

COMMON CORE ALGEBRA II

VERSION 1.0

BY KIRK WEILER

UNIT #1 – ALGEBRAIC ESSENTIALS REVIEW – 6 LESSONS ???

- [Lesson #1 – Variables, Terms and Expressions](#)
- [Lesson #2 – Solving Linear Equations](#)
- [Lesson #3 – Common Algebraic Expressions](#)
- [Lesson #4 – Basic Exponent Manipulation](#)
- [Lesson #5 – Multiplying Polynomials](#)
- [Lesson #6 – Using Tables on Your Calculator](#)

UNIT #2 – FUNCTIONS AS THE CORNERSTONES OF ALGEBRA – 7 LESSONS ???

- [Lesson #1 – Introduction to Functions](#)
- [Lesson #2 – Function Notation](#)
- [Lesson #3 – Function Composition](#)
- [Lesson #4 – The Domain and Range of a Function](#)
- [Lesson #5 – One to One Functions](#)
- [Lesson #6 – Inverse Functions](#)
- [Lesson #7 – Key Features of Functions](#)

UNIT #3 – LINEAR FUNCTIONS, EQUATIONS, AND THEIR ALGEBRA – 6 LESSONS ???

- [Lesson #1 – Direct Variation](#)
- [Lesson #2 – Average Rate of Change](#)
- [Lesson #3 – Forms of a Line](#)
- [Lesson #4 – Linear Modeling](#)
- [Lesson #5 – Inverses of Linear Functions](#)
- [Lesson #6 – Piecewise Linear Functions](#)
- [Lesson #7 - Systems of Linear Equations \(Primarily 3 by 3\)](#)



UNIT #4 – EXPONENTIAL AND LOGARITHMIC FUNCTIONS – 13 LESSONS ???

- [Lesson #1 – Integer Exponents](#)
- [Lesson #2 – Rational Exponents](#)
- [Lesson #3 – Exponential Function Basics](#)
- [Lesson #4 – Finding Equations of Exponentials](#)
- [Lesson #5 – The Method of Common Bases](#)
- [Lesson #6 – Exponential Modeling with Percent Growth and Decay](#)
- [Lesson #7 – Mindful Percent Manipulations](#)
- [Lesson #8 – Introduction to Logarithms](#)
- [Lesson #9 – Graphs of Logarithms](#)
- [Lesson #10 – Logarithm Laws](#)
- [Lesson #11 – Solving Exponential Equations Using Logarithms](#)
- [Lesson #12 – The Number e and the Natural Logarithm](#)
- [Lesson #13 – Compound Interest](#)
- [Lesson #14 – Newton's Law of Cooling](#)

UNIT #5 – SEQUENCES AND SERIES – 6 LESSONS ???

- [Lesson #1 – Sequences](#)
- [Lesson #2 – Arithmetic and Geometric Sequences](#)
- [Lesson #3 – Summation Notation](#)
- [Lesson #4 – Arithmetic Series](#)
- [Lesson #5 – Geometric Series](#)
- [Lesson #6 – Mortgage Payments](#)

UNIT #6 – QUADRATIC FUNCTIONS AND THEIR ALGEBRA – 11 LESSONS ???

- [Lesson #1 – Quadratic Function Review](#)
- [Lesson #2 – Factoring](#)
- [Lesson #3 – Factoring Trinomials](#)
- [Lesson #4 – Complete Factoring](#)
- [Lesson #5 – Factoring by Grouping](#)
- [Lesson #6 – The Zero Product Law](#)
- [Lesson #7 – Quadratic Inequalities in One Variable](#)
- [Lesson #8 – Completing the Square and Shifting Parabolas](#)
- [Lesson #9 – Modeling with Quadratic Functions](#)
- [Lesson #10 – Equations of Circles](#)
- [Lesson #11 – The Locus Definition of a Parabola](#)



UNIT #7 – TRANSFORMATIONS OF FUNCTIONS – 5 LESSONS ???

