

*CC Algebra II - Regents Review*

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# Unit 1: Algebraic Essentials

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Based on Kirk Weiler's  
emathinstruction lessons

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# Algebra II CC: Video Reviews

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- Organization:
  - Lesson Overview
  - CCLS Associated with this Unit
  - Terminology
  - Formulas (if formulas were introduced)
  - Specific Topical Reviews
- Headings of each slide will indicate the topical reviews. Feel free to fast-forward to the parts you want to focus on by referring to the headings
- Pause the video as needed
- Suggestion: Take notes as you watch. Organize your notes into sections (Vocabulary, Sections for each Unit, Topical Reviews, Formulas). This will provide you with an excellent study guide!

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# Unit 1: Video Overview

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- ❖ Unit 1: Lesson Overview
- ❖ CCLS Associated with Unit 1
- ❖ Basic Terminology (4 slides)
- ❖ Real Number Properties
- ❖ Solving Linear Equations
- ❖ Basic Exponent Properties
- ❖ Multiplying Polynomials
- ❖ Calculator Use
- ❖ Summary



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# Unit 1: Lesson Overview

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- 1.1 Variables, Terms and Expressions
- 1.2 Solving Linear Equations (A.CED.1)
- 1.3 Common Algebraic Expressions
- 1.4 Basic Exponent Manipulation (N.RN.2)
- 1.5 Multiplying Polynomials (A.SSE.2)
- 1.6 Using Tables on Your Calculator

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# CCLS Associated with Unit 1

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- ❖ A.CED.1 - Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. Tasks are limited to exponential equations with rational or real exponents or rational functions.
- ❖ N.RN.2 - Rewrite expressions involving radicals and rational exponents using the properties of exponents.
- ❖ A.SSE.2 - Use the structure of an expression to identify ways to rewrite it. Tasks are limited to polynomial, rational, or exponential expressions.

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# Basic Terminology - Slide 1

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- ❖ **Variable** - A quantity that is represented by a letter or symbol that is unknown, unspecified, or can change within the context of a problem.
- ❖ **Term** - A single number or combination of numbers and variables using exclusively multiplication or division. This definition will expand when we introduce higher-level functions.
- ❖ **Expression** - A combination of terms using addition and subtraction.
- ❖ **Equation** - A statement that the values of two expressions are equal (indicated by the equals sign).



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# Basic Terminology - Slide 2

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- ❖ **Coefficient** - The numerical value proceeding the term with the highest exponential power.
- ❖ **Like-Terms** - Two or more terms that have the same variables raised to the same powers. In like terms, only the coefficients (the multiplying numbers) can differ.
- ❖ **Zero** - A numerical value that, when substituted into an expression, provides a value of zero.

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# Basic Terminology - Slide 3

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- ❖ **Monomial** - An expression that contains one term.
- ❖ **Binomial** - An expression that contains two terms.
- ❖ **Trinomial** - An expression that contains three terms.
- ❖ **Quadrinomial** - An expression that contains four terms.



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# Basic Terminology - Slide 4

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- ❖ **Linear** - An expression or equation where the highest exponent of one term is 1.
- ❖ **Quadratic** - An expression or equation where the highest exponent of one term is 2.
- ❖ **Cubic** - An expression or equation where the highest exponent of one term is a 3.
- ❖ **Quartic** - An expression or equation where the highest exponent of one term is a 4.

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# Real Number Properties

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- ❖ **Commutative Property** of Addition and Multiplication
- ❖ **Associative Property** of Addition and Multiplication
- ❖ **Distributive Property** of Multiplication and Division over Addition and Subtraction

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# Solving Linear Equations

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- ❖ **Linear Equations with One Solution**
- ❖ **Identity Equations**
- ❖ **Inconsistent Equations**



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# Basic Exponent Properties

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- ❖ **Multiplying Expressions**
- ❖ **Dividing Expressions**
- ❖ **Raising Expressions to a Power**

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# Multiplying Polynomials

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- ❖ You can only multiply two polynomials at a time!
- ❖ **Distribution Method**
- ❖ **Punnett “Square” Method**
- ❖ **Multiplying Three or More Polynomials**

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# Calculator Use

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- ❖ When to use **Parentheses**
- ❖ **The STORE button:** Substituting numerical values for a variable
- ❖ Using **TABLES** to check your work



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# Summary of the Most Important Information

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- ❖ Students should be able to:
  - ❖ Tell the difference between an **Expression** and an **Equation**.
  - ❖ Know, identify, and apply the **Commutative, Associative, and Distributive Properties** of Real Numbers
  - ❖ **Solve a Linear Equation** and identify equations that are identities or are inconsistent.
  - ❖ Apply the **Basic Exponent Properties** to multiply expressions that contain variables with integer exponents.
  - ❖ Multiply two or more polynomials using either the **Distribution Method** or the **Punnett “Square” Method**.
  - ❖ Use their calculator’s STORE button or the TABLE feature to verify their solutions to an equation or to verify the result of an expression after simplifying an expression completely