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# Grade 6-7 Standards

## Integrated Grade 6-7 Concepts

- [Unit 1: Positive Rational Numbers](#)
  - Standard Algorithm Multiplication & Division with Whole Numbers & Decimals
  - Decimal Operations
  - Divisibility Rules (1 through 12)
  - Prime Factorization & Complete Factor Lists
  - GCF & Simplifying Fractions using the GCF
  - LCM & Using the LCD to Add / Subtract Fractions with Unlike-Denominators
  - Multiplying & Dividing Fractions, Whole Numbers, & Mixed Numbers
- [Unit 2: Integers & Rational Numbers](#)
  - Opposites, Absolute Values, & Rational Numbers on a Number Line
  - The Coordinate Plane: Plotting Points, Locations, & Vertical / Horizontal Distance
  - Finding Area & Perimeter of Triangles & Quadrilaterals given Points (Ordered Pairs)
  - Adding & Subtracting Integers & Rational Numbers
  - Multiplying & Dividing Integers & Rational Numbers
- [Unit 3: Numerical & Algebraic Expressions](#)
  - Understanding & Evaluating Powers with Whole Number Exponents
  - The Distributive Property: Rewriting Numerical & Algebraic Expressions
  - The Commutative, Associative & Identity Properties
  - Algebraic Expressions Vocabulary & Combining Like-Terms
  - Simplifying Algebraic Expressions with and without the Distributive Property
  - Evaluating Numerical Expressions with Rational Numbers
  - Evaluating Algebraic Expressions with Rational Numbers
  - Identifying and Writing Equivalent Algebraic Expressions
- [Unit 4: Equations & Inequalities](#)
  - Solving 1-Step Equations with Addition/Subtraction (Using Properties of Equality & the Identity Property)
  - Solving 1-Step Equations with Multiplication/Division (Using Properties of Equality & the Identity Property)
  - Writing & Solving 1-Step Application Word Problems
  - Solving Equations by Combining Like-Terms First
  - Inequalities: Writing Solutions, Graphing & Applications
- Linear Equations: Tables, Patterns, Graphs, Independent & Dependent Variables, & Applications
- [Unit 5: Ratios, Rates & Proportions](#)
  - Writing & Simplifying Ratios in 3 Forms
  - Graphing Ratios & Rates from Incomplete Tables
  - Equivalent Ratios & Rates - Ratio/Rate Tables & Unit Ratios/Rates
  - Comparing Ratios & Rates using Unit Ratios/Rates
  - Equivalent Ratios Applications
  - Solving Proportions
  - Interpreting & Comparing Unit Rates
  - Unit Conversions & Rate Conversions using Dimensional Analysis
- [Unit 6: Percents & Percent Applications](#)
  - Rewriting Fractions, Decimals & Percents, including Non-Terminating Decimals
  - Solving Percent Proportions (Finding the Part, Whole & Percent)
  - Solving Percent Proportion Application Problems
  - Calculating Discounts, Discount Prices & Percent Discount
- [Unit 7: Statistics & Data Displays](#)
  - Area of Parallelograms: Calculating Area / base / height
  - Area of Triangles: Calculating Area / base / height
  - Area of Parallelograms & Triangles given Coordinates
  - Area of Trapezoids & Pentagons using Decomposition
  - Surface Area of Prisms & Pyramids
  - Volume of Right Rectangular Prisms
  - Volume of Right Rectangular Prisms using Various Unit Cubes
  - Volume of Composite Right Rectangular Prisms
- [Unit 8: 2D & 3D Geometry](#)
  - Statistical Questions
  - Measures of Center & Variability
  - Box Plots
  - Histograms & Frequency Tables
  - Various Data Displays

## UNIT 1: POSITIVE RATIONAL NUMBERS

| Topic                                                                                          | PDF                   | PDF Key             | Video                 |
|------------------------------------------------------------------------------------------------|-----------------------|---------------------|-----------------------|
| <b>Adding &amp; Subtracting Decimals</b>                                                       | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Multiplication Standard Algorithm</b>                                                       | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Multiplication Standard Algorithm - Scaffolded</b>                                          | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Multiplication of Decimals Standard Algorithm</b>                                           | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Multiplication of Decimals Standard Algorithm - Scaffolded</b>                              | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Division Standard Algorithm</b>                                                             | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Division Standard Algorithm - Scaffolded</b>                                                | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Division of Decimals Standard Algorithm</b>                                                 | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Division of Decimals Standard Algorithm - Scaffolded</b>                                    | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Standard Algorithm ( <math>\times</math> / <math>\div</math> ) &amp; Decimal Operations</b> | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Decimal Operation Applications #1</b>                                                       | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Decimal Operation Applications #2</b>                                                       | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Decimal Operations Application Word Problems</b>                                            | <a href="#">Blank</a> | <a href="#">Key</a> | <del>Video</del>      |
| <b>Standard Algorithm Practice with Unit Conversions</b>                                       | <a href="#">Blank</a> | <a href="#">Key</a> | <del>Video</del>      |
| <b>Divisibility Rules</b>                                                                      | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Prime &amp; Composite Numbers &amp; Prime Factorization</b>                                 | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Review on Topics Above</b>                                                                  | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Using Prime Factorizations to Write Complete Factor Lists</b>                               | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Greatest Common Factor (GCF)</b>                                                            | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Simplifying Fractions using the GCF</b>                                                     | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>GCF Application Word Problems</b>                                                           | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Least Common Multiple (LCM)</b>                                                             | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Adding &amp; Subtracting Fractions using the LCM</b>                                        | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>LCM Application Word Problems</b>                                                           | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Improper Fractions &amp; Mixed Numbers</b>                                                  | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Writing Reciprocals</b>                                                                     | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Multiplying Fractions</b>                                                                   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Dividing Fractions</b>                                                                      | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |

|                                                       |                       |                     |       |
|-------------------------------------------------------|-----------------------|---------------------|-------|
| Multiplying & Dividing Fractions Application Problems | <a href="#">Blank</a> | <a href="#">Key</a> | Video |
| Review on Topics Above                                | <a href="#">Blank</a> | <a href="#">Key</a> | Video |

| UNIT 2: INTEGERS & RATIONAL NUMBERS                             |                       |                     |                       |
|-----------------------------------------------------------------|-----------------------|---------------------|-----------------------|
| Topic                                                           | PDF                   | PDF Key             | Video                 |
| Understanding Absolute Values                                   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Understanding Opposites                                         | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Representing Integers on Number Lines Applications              | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Ordering & Comparing Integers & Rational Numbers                | <a href="#">Blank</a> | Key                 | Video                 |
| Opposites, Absolute Values & Comparing Rational Numbers         | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Coordinate Planes (Plotting Ordered Pairs)                      | <a href="#">Blank</a> | Key                 | Video                 |
| Coordinate Planes (Plotting Ordered Pairs with Decimals of 0.5) | <a href="#">Blank</a> | Key                 | Video                 |
| Coordinate Planes (Plotting Ordered Pairs) *Switch M with L     | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Coordinate Planes (Plotting and Writing Ordered Pairs)          | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Describing Directions & Locations of Ordered Pairs              | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Vertical & Horizontal Distance on a Coordinate Plane            | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Finding Distance on a Coordinate Plane (Find Distance)          | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Distance on a Coordinate Plane (Find Missing Value)             | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Coordinate Planes (Geometry Applications - Area)                | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Coordinate Planes (Geometry Applications - Perimeter)           | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Coordinate Plane OEQ (Open-Ended Question)                      | <a href="#">Blank</a> | Key                 | <a href="#">Video</a> |
| <b>Adding Integers &amp; Rational Numbers</b>                   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Adding Integers & Decimals                                      | <a href="#">Blank</a> | <a href="#">Key</a> | No Video              |
| <b>Subtracting Integers &amp; Rational Numbers ***#15 is -9</b> | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Subtracting Integers & Decimals                                 | <a href="#">Blank</a> | <a href="#">Key</a> | No Video              |
| <b>Multiplying Integers &amp; Rational Numbers</b>              | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| <b>Dividing Integers &amp; Rational Numbers</b>                 | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Multiplying & Dividing Integers & Decimals                      | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |

