Oklahoma Algebra 2 with CalcChat® and CalcView®

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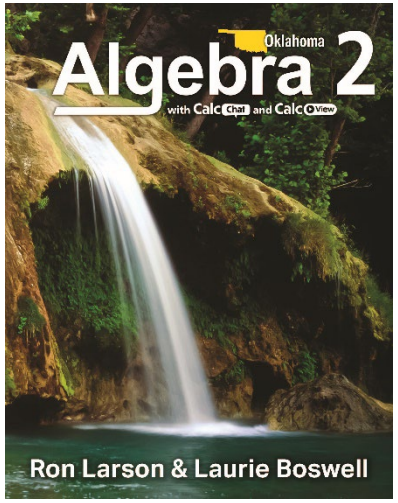
By Ron Larson and Laurie Boswell

Correlated to the Oklahoma Academic Standards for Mathematics



ISBN: 9798888029787

Erie, Pennsylvania
www.bigideaslearning.com

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Standard	Oklahoma Algebra 2 with CalcChat® and CalcView®
Algebra 2	
Numbers & Operations (N)	
A2.N.1.1 Find the value of i^n for any whole number n.	3.4 (pp. 143-152)
A2.N.1.2 Simplify, add, subtract, multiply, and divide complex numbers.	3.4 (pp. 143-152)
A2.N.1.3 Understand and apply the relationship between rational exponents to integer exponents and radicals to solve problems.	5.1 (pp. 265-270)
A2.N.2.1 Use matrices to organize and represent data. Identify the order (dimension) of a matrix	1.6 (pp. 41-46), 1.7 (pp. 47-54)
A2.N.2.2 Use addition, subtraction, and scalar multiplication of matrices to solve problems.	1.7 (pp. 47-54)
Algebraic Reasoning & Algebra (A)	
A2.A.1.1 Use mathematical models to represent quadratic relationships and solve using factoring, completing the square, the quadratic formula, and various methods (including graphing calculator or other appropriate technology). Find non-real roots when they exist.	3.1 (pp. 121-126), 3.2 (pp. 127-132), 3.3 (pp. 133-142), 3.5 (pp. 153-160), 3.6 (pp. 161-170)
A2.A.1.2 Use mathematical models to represent exponential relationships, such as compound interest, depreciation, and population growth. Solve these equations algebraically or graphically (including graphing calculator or other appropriate technology).	6.1 (pp. 327-334), 6.6 (pp. 363-370)
A2.A.1.3 Solve one-variable rational equations and check for extraneous solutions.	7.5 (pp. 425-432)
A2.A.1.4 Solve polynomial equations with real roots using various methods (e.g., polynomial division, synthetic division, using graphing calculators or other appropriate technology).	4.5 (pp. 217-224), 4.6 (pp. 225-232)

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A2.A.1.5 Solve square and cube root equations with one variable, and check for extraneous solutions.	5.4 (pp. 287-294)
A2.A.1.6 Solve common and natural logarithmic equations using the properties of logarithms.	6.5 (pp. 357-362), 6.6 (pp. 363-370)
A2.A.1.7 Represent and evaluate mathematical models using systems of linear equations with a maximum of three variables. Graphing calculators or other appropriate technology may be used.	1.5 (pp. 33-40), 1.6 (pp. 41-46)
A2.A.1.8 Use tools to solve systems of equations containing one linear equation and one quadratic equation. Graphing calculators or other appropriate technology may be used.	3.7 (pp. 171-176)
A2.A.1.9 Solve systems of linear inequalities in two variables, with a maximum of three inequalities; graph and interpret the solutions on a coordinate plane. Graphing calculators or other appropriate technology may be used.	1.8 (pp. 55-62)
A2.A.2.1 Factor polynomial expressions including, but not limited to, trinomials, differences of squares, sum and difference of cubes, and factoring by grouping, using a variety of tools and strategies.	3.1 (pp. 121-126), 3.2 (pp. 127-132), 4.4 (pp. 209-216)
A2.A.2.2 Add, subtract, multiply, divide, and simplify polynomial expressions.	4.2 (pp. 195-202), 4.3 (pp. 203-208)
A2.A.2.3 Add, subtract, multiply, divide, and simplify rational expressions.	7.3 (pp. 409-416), 7.4 (pp. 417-424)
A2.A.2.4 Recognize that a quadratic function has different equivalent representations $[f(x) = ax^2 + bx + c, f(x) = a(x-h)^2 + k, and\ f(x) = a(x-p)(x-q)]$. Identify and use the mathematical model that is most appropriate to solve problems.	2.1 (pp. 75-82), 2.2 (pp. 83-92), 2.4 (pp. 101-110)
A2.A.2.5 Rewrite algebraic expressions involving radicals and rational exponents using the properties of exponents.	5.1 (pp. 265-270), 5.2 (pp. 271-278)
A2.A.3.1 Recognize that arithmetic sequences are linear using equations, tables, graphs, and verbal descriptions. Using the pattern, find the next term.	8.1 (pp. 443-450), 8.2 (pp. 451-458), 8.5 (pp. 473-482)

