



Algebra 1

© 2010

Correlation Between the Ohio Academic Content Standards, Grade 9, and Glencoe's Ohio Edition of *Algebra 1* © 2010

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

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
Number, Number Sense and Operations Standard			
1	Identify and justify whether properties (closure, identity, inverse, commutative and associative) hold for a given set and operations; e.g., even integers and multiplication.	1-3, 1-4	16-22, 23-29
2	Compare, order and determine equivalent forms for rational and irrational numbers.	0-2, 0-4	P7-P10, P13-P16
3	Explain the effects of operations such as multiplication or division, and of computing powers and roots on the magnitude of quantities.	7-6, 7-7, 7-8, 10-3, 11-4, 11-5	439-444, 447-452, 453-458, 619-623, 692-698, 700-705
4	Demonstrate fluency in computations using real numbers.	0-2	P7-P10

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
5	Estimate the solutions for problem situations involving square and cube roots.	0-2 , 10-2, Extend 10-2, 10-3, 10-4, 10-5, 10-6	P7-P10, 612-617, 618, 619-623, 624-628, 630-635, 636-641
Measurement Standard			
1	Convert rates within the same measurement system; e.g., miles per hour to feet per second; kilometers per hour to meters per second.	2-8, 11-4	126-131, 692-698
2	Use unit analysis to check computations involving measurement.	2-8, 11-4	126-131, 692-698
3	Use the ratio of lengths in similar two-dimensional figures or three-dimensional objects to calculate the ratio of their areas or volumes respectively.	10-7	642-647
4	Use scale drawings and right triangle trigonometry to solve problems that include unknown distances and angle measures.	2-6 , 10-7, 10-8	111-117, 642-647, 649-655
5	Solve problems involving unit conversion for situations involving distances, areas, volumes and rates within the same measurement system.	2-8, 11-4	126-131, 692-698
Geometry and Spatial Sense Standard			
1	Define the basic trigonometric ratios in right triangles: sine, cosine and tangent.	Explore 10-8, 10-8	648, 649-655
2	Apply proportions and right triangle trigonometric ratios to solve problems involving missing lengths and angle measures in similar figures.	10-7 , 10-8	642-647, 649-655
3	Analyze two-dimensional figures in a coordinate plane; e.g., use slope and distance formulas to show that a quadrilateral is a parallelogram.	4-4, 10-5, 10-6	237-243, 630-635, 636-641
Patterns, Functions and Algebra Standard			
1	Define function with ordered pairs in which each domain element is assigned exactly one range element.	1-7	45-52
2	Generalize patterns using functions or relationships (linear, quadratic and exponential), and freely translate among tabular, graphical and symbolic representations.	3-5 , Extend 9-1, 9-5, 9-8 , 9-9	187-193, 536, 558-564, 578-583, 584-589

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
3	Describe problem situations (linear, quadratic and exponential) by using tabular, graphical and symbolic representations.	2-1, 2-4, 2-6, 2-7, 2-8, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 4-2, 4-4, 4-7, 5-1, 5-2, 5-3, 5-4, 5-5, 5-6, 6-1, 6-3, 6-7, 8-3, 8-4, 8-5, 9-1, 9-2, 9-3, 9-5, 9-6, Extend 9-9	75-80, 97-102, 111-117, 119-124, 126-131, 153-160, 161-166, 170-178, 180-186, 187-193, 195-200, 224-230, 237-243, 261-268, 283-288, 290-295, 296-301, 304-309, 310-314, 315-320, 333-339, 348-354, 376-381, 485-491, 493-498, 499-504, 525-535, 537-542, 544-549, 558-564, 567-572, 590-591
4	Demonstrate the relationship among zeros of a function, roots of equations, and solutions of equations graphically and in words.	3-2, 9-2	161-166, 537-542
5	Describe and compare characteristics of the following families of functions: linear, quadratic and exponential functions; e.g., general shape, number of roots, domain, range, rate of change, maximum or minimum.	Extend 4-1, 4-7, Extend 4-7, 9-1, 9-3, Extend 9-5, 9-6, 10-1, Extend 10-1, 11-2	222-223, 261-268, 269, 525-535, 544-549, 565, 567-572, 605-610, 611, 678-683