### UNIT 3: NUMERICAL & ALGEBRAIC EXPRESSIONS

| Topic                                                                  | PDF                   | PDF Key             | Video                 |
|------------------------------------------------------------------------|-----------------------|---------------------|-----------------------|
| Evaluating Numerical Expressions                                       | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Evaluating Numerical Expressions with Integers                         | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Evaluating Numerical Expressions with Fractions #1                     | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Evaluating Numerical Expressions with Fractions #2                     | <a href="#">Blank</a> | Key                 | Video                 |
| Evaluating Numerical Expressions with Decimals                         | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Translating Verbal Expressions & Algebraic Expressions                 | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Evaluating Algebraic Expressions (with Whole Numbers Only)             | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Evaluating Algebraic Expressions (with Positive Rational #'s)          | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Evaluating Algebraic Expressions (Using Substitution)                  | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Evaluating Variable Expressions with Tables                            | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Understanding Powers with Rational Bases                               | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Evaluating Powers & Expressions                                        | <a href="#">Blank</a> | <a href="#">Key</a> | No Video              |
| Distributive Property: Rewriting Expressions (Positives Only)          | <a href="#">Blank</a> | Key                 | Video                 |
| Distributive Property: Rewriting Expressions (with Negatives) #1       | <a href="#">Blank</a> | Key                 | Video                 |
| Distributive Property: Rewriting Expressions (with Negatives) #2       | <a href="#">Blank</a> | Key                 | Video                 |
| Distributive Property: Writing Equivalent Expressions                  | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| The Commutative, Associative, & Identity Properties                    | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Algebraic (Variable) Expressions- Vocabulary                           | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Simplifying Algebraic Expressions (Combining Like-Terms) - Positive #1 | <a href="#">Blank</a> | Key                 | Video                 |
| Simplifying Algebraic Expressions (Combining Like-Terms) - Positive #2 | <a href="#">Blank</a> | Key                 | Video                 |
| Simplifying Algebraic Expressions (Combining Like-Terms) - Negative #1 | <a href="#">Blank</a> | Key                 | Video                 |
| Simplifying Algebraic Expressions (Combining Like-Terms) - Negative #2 | <a href="#">Blank</a> | Key                 | Video                 |

|                                                            |                       |                     |                       |
|------------------------------------------------------------|-----------------------|---------------------|-----------------------|
| Simplifying Algebraic Expressions (Combining Like-Terms)   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Identifying Equivalent Variable Expressions                | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Review on Topics Above (Study Guide for Unit 3 Assessment) | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |

| UNIT 4: EQUATIONS & INEQUALITIES                                                                                               |                       |                     |                       |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------|-----------------------|
| Topic                                                                                                                          | PDF                   | PDF Key             | Video                 |
| 1-Step Equations - Fundamentals                                                                                                | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| 1-Step Equations - Adding & Subtracting                                                                                        | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| 1- Step Equations - Multiplying & Dividing                                                                                     | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| 1- Step Equations - Mixed                                                                                                      | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| 1-Step Equations - Application Word Problems                                                                                   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Translating & Solving 1-Step Equations                                                                                         | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Solving Equations by Combining Like-Terms - Scaffolded                                                                         | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Solving Equations by Combining Like-Terms First                                                                                | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| 1-Step Equations - Adding & Subtracting + Applications                                                                         | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| 1-Step Equations - Multiplying & Dividing + Applications                                                                       | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| 1-Step Equations & Applications Review Study Guide                                                                             | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| 4 Application Word Problems                                                                                                    | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Linear Equations: Independent & Dependent Variables with Filling in A Data Table                                               | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Linear Equations: Filling in Tables given an Equation                                                                          | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Linear Equations: Writing an Equation from a Table <b>#12 should be <math>y=2/3x+7</math> (PDF is correct, video is wrong)</b> | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Linear Equations: Application Word Problems with Graphing                                                                      | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Inequalities: Writing & Graphing Solutions                                                                                     | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Inequalities: Translating & Graphing Inequalities from a Scenario                                                              | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Inequalities: 1-Step Inequalities (No Negative Coefficients)                                                                   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |



|                                 |                       |                     |                       |
|---------------------------------|-----------------------|---------------------|-----------------------|
| Cumulative Practice Problem Set | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
|---------------------------------|-----------------------|---------------------|-----------------------|

| UNIT 5: RATIOS, RATES & PROPORTIONS                     |                       |                     |                       |
|---------------------------------------------------------|-----------------------|---------------------|-----------------------|
| Topic                                                   | PDF                   | PDF Key             | Video                 |
| Writing & Simplifying Ratios in 3 Forms                 | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Graphing Ratios & Rates from Incomplete Tables          | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Equivalent Ratios & Rates - Tables & Unit Ratios/Rates  | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Equivalent Ratios Applications                          | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Solving Part:Part, Part:Whole, and Whole:Part Ratios    | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Comparing Ratios & Rates using Unit Ratios & Unit Rates | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Unit Conversions                                        | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Unit Conversions Practice                               | <a href="#">Blank</a> | <a href="#">Key</a> | No Video              |
| Rate Conversions                                        | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |

## UNIT 6: PERCENTS & PERCENT APPLICATIONS

| Topic                                                                                 | PDF                   | PDF Key             | Video                 |
|---------------------------------------------------------------------------------------|-----------------------|---------------------|-----------------------|
| Percentages Basics (Visual)                                                           | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Relating & Converting Fractions, Decimals, & Percents #1                              | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Percent Proportions Scaffolded (Double Number Line)                                   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Percent Application Problems - calculator OK for #3                                   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Solving Percent Proportions - Part, Whole, Percent                                    | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Percent Proportion Problems #1 (Finding Part, Whole, %)                               | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Relating & Converting Fractions, Decimals, & Percents #2<br>#16 is revised on the PDF | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Percent Proportion Problems #2 (Finding Part, Whole, %)                               | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Percent Proportion Application Word Problems                                          | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Percent Proportion Finance Word Problems                                              | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Percent Application Problem (Emails)                                                  | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
|                                                                                       |                       |                     |                       |

## UNIT 7: STATISTICS & DATA DISPLAYS

| Topic                                                                                                                                            | PDF                   | PDF Key             | Video                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------|-----------------------|
| Statistical Questions                                                                                                                            | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Calculating Mean Absolute Deviation (MAD)                                                                                                        | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Measures of Center- Min, Max, Range, Median, Mode, MAD                                                                                           | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
| Box Plots - Creating, Interpreting, Measures of Center, Quartiles, Outliers, IQR<br><b>Correction Made in PDF (Low Outliers are Below -4.25)</b> | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |

## UNIT 8: 2D & 3D GEOMETRY

| Topic                                                                                                                             | PDF                   | PDF Key             | Video                                                |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------|------------------------------------------------------|
| Area of Parallelograms: Finding Area / base / height                                                                              | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a>                                |
| Area of Triangles: Finding Area / base / height                                                                                   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a>                                |
| Area of Parallelograms & Triangles on a Coordinate Plane<br><b>See if you can spot the mistake in this video - revised on PDF</b> | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a>                                |
| Area of Trapezoids & Pentagons on a Coordinate Plane                                                                              | <a href="#">Blank</a> | <a href="#">Key</a> | <del>Video</del>                                     |
| Surface Area & Volume Introduction                                                                                                | <a href="#">Blank</a> | Key                 | <a href="#">Video #1</a><br><a href="#">Video #2</a> |
| Geometry Review Study Guide                                                                                                       | <a href="#">Blank</a> | <a href="#">Key</a> | <del>Video</del>                                     |
| Surface Area of Rectangular Prisms (Rational Dimensions)                                                                          | <a href="#">Blank</a> | Key                 | <del>Video</del>                                     |
| Volume of Rectangular Prisms with Unit Cubes #1                                                                                   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a>                                |
| Volume of Rectangular Prisms with Unit Cubes #2                                                                                   | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a>                                |

|                                                 |                       |                     |                       |
|-------------------------------------------------|-----------------------|---------------------|-----------------------|
| Volume of Rectangular Prisms with Unit Cubes #3 | <a href="#">Blank</a> | <a href="#">Key</a> | <a href="#">Video</a> |
|-------------------------------------------------|-----------------------|---------------------|-----------------------|

