

# Unlimited Worksheets & Tests w/ Automatic Grading N Tracking

## BONUS Curriculum eBook (PDF Lessons)

# Comprehensive Math Curriculum

## Course Contents (Pre-Algebra - 7<sup>th</sup> / 8<sup>th</sup>)

### COURSE NAME: PRE-ALGEBRA (NEW)

#### 1. Numbers Review

- 1.1 Whole Numbers
- 1.2 Integers
- 1.3 Positive and Negative Integers
- 1.4 Rational and Irrational Numbers
- 1.5 Decimal Numbers
- 1.6 Real Numbers
- 1.7 Prime Numbers
- 1.8 Percentages

#### 2. Fractions and Operations with Fractions

- 2.1 Understanding Fractions
- 2.2 Equivalent Fractions
- 2.3 The Greatest Common Factor
- 2.4 The Least Common Multiple
- 2.5 The Least Common Denominator
- 2.6 Reducing Fractions
- 2.7 Adding Fractions
- 2.8 Adding Fractions and Whole Numbers
- 2.9 Adding Mixed Fractions
- 2.10 Multiplying Fractions
- 2.11 Multiplying Fractions and Whole Numbers
- 2.12 Subtracting Fractions
- 2.13 Subtracting Fractions and Whole Numbers
- 2.14 Subtracting Mixed Fractions
- 2.15 Dividing Fractions
- 2.16 Dividing Fractions and Whole Numbers

#### 3. Real Numbers

- 3.1 Real Numbers
- 3.2 The Number Line
- 3.3 Comparing Real Numbers
- 3.4 Properties of Real Numbers
- 3.5 Adding Real Numbers
- 3.6 Subtracting Real Numbers
- 3.7 Multiplying Real Numbers
- 3.8 Dividing Real Numbers
- 3.9 Order of Operations
- 3.10 Mixed Operations with Real Numbers

#### 4. Powers and Roots

- 4.1 Squares and Square Roots
- 4.2 Cubes and Cube Roots
- 4.3 Power of n and nth Roots
- 4.4 Powers of 10
- 4.5 Simplifying Square Roots
- 4.6 Simplifying Cube Roots
- 4.7 Scientific Notation

#### 5. Exponents

- 5.1 Understanding Exponents
- 5.2 Basic Rules of Exponents
- 5.3 Laws of Exponents
- 5.4 Expressions Raised to a Power
- 5.5 Fractional Exponents
- 5.6 Negative Exponents
- 5.7 Multiplying & Dividing with Negative Exponents
- 5.8 Simplifying Exponential Expressions
- 5.9 Evaluating Exponential Expressions

#### 9. Linear Equations and Formulas

- 9.1 Introduction to Linear Equations
- 9.2 Linear Equations with One Variable
- 9.3 Writing Linear Equations with One Variable
- 9.4 Solving Linear Equations with One Variable
- 9.5 Word Problems with Linear Equations

#### 10. Linear Equations and Slope

- 10.1 Introduction to the Slope of a Straight Line
- 10.2 Finding Slope When Given 2 Points
- 10.3 Slope-Intercept Form of a Linear Equation
- 10.4 Writing Linear Equations When Given 2 points
- 10.5 Writing Linear Equations When Given Slope & a Point
- 10.6 Using Linear Equations to Find Parallel Lines

#### 11. Quadratic Equations and Parabolas

- 11.1 Quadratic Equations
- 11.2 Graphing Quadratic Equations
- 11.3 Introduction to Parabolas
- 11.4 Identifying Equations and Graphing Parabolas
- 11.5 Identifying Linear and Non-linear Equations

#### 12. Linear Inequalities

- 12.1 Linear Inequalities with One Variable
- 12.2 Solving Linear Inequalities with One Variable
- 12.3 Solving Linear Inequalities by Addition & Subtraction
- 12.4 Solving Linear Inequalities by Multiplication & Division
- 12.5 Solving Multi-Step Linear Inequalities

#### 13. Polynomials

- 13.1 Monomials and Degree of Monomials
- 13.2 Multiplying Monomials
- 13.3 Polynomials and Degree of Polynomials
- 13.4 Adding and Subtracting Polynomials
- 13.5 Multiplying a Polynomial by a Monomial
- 13.6 Multiplying Polynomials
- 13.7 Special Binomial Products

#### 14. Factoring

- 14.1 Factors and Prime Factorization
- 14.2 Greatest Common Factor of Monomials
- 14.3 Factoring Polynomials using the Distributive Property
- 14.4 Factoring Polynomials using Grouping
- 14.5 Factoring Trinomials:  $x^2 + bx + c$
- 14.6 Factoring Trinomials:  $ax^2 + bx + c$
- 14.7 Factoring the Difference of Squares
- 14.8 Simplifying Algebraic Ratios
- 14.9 Solving Algebraic Proportions

#### 15. Pythagorean Theorem and Triangles

- 15.1 Triangles and their Properties
- 15.2 The Pythagorean Theorem
- 15.3 The Distance Formula

#### 16. Introduction to Trigonometric Functions

- 16.1 Primary Trigonometric Functions
- 16.2 Secondary Trigonometric Functions
- 16.3 Measuring Angles in Degrees and Radians
- 16.4 Trigonometric Functions of Special Angles
- 16.5 Trigonometric Functions on the Coordinate Plane
- 16.6 Pythagorean Identities

# Comprehensive Math Curriculum

## Course Contents (Pre-Algebra - 7<sup>th</sup> / 8<sup>th</sup> Grade Conti...)

### 6. Variables

- 6.1 Variables
- 6.2 Like and Unlike Terms
- 6.3 Canceling Variables
- 6.4 The Addition Operation with Variables
- 6.5 The Subtraction Operation with Variables
- 6.6 The Multiplication Operation with Variables
- 6.7 The Division Operation with Variables

### 7. Expressions, Equations and Formulas

- 7.1 Expressions and Equations
- 7.2 Writing Expressions and Equations
- 7.3 Writing Equations and Formulas
- 7.4 Problem Solving using Formulas
- 7.5 Comparing Real Number Expressions
- 7.6 Simplifying Expressions
- 7.7 Evaluating Expressions
- 7.8 Simplifying Radical Expressions
- 7.9 Word Problems

### 8. The Coordinate Plane

- 8.1 The Coordinate Plane
- 8.2 Graphing Points on a Coordinate Plane
- 8.3 Graphing Linear Relations
- 8.4 Graphing Linear Relations using a t-Table
- 8.5 Making Predictions from Linear Patterns