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
6	Write and use equivalent forms of equations and inequalities in problem situations; e.g., changing a linear equation to the slope intercept form.	Explore 2-2, 2-2 , Explore 2-3, 2-3, 2-4, 2-5, 2-6 , 2-7, 2-8 , 2-9, 3-4, Explore 4-1, 4-1, 4-2, 4-3, 5-1, 5-2, 5-3, 5-4, 5-5 , 5-6, 10-4, 11-8	81-82, 83-89, 90, 91-96, 97-102, 103-109, 111-117, 119-124, 126-131, 132-138, 180-186, 213, 214-221, 224-230, 231-236, 283-288, 290-295, 296-301, 304-309, 310-314, 315-320, 624-628, 720-726
7	Use formulas to solve problems involving exponential growth and decay.	9-7	573-577
8	Find linear equations that represent lines that pass through a given set of ordered pairs, and find linear equations that represent lines parallel or perpendicular to a given line through a specific point.	3-3, 4-2, 4-3, 4-4	170-178, 224-230, 231-236, 237-243
9	Solve and interpret the meaning of 2 by 2 systems of linear equations graphically, by substitution and by elimination, with and without technology.	6-1, Extend 6-1, 6-2, 6-3, 6-4, 6-5	333-339, 340-341, 342-347, 348-354, 355-360, 362-367
10	Solve quadratic equations with real roots by factoring, graphing, using the quadratic formula and with technology.	8-2, 8-3, 8-4, 8-5, 8-6, 9-2, 9-5	

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
11	Add, subtract, multiply and divide monomials and polynomials (division of polynomials by monomials only).	7-1, 7-2, Explore 7-4, 7-4, Explore 7-5, 7-5, 7-6, Explore 7-7, 7-7, 7-8, 11-5	401-407, 408-415, 423, 424-429, 431-432, 433-438, 439-444, 445-446, 447-452, 453-458, 700-705
12	Simplify rational expressions by eliminating common factors and applying properties of integer exponents.	11-3, Extend 11-3, 11-4, 11-6, 11-7	684-690, 691, 692-698, 706-713, 714-719
13	Model and solve problems involving direct and inverse variation using proportional reasoning.	3-4, Explore 11-1, 11-1	180-186, 669, 670-676
14	Describe the relationship between slope and the graph of a direct variation and inverse variation.	3-4, 11-1	180-186, 670-676
15	Describe how a change in the value of a constant in a linear or quadratic equation affects the related graphs.	3-4, Extend 4-1, 9-3	180-186, 222-223, 544-549
Data Analysis and Probability Standard			
1	Classify data as univariate (single variable) or bivariate (two variables) and as quantitative (measurement) or qualitative (categorical) data.	4-5, 12-3	245-251, 756-762
2	Create a scatterplot for a set of bivariate data, sketch the line of best fit, and interpret the slope of the line of best fit.	4-5, 4-6, Extend 9-9	245-251, 253-260, 590-591
3	Analyze and interpret frequency distributions based on spread, symmetry, skewness, clusters and outliers.	Extend 12-6	785-786
4	Describe and compare various types of studies (survey, observation, experiment), and identify possible misuses of statistical data.	Explore 12-1, 12-1, 12-2	739, 740-745, 746-755
5	Describe characteristics and limitations of sampling methods, and analyze the effects of random versus biased sampling; e.g., determine and justify whether the sample is likely to be representative of the population.	12-1, 12-2	740-745, 746-755
6	Make inferences about relationships in bivariate data, and recognize the difference between evidence of relationship (correlation) and causation.	4-5, Extend 4-5	245-251, 252
7	Use counting techniques and the Fundamental Counting principle to determine the total number of possible outcomes for mathematical situations.	0-11, 12-4	P33-P36, 764-770

Number	Academic Content Standard	Student Edition Lesson(s)	Page Numbers
8	Describe, create and analyze a sample space and use it to calculate probability.	0-11, 12-4	P33-P36, 764-770
9	Identify situations involving independent and dependent events, and explain differences between, and common misconceptions about, probabilities associated with those events.	12-5	771-778
10	Use theoretical and experimental probability, including simulations or random numbers, to estimate probabilities and to solve problems dealing with uncertainty; e.g., compound events, independent events, simple dependent events.	12-5, 12-6, 12-7	771-778, 779-784, 787-792