# Grade 6-7-8 Standards

# Integrated Grade 6-7-8 Concepts

- [Unit 1: Rational Numbers & The Coordinate Plane](#)
  - Operations with Positive Rational Numbers
  - Comparing & Ordering Integers
  - Operations with Integers
  - Evaluating Numerical Expressions with Rational Numbers (Integers & Decimals)
  - Understanding the Coordinate Plane
  - Horizontal & Vertical Distance on the Coordinate Plane
- [Unit 2: Factors, Multiples, Fractions & Exponent Rules](#)
  - Prime Factorization, Divisibility Rules & Complete Factor Lists
  - The Greatest Common Factor of Natural Numbers & Monomials
  - The Least Common Multiple of Natural Numbers & Monomials
  - Rewriting Equivalent Fractions & Fraction Operations
  - Evaluating Numerical Expressions with Rational Numbers (Fractions)
  - Rules of Integer Exponents
  - Scientific Notation
- [Unit 3: Numerical & Algebraic Expressions & Algebraic Properties](#)
  - The Commutative Properties of Addition & Multiplication
  - The Associative Properties of Addition & Multiplication
  - The Distributive Property
  - The Addition, Subtraction, Multiplication & Division Property of Equality
  - The Addition, Subtraction, Multiplication & Division Property of Inequality
  - The Identity Property of Addition & Multiplication
  - The Additive & Multiplicative Inverse Property
  - Simplifying Numerical & Algebraic Expressions using Algebraic Properties
- [Unit 4: Equations, Inequalities & Linear Equations & Linear Functions](#)
  - Solving 1-Step & Multi-Step Equations
  - Solving & Graphing 1-Step & Multi-Step Inequalities
  - Independent & Dependent Variables in Linear Contexts
  - Writing & Understanding Domains, Ranges, Relations & Functions
  - Linear Relationships expressed as a Graph, Table, Equation & Function
- Linear Equation Forms: Slope-Intercept, Point-Slope & Standard Form
- Solving Systems of Linear Equations by Graphing & Substitution
- [Unit 5: Ratios, Rates & Proportions](#)
  - Writing & Representing Ratios & Rates in 3 Forms
  - Writing & Solving Proportions using Multiple Methods
  - Converting Units & Rates using Dimensional Analysis
  - Applying Ratios to Scale Drawings, Similar Figures, & Congruent Figures
- [Unit 6: Percents & Percent Applications](#)
  - Converting & Ordering Fractions, Decimals & Percents
  - Solving Percent Proportions & Using the Percent Equation
  - Percent Change Equations
  - Percent Applications
  - Simple & Compound Interest
- [Unit 7: Geometry](#)
  - Area & Perimeter of Parallelograms, Triangles, & Circles
  - Area & Perimeter of 2 Dimensional Composite Figures
  - Area & Perimeter on the Coordinate Plane
  - Applications of the Pythagorean Theorem
  - Complementary & Supplementary Angle Relationships
  - Angle Relationships with Parallel Lines & Transversals
  - The Triangle Angle Sum Theorem
  - Interior & Exterior Angle Sums in Convex Polygons
- [Unit 8: Statistics & Probability](#)
  - Measures of Center & Measures of Variability
  - Mean Absolute Deviation
  - Creating, Interpreting, & Applications with Dot Plots
  - Creating, Interpreting, & Applications with Histograms
  - Creating, Interpreting, & Applications with Box Plots
  - Applications of the Multiplication Principle
  - Theoretical & Experimental Probability
  - Independent & Dependent Event Probability
  - Patterns of Association in Bivariate Data

## UNIT 1: RATIONAL NUMBERS & THE COORDINATE PLANE

| Topic                                                 | Worksheet             | Answer Key                | Explanation           |
|-------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Decimal Operations Applications                       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Decimal Operations Application Problems               | <a href="#">Blank</a> | <a href="#">Annotated</a> | No Video              |
| Standard Algorithm Practice with Unit Conversions     | <a href="#">Blank</a> | <a href="#">Annotated</a> | No Video              |
| Opposites, Absolute Values & Comparing Rational #'s   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Adding Integers & Decimals                            | <a href="#">Blank</a> | <a href="#">Annotated</a> | No Video              |
| Subtracting Integers & Decimals                       | <a href="#">Blank</a> | <a href="#">Annotated</a> | No Video              |
| Multiplying & Dividing Integers & Decimals            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Review on Topics Above                                | <a href="#">Blank</a> | <a href="#">Annotated</a> | No Video              |
| Evaluating Powers & Expressions                       | <a href="#">Blank</a> | <a href="#">Annotated</a> | No Video              |
| Evaluating Numerical Expressions with Decimals        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Plotting Points on the Coordinate Plane               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Finding Distance using Absolute Values                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Distance on a Coordinate Plane (Find Missing Value)   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Vertical & Horizontal Distance on a Coordinate Plane  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Coordinate Planes (Geometry Applications - Perimeter) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Coordinate Planes (Geometry Applications - Area)      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Reflections Across the Axis on a Coordinate Plane     | <a href="#">Blank</a> | <a href="#">Annotated</a> | Video                 |
| Coordinate Plane OEQ (Open-Ended Question)            | <a href="#">Blank</a> | Annotated                 | <a href="#">Video</a> |
| Review for Topics Above                               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

## UNIT 2: FACTORS, MULTIPLES, FRACTIONS & EXPONENT RULES

| Topic                                                             | Worksheet             | Answer Key                | Explanation           |
|-------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Prime Factorizations, Complete Factor Lists, & Factored Monomials | <a href="#">Blank</a> | <a href="#">Key</a>       | <a href="#">Video</a> |
| The Greatest Common Factor (GCF) of Numbers & Monomials           | <a href="#">Blank</a> | <a href="#">Key</a>       | <a href="#">Video</a> |
| The Least Common Multiple (LCM) of Numbers & Monomials            | <a href="#">Blank</a> | <a href="#">Key</a>       | <a href="#">Video</a> |
| Adding & Subtracting Rational Expressions                         | <a href="#">Blank</a> | <a href="#">Key</a>       | <a href="#">Video</a> |
| GCF Application Word Problems                                     | <a href="#">Blank</a> | <a href="#">Key</a>       | <a href="#">Video</a> |
| LCM Application Word Problems                                     | <a href="#">Blank</a> | <a href="#">Key</a>       | <a href="#">Video</a> |
| Multiplying & Dividing Rational Expressions                       | <a href="#">Blank</a> | <a href="#">Key</a>       | <a href="#">Video</a> |
| Evaluating Numerical Expressions with Fractions                   | <a href="#">Blank</a> | <a href="#">Key</a>       | <a href="#">Video</a> |
| Review on Topics Above                                            | <a href="#">Blank</a> | <a href="#">Key</a>       | <a href="#">Video</a> |
| Using the Product of Powers Property                              | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Using the Power of Powers Property                                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Combining the Product and Powers Properties                       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Scientific Notation Basics                                        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Operations with Scientific Notation                               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Applications with Rational Numbers (Review / Extension            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Review on Topics Above                                            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |



### UNIT 3: NUMERICAL & ALGEBRAIC EXPRESSIONS & PROPERTIES

| Topic                                                            | Worksheet             | Answer Key                 | Explanation               |
|------------------------------------------------------------------|-----------------------|----------------------------|---------------------------|
| The Distributive Property (no variables)                         | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video Key</a> |
| The Commutative, Associative, Identity & Distributive Properties | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video Key</a> |
| Algebraic Expressions Vocabulary & Basic Simplification          | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <del>Video Key</del>      |
| Translating Verbal Expressions to Variable Expressions           | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video Key</a> |
| Writing & Evaluating Algebraic Expressions with Applications     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video Key</a> |
| Simplifying & Evaluating Algebraic Expressions with Applications | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video Key</a> |
| Evaluating Expressions & Identifying Equivalent Expressions      | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video Key</a> |
| The Additive Inverse Property & Multiplicative Inverse Property  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video Key</a> |

