>Glencoe Geometry 12-2, 12-3, 12-4, 12-5, 12-6</i>	P17-P18, 617-622, 808-816, 830-837, 838-846, 847-854, 857-863, 864-871
5	Solve real-world problems involving area, surface area, volume and density to a specified degree of precision.	0-7, 10-1, 13-1, <i>Glencoe Geometry 12-2, 12-3, 12-4, 12-5, 12-6</i>	P17-P18, 617-622, 808-816, 830-837, 838-846, 847-854, 857-863, 864-871
<b>Geometry and Spatial Sense Standard</b>			
1	Use polar coordinates to specify locations on a plane.	<i>Glencoe Advanced Mathematical Concepts 9-1</i>	553-560
2	Represent translations using vectors.	Extend 4-4	218-219
3	Describe multiplication of a vector and a scalar graphically and algebraically, and apply to problem situations.	Extend 4-4	218-219
4	Use trigonometric relationships to determine lengths and angle measures; i.e., Law of Sines and Law of Cosines.	13-1, Extend 13-2, 13-4, 13-5, 13-9	808-816, 824, 832-839, 841-846, 871-876
5	Identify, sketch and classify the cross sections of three-dimensional objects.	10-6, <i>Glencoe Geometry 12-1</i>	656-660, 823-828

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
<b>Patterns, Functions and Algebra Standard</b>			
1	Identify and describe problem situations involving an iterative process that can be represented as a recursive function; e.g., compound interest.	11-5, Extend 11-5	714-719, 720
2	Translate a recursive function into a closed form expression or formula for the $n$ th term to solve a problem situation involving an iterative process; e.g., find the value of an annuity after 7 years.	11-5, Extend 11-5	714-719, 720
3	Describe and compare the characteristics of the following families of functions: quadratics with complex roots, polynomials of any degree, logarithms, and rational functions; e.g., general shape, number of roots, domain and range, asymptotic behavior.	5-5, Extend 5-5, 5-6, Explore 5-7, 5-7, 6-3, Extend 6-3, 6-6, 6-7, 6-8, 8-1, 8-3, 9-3, 9-4, Extend 9-4	284-290, 291, 292-300, 303-304, 305-310, 348-355, 356, 377-382, 383-390, 391-396, 475-482, 492-499, 569-575, 577-584, 585
4	Identify the maximum and minimum points of polynomial, rational and trigonometric functions graphically and with technology.	5-1, Explore 5-7, 6-4, 10-2, 13-7, Explore 13-8, 13-8	249-257, 303-304, 357-364, 623-629, 855-861, 862, 863-870
5	Identify families of functions with graphs that have rotation symmetry or reflection symmetry about the $y$ -axis, $x$ -axis or $y = x$ .	Explore 5-7, 5-7, 13-8	303-304, 305-310, 863-870
6	Represent the inverse of a function symbolically and graphically as a reflection about $y = x$ .	7-2, Extend 7-2, 8-3, 13-9	417-422, 423, 492-499, 871-876
7	Model and solve problems with matrices and vectors.	4-1, 4-2, 4-3, 4-4, Extend 4-4, 4-5, 4-6, Extend 4-6	185-191, 193-199, 200-207, 209-217, 218-219, 220-228, 229-235, 236
8	Solve equations involving radical expressions and complex roots.	5-5, 5-6, 7-7, Extend 7-7	284-290, 292-300, 453-459, 460-461
9	Solve 3 by 3 systems of linear equations by elimination and using technology, and interpret graphically what the solution means (a point, line, plane, or no solution).	3-5, Extend 4-6	167-173, 236
10	Describe the characteristics of the graphs of conic sections.	10-2, Explore 10-3, 10-3, Explore 10-4, 10-4, 10-5, 10-6, Extend 10-6	623-629, 630, 631-637, 638, 639-646, 648-655, 656-660, 661
11	Describe how a change in the value of a constant in an exponential, logarithmic or radical equation affects the graph of the equation.	7-3, 8-1, 8-3	424-430, 475-482, 492-499

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
<b>Data Analysis and Probability Standard</b>			
1	Design a statistical experiment, survey or study for a problem; collect data for the problem; and interpret the data with appropriate graphical displays, descriptive statistics, concepts of variability, causation, correlation and standard deviation.	12-1, Extend 12-1, 12-2, 12-6, Explore 12-7	745-750, 751, 752-758, 780-784, 785
2	Describe the role of randomization in a well-designed study, especially as compared to a convenience sample, and the generalization of results from each.	12-1	745-750
3	Describe how a linear transformation of univariate data affects range, mean, mode and median.	12-2	752-758
4	Create a scatterplot of bivariate data, identify trends, and find a function to model the data.	2-5, Extend 2-5, Extend 5-1, Extend 6-4, Extend 8-3	92-97, 99-100, 258, 365-366, 500-501
5	Use technology to find the Least Squares Regression Line, the regression coefficient, and the correlation coefficient for bivariate data with a linear trend, and interpret each of these statistics in the context of the problem situation.	2-5, 2-6, Extend 5-1	92-98, 101-107, 258
6	Use technology to compute the standard deviation for a set of data, and interpret standard deviation in relation to the context or problem situation.	12-2	752-758
7	Describe the standard normal curve and its general properties, and answer questions dealing with data assumed to be normal.	12-5	773-778
8	Analyze and interpret univariate and bivariate data to identify patterns, note trends, draw conclusions, and make predictions.	2-5, Extend 5-1, Extend 6-4, Extend 8-3, 12-2, 12-5, Extend 12-5, Concepts and Skills 5, Concepts and Skills 6, Concepts and Skills 7, Concepts and Skills 8	92-97, 258, 365-366, 500-501, 752-758, 773-778, 779, 1001, 1002-1003, 1004, 1005-1006
9	Evaluate validity of results of a study based on characteristics of the study design, including sampling method, summary statistics and data analysis techniques.	12-1, 12-2	745-750, 752-758
10	Understand and use the concept of random variable, and compute and interpret the expected value for a random variable in simple cases.	12-4, Explore 12-7, 12-7	764-771, 785, 786-793
11	Examine statements and decisions involving risk; e.g., insurance rates and medical decisions.	12-5	773-778