- [Lesson #1 – Shifting Functions](#)
- [Lesson #2 – Reflecting Parabolas](#)
- [Lesson #3 – Vertically Stretching Functions](#)
- [Lesson #4 – Horizontal Stretching Functions](#)
- [Lesson #5 – Even and Odd Functions](#)

UNIT #8 – RADICALS AND THE QUADRATIC FORMULA – 7 LESSONS ???

- [Lesson #1 – Square Root Functions](#)
- [Lesson #2 – Solving Square Root Equations](#)
- [Lesson #3 – The Basic Exponent Properties](#)
- [Lesson #4 – More Work with Fractional Exponents](#)
- [Lesson #5 – More Exponent Practice](#)
- [Lesson #6 – The Quadratic Formula](#)
- [Lesson #7 – More Work with the Quadratic Formula](#)

UNIT #9 – COMPLEX NUMBERS – 4 LESSONS ???

- [Lesson #1 – Imaginary Numbers](#)
- [Lesson #2 – Complex Numbers](#)
- [Lesson #3 – Solving Quadratic Equations with Complex Solutions](#)
- [Lesson #4 - The Discriminant of a Quadratic](#)

UNIT #10 – POLYNOMIAL AND RATIONAL FUNCTIONS – 13 LESSONS ???

- [Lesson #1 – Power Functions](#)
- [Lesson #2 – Graphs and Zeroes of a Polynomial](#)
- [Lesson #3 – Creating Polynomial Equations](#)
- [Lesson #4 – Polynomial Identities](#)
- [Lesson #5 – Introduction to Rational Functions](#)
- [Lesson #6 – Simplifying Rational Expressions](#)
- [Lesson #7 – Multiplying and Dividing Rational Expressions](#)
- [Lesson #8 – Combining Rational Expressions Using Addition and Subtraction](#)
- [Lesson #9 – Complex Fractions](#)
- [Lesson #10 – Polynomial Long Division](#)
- [Lesson #11 – The Remainder Theorem](#)
- [Lesson #12 – Solving Rational Equations](#)
- [Lesson #13 – Solving Rational Inequalities](#)
- [Lesson #14 - Reasoning About Radical and Rational Equations](#)



UNIT #11 – THE CIRCULAR FUNCTIONS – 10 LESSONS ???

- [Lesson #1 – Rotations and Angle Terminology](#)
- [Lesson #2 – Radian Angle Measurement](#)
- [Lesson #3 – The Unit Circle](#)
- [Lesson #4 – The Definition of the Sine and Cosine Functions](#)
- [Lesson #5 – More Work with the Sine and Cosine Functions](#)
- [Lesson #6 – Basic Graphs of Sine and Cosine](#)
- [Lesson #7 – Vertical Shifting of Sinusoidal Graphs](#)
- [Lesson #8 – The Frequency and Period of a Sinusoidal Graph](#)
- [Lesson #9 – Sinusoidal Modeling](#)
- [Lesson #10 – The Tangent Function](#)
- [Lesson #11 - The Reciprocal Functions](#)

UNIT #12 – PROBABILITY – 7 LESSONS ???

- [Lesson #1 – Introduction to Probability](#)
- [Lesson #2 – Sets and Probability](#)
- [Lesson #3 – Adding Probabilities](#)
- [Lesson #4 – Conditional Probability](#)
- [Lesson #5 – Independent and Dependent Events](#)
- [Lesson #6 – Multiplying Probabilities](#)

UNIT #13 – STATISTICS– 9 LESSONS ???

- [Lesson #1 – Variability and Sampling](#)
- [Lesson #2 – Population Parameters](#)
- [Lesson #3 – The Normal Distributions](#)
- [Lesson #4 – The Normal Distribution and Z-Scores](#)
- [Lesson #5 – Sample Means](#)
- [Lesson #6 – Sample Proportions](#)
- [Lesson #7 – The Difference in Samples Means](#)
- [Lesson #8 – Linear Regression and Lines of Best Fit](#)
- [Lesson #9 – Other Types of Regression](#)

TOTAL LESSON COUNT = 107