## UNIT 4: EQUATIONS, INEQUALITIES & LINEAR EQUATIONS & FUNCTIONS

| Topic                                                            | Worksheet             | Answer Key                | Explanation           |
|------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| 1-Step Equations (Fundamentals)                                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| 1-Step Equations (Continued)                                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Equations with Simplifying Expressions First                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| 2-Step Equations & Multi-Step Equations                          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Multi-Step Equations (mixed)                             | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing & Solving 1 & 2-Step Inequalities                       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Equations & Inequalities Practice #1                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Equations & Inequalities Applications Practice                   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Introduction to Linear Equations & Functions                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear Equations & Functions (continued)                         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Evaluating & Working with Function Notation                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Function Notation: Graphing Functions                            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear Equations: Graphing & Basics                              | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear Equations: Slope-Intercept Form                           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear Equations: Standard Form                                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Rewriting Linear Equations in Different Forms (SIF/SF)           | <a href="#">Blank</a> | Annotated                 | <a href="#">Video</a> |
| Linear Equations & Functions Applications                        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear Inequalities: Graphing & Understanding Solutions          | <a href="#">Blank</a> |                           |                       |
| Linear Inequalities: Context & Applications                      | <a href="#">Blank</a> |                           |                       |
| Solving Multi-Step Equations (Grade 7)                           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Multi-Step Equations with Fractions (Grade 7)            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Scientific Notation: Standard to Scientific (Grade 8)            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Scientific Notation: Scientific to Standard (Grade 8)            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Linear System by Graphing (Grade 8)                    | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Linear System by Substitution (Grade 8)                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Linear System by Elimination (No LCM Needed) (Grade 8) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

|                                                                     |                       |                           |                       |
|---------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Solving a Linear System by Elimination (LCM Needed) (Grade 8)       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem - Coin Combinations          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application - Mixture Percent Concentration (Grade 8) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem #1 (Grade 8)                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem #2 (Grade 8)                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem #3 (Grade 8)                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem #4 (Grade 8)                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem #5 (Grade 8)                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| UNIT 5: RATIOS, RATES & PROPORTIONS                     |                       |                           |                       |
|---------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Topic                                                   | Worksheet             | Answer Key                | Explanation           |
| Writing Ratios & Proportions & Solving Proportions      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Proportions using Cross-Products                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| Equivalent Ratios Applications (Grade 7)                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Part:Part, Part:Whole, and Whole:Part Ratios    | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Comparing Ratios & Rates using Unit Ratios & Unit Rates | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Proportions - Measurement Applications          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Proportions - Application Problems              | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Ratios, Rates & Proportions Review                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |

## UNIT 6: PERCENTS & PERCENT APPLICATIONS

| Topic                                                                   | Worksheet             | Answer Key                | Explanation           |
|-------------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Calculating the Total Cost of a Restaurant Bill (Food Cost + Tax + Tip) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Converting Fractions, Decimals & Percents                               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Percent Problems using a Proportion                             | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Percent Problems using the Percent Equation                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Percent Problems: Financial Applications                                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Review on 6-1-6.4                                                       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Finding Percent Change                                                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Percent Applications - Level 1                                          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Percent Applications - Level 2                                          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Percent Applications - FRQ                                              | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Calculating Simple Interest                                             | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Calculating Compound Interest                                           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Review for Unit 6 Quiz                                                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Percent Applications Mixed                                              | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Percent Change                                                          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Percent Applications                                                    | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

## UNIT 7: 2 DIMENSIONAL & 3 DIMENSIONAL GEOMETRY

| Topic                                                              | Worksheet             | Answer Key                | Explanation           |
|--------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Area of Parallelograms: Finding Area / base / height (Grade 6)     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Area of Triangles: Finding Area / base / height (Grade 6)          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Area of Parallelograms & Triangles on a Coordinate Plane (Grade 6) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Calculating Area of Composite Figures (2D Shapes) (Grade 6)        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| Surface Area & Nets of Pyramids & Prisms                           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| Surface Area of Prisms & Pyramids                                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| Volume of Right Rectangular Prisms (Grade 6)                       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| Volume of Right Rectangular Prisms (Unit Cubes) (Grade 6)          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| Simplifying Square Roots (Grade 8)                                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| The Pythagorean Theorem (Grade 7)                                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| The Distance Formula (Grade 8)                                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| The Pythagorean Theorem (Grade 8)                                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Approximating Values of Square Roots (Grade 8)                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Simplifying Square Roots - Whole Numbers (Grade 8)                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Volume of Rectangular Prisms with Unit Cubes #1 (Grade 6)          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Volume of Rectangular Prisms with Unit Cubes #2 (Grade 6)          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Volume of Rectangular Prisms with Unit Cubes #3 (Grade 6)          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

## UNIT 8: STATISTICS & DATA DISPLAYS

| Topic                                                  | Worksheet             | Answer Key                | Explanation           |
|--------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Statistical Questions                                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Measures of Center- Min, Max, Range, Median, Mode, MAD | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Mean Absolute Deviation (M.A.D)                        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
|                                                        |                       |                           |                       |
|                                                        |                       |                           |                       |
|                                                        |                       |                           |                       |
| Box Plots - Mammal Life Span                           | <a href="#">Blank</a> | Annotated                 | Video                 |
| Measures of Center & Variability - Rainfall in a Week  | <a href="#">Blank</a> | Annotated                 | Video                 |
|                                                        |                       |                           |                       |
|                                                        |                       |                           |                       |
|                                                        |                       |                           |                       |
| Mean vs. Mean Absolute Deviation Analysis              | <a href="#">Blank</a> | Annotated                 | Video                 |
| Comparing 2 Populations of Data                        |                       |                           |                       |
| Probability & Odds                                     | <a href="#">Blank</a> | Annotated                 | Video                 |
| The Multiplication Principle                           | <a href="#">Blank</a> | Annotated                 | Video                 |
| Independent & Dependent Events                         | <a href="#">Blank</a> | Annotated                 | Video                 |
| Fundamental Counting Principle                         |                       |                           |                       |
| Correlations & Linear Association                      |                       |                           |                       |
| Linear Models, Lines of Best Fit & Linear Regressions  |                       |                           |                       |
| Two-Way Frequency Tables                               |                       |                           |                       |
|                                                        |                       |                           |                       |

# Algebra 1

## Algebra 1

- [Solving Equations](#)
- [Solving Absolute Value Equations](#)
- [Solving & Graphing Inequalities](#)
- [Linear Equations](#)
- [Arithmetic Sequences](#)
- [Linear Systems of Equations & Inequalities](#)
- [Exponential Expressions & Exponent Properties](#)
- [Simplifying Radical Expressions](#)
- [Factoring Trinomials \(Quadratics\)](#)
- [Graphing Quadratic Functions](#)
- [Quadratic Equation Application Problems](#)



| Solving Equations                                         |                       |                           |                       |
|-----------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Solving 1-Step Equations                                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving 2-Step Equations                                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Multi-Step Equations                              | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Multi-Step Equations with Fractions               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Multi-Step Equations_2 ***#8 is $x=4$             | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Consecutive Even / Odd Integers Application Word Problems | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Multi-Step Equations Applications: Coin Problems          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Solving Absolute Value Equations                                 |                       |                           |                       |
|------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Solving Absolute Value Equations [no fractions, only inside AV]  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Absolute Value Equations [yes fractions, only inside AV] | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Absolute Value Equations [no fractions, outside AV too]  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Absolute Value Equations                                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Solving & Graphing Inequalities                |                       |                           |                       |
|------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Solving & Graphing 1-Step Inequalities         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving & Graphing 2-Step Inequalities         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving & Graphing Compound Inequalities       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving Absolute Value Inequalities            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving & Graphing Absolute Value Inequalities | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Linear Equations                         |                       |                           |                       |
|------------------------------------------|-----------------------|---------------------------|-----------------------|
| Understanding Slope as a Ratio           | <del>Blank</del>      | <del>Annotated</del>      | <a href="#">Video</a> |
| Finding Slope Given Two Points           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear Equations in Slope-Intercept Form | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear Equations in Standard Form        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

|                                                           |                       |                           |                       |
|-----------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Writing Linear Equations Given 2 Points (S-I Form)        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Writing a Linear Equation from 2 Points (All 3 Forms)     | <del>Blank</del>      | <del>Annotated</del>      | <a href="#">Video</a> |
| Linear Equations: Graphing, Intercepts & Slope            | <del>Blank</del>      | <del>Annotated</del>      | <a href="#">Video</a> |
| Writing Linear Equations Given a Point and Slope          | Blank                 | Annotated                 | Video                 |
| Writing Equations of Parallel & Perpendicular Lines       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear Equations: Mixed Application Problems (4 examples) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear Equations: Mixed Application Problems (2 examples) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Arithmetic Sequences                                                      |                       |                           |                       |
|---------------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Writing Recursive & Explicit Formulas                                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Rewriting Recursive & Explicit Formulas (Changing Forms)                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| Finding the Explicit Formula & 1st 3 Terms with Given Information         | <a href="#">Blank</a> | <a href="#">Annotated</a> | Video                 |
| Writing an Arithmetic Sequence given 2 Terms                              | <a href="#">Blank</a> | <a href="#">Annotated</a> | Video                 |
| Finding the Sum of a Finite Arithmetic Sequence (not given the last term) | <a href="#">Blank</a> | <a href="#">Annotated</a> | Video                 |
| Arithmetic Sequence Application Problem - Parachutist                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | Video                 |
| Arithmetic Sequence Application Problem - Theater Rows                    | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Arithmetic Sequence Application Problem - Algebraic                       | <a href="#">Blank</a> | Annotated                 | Video                 |