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A2.A.3.2 Recognize that geometric sequences are exponential using equations, tables, graphs, and verbal descriptions. Given the formula $f(x) = a(r)^x$, find the next term and define the meaning of a and r within the context of the problem.	8.1 (pp. 443-450), 8.3 (pp. 459-466), 8.5 (pp. 473-482)
A2.A.3.3 Solve problems that can be modeled using arithmetic sequences or series given the n^{th} terms and sum formulas. Graphing calculators or other appropriate technology may be used.	8.1 (pp. 443-450), 8.2 (pp. 451-458)
A2.A.3.4 Solve problems that can be modeled using finite geometric sequences and series given the n^{th} terms and sum formulas. Graphing calculators or other appropriate technology may be used.	8.1 (pp. 443-450), 8.3 (pp. 459-466), 8.4 (pp. 467-472)
Functions (F)	
A2.F.1.1 Use algebraic, interval, and set notations to specify the domain and range of various types of functions, and evaluate a function at a given point in its domain.	1.1 (pp. 3-8), 1.2 (pp. 9-16), 2.2 (pp. 83-92), 4.1 (pp. 187-194), 4.8 (pp. 239-246), 5.3 (pp. 279-286), 5.5 (pp. 295-300), 5.7 (pp. 307-316), 6.1 (pp. 327-334), 6.2 (pp. 335-340), 6.8 (pp. 379-384), 7.2 (pp. 401-408)
A2.F.1.2 Identify the parent forms of exponential, radical (square root and cube root only), quadratic, and logarithmic functions. Predict the effects of transformations $[f(x + c), f(x) + c, f(xc), and\ cf(x)]$ algebraically and graphically.	1.2 (pp. 9-16), 1.3 (pp. 17-24), 2.1 (pp. 75-82), 4.7 (pp. 233-238), 5.3 (pp. 279-286), 6.1 (pp. 327-334), 6.3 (pp. 341-348), 6.4 (pp. 349-356)
A2.F.1.3 Graph a quadratic function. Identify the domain, range, x- and y-intercepts, maximum or minimum value, axis of symmetry, and vertex using various methods and tools that may include a graphing calculator or appropriate technology.	1.2 (pp. 9-16), 2.1 (pp. 75-82), 2.2 (pp. 83-92), 2.3 (pp. 93-100), 2.4 (pp. 101-110)

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A2.F.1.4 Graph exponential and logarithmic functions. Identify the domain, range, asymptotes, and x- and y-intercepts using various methods and tools that may include calculators or other appropriate technology. Recognize exponential decay and growth graphically and algebraically.	6.1 (pp. 327-334), 6.2 (pp. 335-340), 6.3 (pp. 341-348), 6.4 (pp. 349-356)
A2.F.1.5 Analyze the graph of a polynomial function by identifying the domain, range, intercepts, zeros, relative maxima, relative minima, and intervals of increase and decrease.	4.8 (pp. 239-246), 4.9 (pp. 247-252)
A2.F.1.6 Graph a rational function and identify the domain (including holes), range, x- and y-intercepts, vertical and horizontal asymptotes, using various methods and tools that may include a graphing calculator or other appropriate technology (excluding slant or oblique asymptotes).	7.1 (pp. 395-400), 7.2 (pp. 401-408)
A2.F.1.7 Graph a radical function (square root and cube root only). Identify the domain, range, and x- and y-intercepts using various methods and tools that may include a graphing calculator or other appropriate technology.	5.3 (pp. 279-286)
A2.F.1.8 Graph piecewise functions with no more than three branches (linear, quadratic, or exponential). Analyze the function by identifying the domain, range, intercepts, and intervals for which it is increasing, decreasing, and constant using various methods and tools (e.g., graphing calculator, other appropriate technology).	6.8 (pp. 379-384)
A2.F.1.9 Recognize whether a discrete or continuous graphical representation is appropriate to create a graph based upon a mathematical model.	2.4 (pp. 101-110)
A2.F.2.1 Add, subtract, multiply, and divide functions using function notation and recognize domain restrictions.	5.5 (pp. 295-300)
A2.F.2.2 Combine functions by composition and recognize that $g(x) = f^{-1}(x)$, the inverse function of $f(x)$, if and only if $f\big(g(x)\big) = g\big(f(x)\big) = x$.	5.6 (pp. 301-306), 5.7 (pp. 307-316)
A2.F.2.3 Find and graph the inverse of a function, if it exists, in mathematical models. Know that the domain of a function f is the range of the inverse function f^{-1} and the range of the function f is the domain of the inverse function f^{-1}	5.7 (pp. 307-316), 6.3 (pp. 341-348), 7.5 (pp. 425-432)

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A2.F.2.4 Apply the inverse relationship between exponential and logarithmic functions to convert from one form to another.	6.3 (pp. 341-348)
Data & Probability (D)	
A2.D.1.1 Use the mean and standard deviation of a data set to create a normal distribution (bell-shaped curve).	9.1 (pp. 493-498)
A2.D.1.2 Collect data and use scatter plots to analyze patterns and describe linear, exponential, or quadratic relationships between two variables.	1.2 (pp. 9-16), 1.4 (pp. 25-32), 2.4 (pp. 101-110), 6.7 (pp. 371-378)
A2.D.1.3 Make predictions based upon the regression equation (linear, exponential, or quadratic), and use the correlation coefficient to assess the reliability of those predictions using graphing technology.	1.4 (pp. 25-32), 2.4 (pp. 101-110), 6.7 (pp. 371-378)
A2.D.2.1 Evaluate reports by making inferences, justifying conclusions, and determining appropriateness of data collection methods. Show how graphs and data can be distorted to support different points of view.	9.2 (pp. 499-506), 9.3 (pp. 507-516), 9.4 (pp. 517-522), 9.5 (pp. 523-532), 9.6 (pp. 533-538)
A2.D.2.2 Identify and explain misleading conclusions and graphical representations of data sets.	9.2 (pp. 499-506), 9.3 (pp. 507-516), 9.4 (pp. 517-522)
A2.D.2.3 Differentiate between correlation and causation when describing the relationship between two variables.	9.2 (pp. 499-506), 9.4 (pp. 517-522)