| Linear Systems of Equations & Inequalities                             |                       |                           |                       |
|------------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Choosing when to use Substitution or Elimination Method                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Special Types of Linear Systems                                        | <a href="#">Blank</a> | Annotated                 | Video                 |
| Solving a Linear System by Graphing                                    | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Linear System by Substitution                                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Linear System by Elimination (No LCM Needed)                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Linear System by Elimination (LCM Needed)                    | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem - Coin Combinations             | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem - Mixture Percent Concentration | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem #1                              | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

|                                                 |                       |                           |                       |
|-------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Linear System Application Word Problem #2       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem #3       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem #4       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Linear System Application Word Problem #5       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Systems of Linear Inequalities - Application #1 | Blank                 | Annotated                 | Video                 |
| Systems of Linear Inequalities - Application #2 | Blank                 | Annotated                 | Video                 |

| Exponential Expressions & Exponent Properties                |                       |                           |                       |
|--------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Using the Product of Powers Property                         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Using the Power of Powers Property                           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Combining the Product and Powers Properties                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Using the Quotient of Powers Property (only positive)        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Using the Quotient of Powers Property (with negative)        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Combining the Product & Quotient Properties #1               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Combining the Product & Quotient Properties #2               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Applying Exponent Properties Involving Products              | <a href="#">Blank</a> | <a href="#">Annotated</a> | Video                 |
| Applying Exponent Properties Involving Quotients             | <a href="#">Blank</a> | Annotated                 | Video                 |
| Combined Exponent Properties Practice                        | <a href="#">Blank</a> | Annotated                 | Video                 |
| Zero & Negative Exponent Rules for Exponents                 | <a href="#">Blank</a> | Annotated                 | Video                 |
| Fractional Exponent Rules for Exponents                      | <a href="#">Blank</a> | Annotated                 | Video                 |
| Write & Graph Exponential Growth Functions                   | Blank                 | Annotated                 | Video                 |
| Exponential Growth / Decay Application Word Problems #1      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Write the Equation of an Exponential Equation given 2 Points | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Simplifying Radical Expressions                    |                       |                           |                       |
|----------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Approximating Square Roots By Hand (no calculator) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Simplifying Square Roots with Whole Numbers        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Simplifying Square Roots with Monomials            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

|                                                 |                       |                           |                       |
|-------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Adding & Subtracting Radical Expressions        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Simplifying Square Roots with Imaginary Numbers | Blank                 | Annotated                 | Video                 |
| Adding & Subtracting Radical Expressions        | Blank                 | Annotated                 | Video                 |
| Multiplying Radical Expressions                 | Blank                 | Annotated                 | Video                 |
| Rationalizing Radical Expressions               | Blank                 | Annotated                 | Video                 |
| Simplifying Cube Roots with Monomials           | Blank                 | Annotated                 | Video                 |
| Simplifying Quartic Roots with Monomials        | Blank                 | Annotated                 | Video                 |

| Factoring Trinomials (Quadratics)            |                       |                            |                       |
|----------------------------------------------|-----------------------|----------------------------|-----------------------|
| Factoring Quadratic Trinomials (a=1)         | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Quadratic Trinomials (a>1)         | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Quadratics [a=1]                   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Quadratics [a>1]                   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Quadratic Trinomials with a GCF #1 | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Factoring Quadratic Trinomials with a GCF #2 | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Factoring Quadratic Trinomials with a GCF #3 | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Factoring Quadratic Trinomials with a GCF #4 | <a href="#">Blank</a> | Answer Key                 | Video                 |

| Graphing Quadratic Functions               |                       |                            |                       |
|--------------------------------------------|-----------------------|----------------------------|-----------------------|
| Graph Quadratic Functions in Standard Form | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Graph Quadratic Functions in Vertex Form   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Graph Quadratic Functions in Factored Form | <a href="#">Blank</a> | Answer Key                 | Video                 |

| Quadratic Equation Application Problems               |                       |                            |                       |
|-------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Quadratic Equation Applications: Volume of Aquarium   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Area of Rectangles   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Projectile Motion #1 | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Projectile Motion #2 | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

|                                                                            |                       |                            |                       |
|----------------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Quadratic Equation Applications: Projectile Motion #3                      | <a href="#">Blank</a> | Annotated                  | Video                 |
| Quadratic Function Application: Model Rocket Path Problem - Write Function | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Determine Integers #1                     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Determine Integers #2                     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

# Geometry

## Geometry

- [Midpoint & Distance Formula](#)
- [Parallel & Perpendicular Lines](#)
- [Transformations](#)
- [Triangles](#)
- [Relationships in Triangles](#)
- [Similar Triangles](#)
- [Coordinate Proofs](#)
- [Circles](#)

| The Midpoint & Distance Formula                            |                       |                           |                       |
|------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| The Distance Formula                                       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Finding Partial Distances Between Points                   | <a href="#">Blank</a> | Annotated                 | Video                 |
| The Midpoint Formula: Finding an Endpoint                  | <a href="#">Blank</a> | Annotated                 | Video                 |
| <b>Proving</b> the Pythagorean Theorem Using a Trapezoid   | Blank                 | Answer Key                | <a href="#">Video</a> |
| The Pythagorean Theorem                                    | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Area of Kites & Trapezoids (Multiple Methods)              | Blank                 | Answer Key                | <a href="#">Video</a> |
| Circles: Find the Center & Radius by Completing the Square | Blank                 | Answer Key                | <a href="#">Video</a> |

| Parallel & Perpendicular Lines                                           |                       |                           |                       |
|--------------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Finding Equations of Parallel & Perpendicular Lines #1                   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Finding Equations of Parallel & Perpendicular Lines #2                   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Finding the Equation of a Perpendicular Bisector                         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Parallel Line Slopes: Finding a Missing Value                            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Perpendicular Line Slopes: Finding a Missing Value                       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Parallel & Perpendicular Lines: Finding Missing Values #1                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Parallel & Perpendicular Lines: Finding Missing Values #2                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Writing a Linear Equation for a Parallel & Perpendicular Line            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Parallel Lines & Transversals (Prove Lines are Parallel) <b>Proof #1</b> | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Parallel Lines & Transversals (Prove Lines are Parallel) <b>Proof #2</b> | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Parallel Lines & Transversals (Prove Lines are Parallel) <b>Proof #3</b> | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Parallel Lines & Transversals (Prove Lines are Parallel) <b>Proof #4</b> | <a href="#">Blank</a> | Annotated                 | Video                 |

| Transformations                                            |                       |                           |                       |
|------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Writing the Equation of a Line of Reflection (Triangle #1) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Writing the Equation of a Line of Reflection (Triangle #2) | <a href="#">Blank</a> | Annotated                 | Video                 |



|                                                              |                       |           |       |
|--------------------------------------------------------------|-----------------------|-----------|-------|
| Writing the Equation of a Line of Reflection (Quadrilateral) | <a href="#">Blank</a> | Annotated | Video |
|--------------------------------------------------------------|-----------------------|-----------|-------|

| Triangles                                                            |                       |                           |                       |
|----------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Triangle Exterior Angle Theorem <b>Proof</b>                         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| The Triangle Congruence Theorem <b>Proof</b>                         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Isosceles Triangle <b>Proof</b>                                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Proving Triangles are Congruent using SAS ( <b>Proof</b> )           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Proving Triangles are Congruent using HL ( <b>Proof</b> )            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Proving Triangles are Congruent using HL, SAS & SSS ( <b>Proof</b> ) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Proving Triangles are Congruent using S.A.P. & SAS ( <b>Proof</b> )  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Proving Segments are Congruent ( <b>Proof</b> )                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Geometry <b>Proof</b> using SSS, ASA & CPCTC                         | <a href="#">Blank</a> | Answer Key                | <a href="#">Video</a> |
| Find the Orthocenter Given 3 Vertices of an Obtuse Triangle          | <a href="#">Blank</a> | Answer Key                | <a href="#">Video</a> |
| Circumcenters: Figuring out Missing Measurements                     | <a href="#">Blank</a> | Answer Key                | <a href="#">Video</a> |
| Surface Area of Basic Prisms & Pyramids Using Nets                   | <a href="#">Blank</a> | Answer Key                | <a href="#">Video</a> |

| Relationships in Triangles                                |                       |            |                       |
|-----------------------------------------------------------|-----------------------|------------|-----------------------|
| Finding the Orthocenter: Acute Triangle Given 3 Vertices  | <a href="#">Blank</a> | Answer Key | <a href="#">Video</a> |
| Finding the Orthocenter: Obtuse Triangle Given 3 Vertices | <a href="#">Blank</a> | Answer Key | <a href="#">Video</a> |
| Finding the Circumcenter: Given 3 Vertices                | <a href="#">Blank</a> | Answer Key | Video                 |
| Circumcenters: Finding Missing Measurements               | <a href="#">Blank</a> | Answer Key | <a href="#">Video</a> |
| Incenters: Algebraic Problem                              | <a href="#">Blank</a> | Answer Key | Video                 |

| Similarity with Triangles           |                       |                            |                       |
|-------------------------------------|-----------------------|----------------------------|-----------------------|
| Angle Bisector Theorem (vs. Median) | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solving Quadratic Proportions       | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Multi-step Factoring                | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
|                                     | Blank                 | Answer Key                 | Video                 |

|                              |                       |                            |                       |
|------------------------------|-----------------------|----------------------------|-----------------------|
| Incenters: Algebraic Problem | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
|------------------------------|-----------------------|----------------------------|-----------------------|

|                                                                            |                       |                            |                       |
|----------------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| <b>Coordinate Plane Geometry &amp; Proofs</b>                              |                       |                            |                       |
| Coordinate Proof Geometry: Classify the Triangle & Find the Area           | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Coordinate Proof Geometry: Classify the Quadrilateral & Find the perimeter | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

|                                                                     |                       |                            |                       |
|---------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| <b>Circles</b>                                                      |                       |                            |                       |
| Area & Arc Length of a Sector (Writing Expressions)                 | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Finding an Arc Length                                               | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Finding an Arc Length in Radians                                    | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Inscribed Angles: Finding Arc Lengths & Angles                      | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Area of a Sector & Length of an Arc Problem                         | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Area of a Sector minus the Area of a Triangle (Trigonometry Needed) | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Tangent Lines to a Circle - Marble on a L-shaped Track              | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Circle & Tangent Line Problem (Quadratic)                           | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Circle Application Problem - 8 Lane Track                           | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Secant Lines & Segments (Intersect Outside)                         | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

# Algebra 2

## Algebra 2

- [Interval Notation \(Domain, Range, Inc, Dec,...\)](#)
- [Factoring Trinomials \(Quadratics\)](#)
- [Graphing Quadratic Functions](#)
- [Converting Between Quadratic Forms](#)
- [Solving Quadratic Equations](#)
- [Solving Quadratic Application Problems](#)
- [Complex / Imaginary Numbers](#)
- [Polynomials](#)
- [Rational Functions](#)
- [Rational Exponents & Radical Functions & Equations](#)
- [Exponential & Logarithmic Functions](#)
- [Trigonometry Basics](#)
- [Graphing Trigonometric Functions](#)
- [Trigonometry: Angle of Elevation & Depression Application Problems](#)
- [Law of Sines & Law of Cosines](#)

| Interval Notation: Domain, Range, Increasing, Decreasing, Positive, Negative |                       |                           |                       |
|------------------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| How to Find Essential Intervals for Quadratics                               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Practice Writing Interval Notation with Quadratic Functions                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Factoring Trinomials (Quadratics)            |                       |                            |                       |
|----------------------------------------------|-----------------------|----------------------------|-----------------------|
| Factoring Quadratic Trinomials (a=1)         | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Quadratic Trinomials (a>1)         | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Quadratics [a=1]                   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Quadratics [a>1]                   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Quadratic Trinomials with a GCF #1 | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Factoring Quadratic Trinomials with a GCF #2 | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Factoring Quadratic Trinomials with a GCF #3 | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Factoring Quadratic Trinomials with a GCF #4 | <a href="#">Blank</a> | Answer Key                 | Video                 |

| Graphing Quadratic Functions               |                       |                            |                       |
|--------------------------------------------|-----------------------|----------------------------|-----------------------|
| Graph Quadratic Functions in Standard Form | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Graph Quadratic Functions in Vertex Form   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Graph Quadratic Functions in Factored Form | <a href="#">Blank</a> | Answer Key                 | Video                 |

| Converting Between Quadratic Forms     |                       |                            |                       |
|----------------------------------------|-----------------------|----------------------------|-----------------------|
| Convert Standard Form to Factored Form | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Convert Vertex Form to Standard Form   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Convert Standard Form to Vertex Form   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

| Solving Quadratic Equations            |                       |                            |                       |
|----------------------------------------|-----------------------|----------------------------|-----------------------|
| Solve Quadratic Equations by Factoring | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

|                                                                    |                       |                            |                       |
|--------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Solve Quadratic Equations with the Quadratic Formula               | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solving Quadratic Equations in Standard Form: Choosing a Method #1 | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solve Quadratic Equations by Taking Square Roots #1                | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solve Quadratic Equations by Taking Square Roots #2                | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solve Quadratic Equations by Completing the Square #1              | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solve Quadratic Equations by Completing the Square #2              | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Finding Solutions of Quadratics in all 3 Forms                     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

| Solving Quadratic Application Problems                                     |                       |                            |                       |
|----------------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Quadratic Equation Applications: Volume of Aquarium                        | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Area of Rectangles                        | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Projectile Motion #1                      | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Projectile Motion #2                      | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Projectile Motion #3                      | <a href="#">Blank</a> | Annotated                  | Video                 |
| Quadratic Function Application: Model Rocket Path Problem - Write Function | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Profit Maximization #1                    | <a href="#">Blank</a> | <a href="#">Annotated</a>  | <a href="#">Video</a> |
| Quadratic Equation Applications: Profit Maximization #2                    | <a href="#">Blank</a> | Annotated                  | Video                 |
| Quadratic Equation Applications: Determine Integers #1                     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Quadratic Equation Applications: Determine Integers #2                     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

| Complex / Imaginary Numbers                              |                       |                            |                       |
|----------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Evaluating Powers of "i"                                 | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Adding & Subtracting Complex Numbers                     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Multiplying Complex Numbers                              | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Simplifying Negative Square Root Expressions (imaginary) | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Rationalizing Imaginary Denominators                     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Finding the Absolute Value of Complex Numbers            | Blank                 | Answer Key                 | Video                 |
| Graphing Complex Numbers on the Complex Plane            | Blank                 | Answer Key                 | Video                 |

| Polynomials                                                |                       |                            |                       |
|------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Adding & Subtracting Polynomials                           | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Multiplying Polynomials                                    | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Multiplying *Special Case* Polynomials                     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Special Case Polynomials                         | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Polynomials Completely                           | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Cubic Polynomials by Grouping                    | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Cubic Polynomials by Grouping                    | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Polynomial Long Division (No Remainders)                   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Polynomial Synthetic Division                              | Blank                 | Answer Key                 | Video                 |
| Synthetic Division: Evaluating a Function at a Given Value | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Synthetic Division: Factoring a Cubic Given a Factor       | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Factoring Polynomials: Rational Roots Theorem              | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Finding Real & Complex Zeros of a Polynomial               | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Writing a Polynomial Given a set of Roots/Zeros            | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

| Rational Functions                                     |                       |                            |                       |
|--------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Graphing Rational Function Example #1                  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Graphing Rational Function Example #2                  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Graphing Rational Function Example #3                  | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Graphing Rational Function Example #4                  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Graphing Rational Function Example #5                  | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Graphing Rational Functions (Understanding Asymptotes) | Blank                 | Answer Key                 | <a href="#">Video</a> |
| Graphing Rational Functions #1 (4 examples)            | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Graphing Rational Functions #2 (4 examples)            | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Solving Rational Equations                             | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Solving Rational Equations #2                          | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Work Word Problem #1                                   | <a href="#">Blank</a> | Answer Key                 | Video                 |

|                      |                       |            |       |
|----------------------|-----------------------|------------|-------|
| Work Word Problem #2 | <a href="#">Blank</a> | Answer Key | Video |
| Work Word Problem #3 | <a href="#">Blank</a> | Answer Key | Video |
| Work Word Problem #4 | <a href="#">Blank</a> | Answer Key | Video |
| Work Word Problem #5 | <a href="#">Blank</a> | Answer Key | Video |
| Work Word Problem #6 | <a href="#">Blank</a> | Answer Key | Video |

| Rational Exponents & Radical Functions                     |       |            |                       |
|------------------------------------------------------------|-------|------------|-----------------------|
| Practice with Negative & Zero Exponents                    | Blank | Answer Key | <a href="#">Video</a> |
| How Exponents & Radicals are Related                       | Blank | Answer Key | <a href="#">Video</a> |
| Review on Simplifying Radicals (Square Roots)              | Blank | Answer Key | <a href="#">Video</a> |
| Simplifying Radicals (4 examples with higher roots)        | Blank | Answer Key | <a href="#">Video</a> |
| Simplifying Exponential Exponent Expressions               | Blank | Answer Key | <a href="#">Video</a> |
| Solving Radical Equations (4 examples)                     | Blank | Answer Key | <a href="#">Video</a> |
| Solving Radical Equations with Extraneous Solutions (3 Ex) | Blank | Answer Key | <a href="#">Video</a> |

| Exponential & Logarithmic Functions                  |                       |                            |                       |
|------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Logarithmic Properties & Change of Base Formula      | Blank                 | Answer Key                 | <a href="#">Video</a> |
| Evaluating Logarithms                                | Blank                 | Answer Key                 | Video                 |
| Expanding Logarithmic Expressions                    | Blank                 | Answer Key                 | Video                 |
| Condensing Logarithmic Expressions                   | Blank                 | Answer Key                 | Video                 |
| 50 Practice Problems Involving Logarithms            | Blank                 | Answer Key                 | <a href="#">Video</a> |
| Solving Logarithmic & Exponential Equations (10 Ex.) | Blank                 | Answer Key                 | <a href="#">Video</a> |
| Using Logarithm Properties to Approximate Logarithms | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Newton's Law of Cooling Application Problem          | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solving Logarithmic Equations (with Quadratics)      | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solving an Advanced Exponential Equation Problem #1  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solving an Advanced Logarithmic Equation Problem #1  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solving an Advanced Logarithmic Equation Problem #2  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |



|                                                                   |                       |                            |                       |
|-------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Solving a Logarithmic Equation (different bases)                  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Half-Life Application Problem - Solving for Time                  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Multiple Transformations on an Exponential Function<br>(Graphing) | <a href="#">Blank</a> | <a href="#">Annotated</a>  | <a href="#">Video</a> |
| Multiple Transformations on a Logarithmic Function (Graphing)     | <a href="#">Blank</a> | <a href="#">Annotated</a>  | <a href="#">Video</a> |

| Trigonometry Basics                                        |                       |                           |                       |
|------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Writing Reference Angles using Sketches                    | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Using Reference Angles to Evaluate Trigonometric Functions | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Exact Trigonometric Values of Special Angles               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Finding all 6 Trigonometric Ratios Given a Ratio           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Writing all 6 Trigonometric Ratios Given a Point           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Using a Trigonometric Ratio to find all 6 Ratios           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Graphing Trigonometric Functions                        |                       |                           |                       |
|---------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Graphing a Sine Function #1 (The Parent Function)       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #2 (with Translations)         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #3 (with Stretches)            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #4 (with a Reflection)         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #5 (lots of Transformations)   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function (Level 5)*                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #1 (The Parent Function)     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #2 (with Translations)       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #3 (with Stretches)          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #4 (with a Reflection)       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #5 (lots of Transformations) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cotangent Function #1                        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosecant Function #1                         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Angle of Elevation / Depression Application Problems                  |                       |                            |                       |
|-----------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Angle of Elevation & Depression Application Problems (5 Examples)     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Angle of Elevation Application Problem (walking closer - 2 triangles) | <a href="#">Blank</a> | Answer Key                 | Video                 |

| Law of Sines & Law of Cosines                  |                       |                            |                       |
|------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Law of Sines (3 SSA Cases)                     | <a href="#">Blank</a> | Annotated                  | Video                 |
| The Law of Sine & Law of Cosine                | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Law of Sine & Law of Cosines Practice Problems | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Law of Cosines Application Word Problem #1     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Law of Sines: Application Word Problem #1      | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Law of Cosines: Application Word Problem #1    | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

# Pre-Calculus

## Pre-Calculus

- [Trigonometry Basics](#)
- [Graphing Trigonometric Functions](#)
- [Angle of Elevation / Depression Application Problems](#)
- [Inverse Trigonometric Functions](#)
- [Verifying Trigonometric Identities](#)
- [Solving Trigonometric Equations](#)
- [Partial Fraction Decomposition](#)
- [Exponential & Logarithmic Functions](#)
- [Rational Equations, Inequalities & Functions](#)
- [Vectors](#)

| Trigonometry Basics                                        |                       |                           |                       |
|------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Writing Reference Angles using Sketches                    | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Using Reference Angles to Evaluate Trigonometric Functions | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Exact Trigonometric Values of Special Angles               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Finding all 6 Trigonometric Ratios Given a Ratio           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Writing all 6 Trigonometric Ratios Given a Point           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Using a Trigonometric Ratio to find all 6 Ratios           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Graphing Trigonometric Functions                        |                       |                           |                       |
|---------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Graphing a Sine Function #1 (The Parent Function)       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #2 (with Translations)         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #3 (with Stretches)            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #4 (with a Reflection)         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #5 (lots of Transformations)   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function (Level 5)*                     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #1 (The Parent Function)     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #2 (with Translations)       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #3 (with Stretches)          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #4 (with a Reflection)       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #5 (lots of Transformations) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cotangent Function #1                        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosecant Function #1                         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Inverse Trigonometric Functions            |                       |            |                       |
|--------------------------------------------|-----------------------|------------|-----------------------|
| How to Evaluate Inverse Trig Functions     | Blank                 | Answer Key | <a href="#">Video</a> |
| Evaluating Inverse Trigonometric Functions | <a href="#">Blank</a> | Annotated  | Video                 |

| Graphing Trigonometric Functions                        |                       |                           |                       |
|---------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Graphing a Sine Function #1 (The Parent Function)       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #2 (with Translations)         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #3 (with Stretches)            | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #4 (with a Reflection)         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Sine Function #5 (lots of Transformations)   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #1 (The Parent Function)     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #2 (with Translations)       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #3 (with Stretches)          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #4 (with a Reflection)       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosine Function #5 (lots of Transformations) | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cotangent Function #1                        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Graphing a Cosecant Function #1                         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Angle of Elevation / Depression Application Problems                  |                       |                            |                       |
|-----------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Angle of Elevation & Depression Application Problems (5 Examples)     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Angle of Elevation Application Problem (walking closer - 2 triangles) | <a href="#">Blank</a> | Answer Key                 | Video                 |

| Verifying Trigonometric Identities |                       |                           |                       |
|------------------------------------|-----------------------|---------------------------|-----------------------|
| Various Levels (5 Examples)        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Level 1 - Easy #1                  | <a href="#">Blank</a> | Annotated                 | Video                 |
| Level 1 - Easy #2                  | <a href="#">Blank</a> | Annotated                 | Video                 |
| Level 2 - Medium #1                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Level 3 - Hard #1                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Level 3 - Hard #2                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Solving Trigonometric Equations                      |                       |                           |                       |
|------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Solving a Trigonometric Equation [Example 1]         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Trigonometric Equation [Example 2]         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Quadratic Trig Equation #1                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Quadratic Trig Equation #2                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Quadratic Trig Equation #3                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Quadratic Trig Equation #4                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Quadratic Trig Equation #5                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Quadratic Trig Equation with Identities #1 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Quadratic Trig Equation with Identities #2 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Quadratic Trig Equation with Identities #3 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Solving a Quadratic Trig Equation with Radians #1    | <a href="#">Blank</a> | Annotated                 | Video                 |
| Solving a Quadratic Trig Equation with Radians #2    | <a href="#">Blank</a> | Annotated                 | Video                 |
| Solving a Quadratic Trig Equation with Radians #3    | <a href="#">Blank</a> | Annotated                 | Video                 |

| Exponential & Logarithmic Functions                  |                       |                            |                       |
|------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Logarithmic Properties & Change of Base Formula      | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Evaluating Logarithms                                | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Expanding Logarithmic Expressions                    | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Condensing Logarithmic Expressions                   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| 50 Practice Problems Involving Logarithms            | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solving Logarithmic & Exponential Equations (10 Ex.) | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Using Logarithm Properties to Approximate Logarithms | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Newton's Law of Cooling Application Problem          | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

|                                                                   |                       |                            |                       |
|-------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Solving Logarithmic Equations (with Quadratics)                   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solving an Advanced Exponential Equation Problem #1               | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solving an Advanced Logarithmic Equation Problem #1               | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Solving an Advanced Logarithmic Equation Problem #2               | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Half-Life Application Problem - Solving for Time                  | Blank                 | Answer Key                 | <a href="#">Video</a> |
| Multiple Transformations on an Exponential Function<br>(Graphing) | <a href="#">Blank</a> | <a href="#">Annotated</a>  | <a href="#">Video</a> |
| Multiple Transformations on a Logarithmic Function (Graphing)     | <a href="#">Blank</a> | <a href="#">Annotated</a>  | <a href="#">Video</a> |

| Partial Fraction Decomposition                          |                       |                           |                       |
|---------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Partial Fraction Decomposition (Lower Degree on Top)_1  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Partial Fraction Decomposition (Lower Degree on Top)_2  | <a href="#">Blank</a> | Annotated                 | Video                 |
| Partial Fraction Decomposition (Mixed Degrees)_1        | <a href="#">Blank</a> | Annotated                 | Video                 |
| Partial Fraction Decomposition (Mixed Degrees)_2        | <a href="#">Blank</a> | Annotated                 | Video                 |
| Partial Fraction Decomposition Form                     | Blank                 | Answer Key                | <a href="#">Video</a> |
| Partial Fraction Decomposition (Proper Fractions)       | Blank                 | Answer Key                | <a href="#">Video</a> |
| Partial Fraction Decomposition (Improper Fractions)     | Blank                 | Answer Key                | <a href="#">Video</a> |
| Bearings & Navigation Word Problems (5 Ex.)             | Blank                 | Answer Key                | <a href="#">Video</a> |
| Law of Sines Application Problem with Bearings          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Writing Complex Numbers in Polar/Trig & Standard Form   | Blank                 | Answer Key                | <a href="#">Video</a> |
| Converting Polar Equations to Rectangular Form (13 Ex.) | Blank                 | Answer Key                | <a href="#">Video</a> |
| Equation of a Hyperbola Given the Foci & Asymptotes     | Blank                 | Answer Key                | <a href="#">Video</a> |

| Rational Equations, Inequalities & Functions |       |            |                       |
|----------------------------------------------|-------|------------|-----------------------|
| Solving Rational Inequalities                | Blank | Answer Key | <a href="#">Video</a> |

| Vectors                                    |                       |                            |                       |
|--------------------------------------------|-----------------------|----------------------------|-----------------------|
| Vector Application Problem: Boat + Current | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |



# AP Calculus AB / BC

# AP CALCULUS AB / BC

## **Unit 1: Limits & Continuity** [AB Exam 10-12% — BC Exam 4-7%]

- [Evaluating Limits](#)
- [Limit Definition](#)

## **Unit 2: Differentiation: Definition & Fundamental Properties** [AB Exam 10-12% — BC Exam 4-7%]

- [Derivatives](#)
- [Derivatives of Trigonometric Functions](#)
- [Equations of Tangent Lines](#)

## **Unit 3: Differentiation: Composite, Implicit, & Inverse Functions** [AB Exam 9-13% — BC Exam 4-7%]

- [Chain Rule](#)
- [Implicit Differentiation](#)
- [Multiple Choice Question Practice for AP Exam](#)

## **Unit 4: Contextual Applications of Differentiation** [AB Exam 10-15% — BC Exam 6-9%]

- [Differentiation \(Contextual\)](#)
- [Related Rates](#)

## **Unit 5: Analytical Applications of Differentiation** [AB Exam 15-18% — BC Exam 8-11%]

- [Optimization](#)

## **Unit 6: Integration & Accumulation of Change** [AB Exam 17-20% — BC Exam 17-20%]

- [Evaluating Integrals from Graphs](#)
- [Evaluating Definite & Indefinite Integrals](#)

## **Unit 7: Differential Equations** [AB Exam 6-12% — BC Exam 6-9%]

## **Unit 8: Applications of Integration** [AB Exam 10-15% — BC Exam 6-9%]

- [Evaluating Definite & Indefinite Integrals](#)

## **Unit 9: Parametric Equations, Polar Coordinates, & Vector-Valued Functions** [BC Exam Only 11-12%]

## **Unit 10: Infinite Sequences & Series** [BC Exam Only 17-18%]

- [Series](#)

## **AP Exam Released FRQ's [AB & BC]**

- [2025 AP Calculus AB - Released FRQ's](#)

## Unit 1 - Limits & Continuity

### Evaluating Limits

|                                                      |                       |                            |                       |
|------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Evaluating Limits at Infinity & Negative Infinity    | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Evaluating a Limit with Radicals (Using a Conjugate) | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

### Limit Definition

|                                             |                       |                            |                       |
|---------------------------------------------|-----------------------|----------------------------|-----------------------|
| How to Use the Definition of the Derivative | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
|---------------------------------------------|-----------------------|----------------------------|-----------------------|

## Unit 2 - Differentiation: Definition & Fundamental Properties

### Derivatives

|                                                             |                       |                            |                       |
|-------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Finding the Derivative using the Product Rule               | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Finding the Derivative using the Power Rule                 | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Using the Definition of the Derivative Practice             | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| AP Calculus Exam Question: Position, Velocity, Acceleration | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

### Derivatives of Trigonometric Functions

|                                                                         |                       |                            |                       |
|-------------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Deriving the Derivative of a Trig Function #1                           | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Finding the Derivatives of Trig Functions [3 Examples]                  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Finding the Derivatives of Trig Functions [3 Examples]                  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Find the Derivative of a Trig Function at an x-value (Big 10: Letter i) | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

### Finding Equations of Tangent Lines

|                                                       |                       |                            |                       |
|-------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Finding the Equation of a Tangent Line of an Equation | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
|-------------------------------------------------------|-----------------------|----------------------------|-----------------------|

|                                                           |                       |                            |                       |
|-----------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Finding the Equation of a Tangent Line of a Function      | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Finding the Equation of a Tangent Line to a Trig Function | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

## Unit 3

| Unit 3: Multiple Choice Question Practice for AP Exam |                              |              |              |
|-------------------------------------------------------|------------------------------|--------------|--------------|
| <a href="#">Question #1</a>                           | <a href="#">Question #6</a>  | Question #11 | Question #16 |
| <a href="#">Question #2</a>                           | <a href="#">Question #7</a>  | Question #12 | Question #17 |
| <a href="#">Question #3</a>                           | <a href="#">Question #8</a>  | Question #13 | Question #18 |
| <a href="#">Question #4</a>                           | <a href="#">Question #9</a>  | Question #14 |              |
| <a href="#">Question #5</a>                           | <a href="#">Question #10</a> | Question #15 |              |

| Chain Rule                            |                       |            |       |
|---------------------------------------|-----------------------|------------|-------|
| Chain Rule Practice Problem (tougher) | <a href="#">Blank</a> | Answer Key | Video |

| Implicit Differentiation                                           |                       |                            |                       |
|--------------------------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Implicit Differentiation - Example #1                              | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Implicit Differentiation - 2 Examples                              | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| 3 Implicit Differentiation Practice Problems                       | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Implicit Differentiation - Equation of Tangent Line & Normal Line  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Implicit Differentiation - Second Derivative Example (find $y''$ ) | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Implicit Differentiation - Find the Equation to a Tangent Line     | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Implicit Differentiation - Collegeboard 2015 FRQ #6                | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

## Unit 4

| Contextual Applications of Differentiation |                       |                            |                       |
|--------------------------------------------|-----------------------|----------------------------|-----------------------|
| 2017 FRQ - Bananas in a Grocery Store      | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

| Related Rates                                       |                       |                            |                       |
|-----------------------------------------------------|-----------------------|----------------------------|-----------------------|
| 3 Related Rates Practice Problems                   | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| 4 Differential Equations by Separation of Variables | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Related Rates: Square Inscribed in Circle Problem   | <a href="#">Blank</a> | <a href="#">Annotated</a>  | <a href="#">Video</a> |
| Related Rates: Coffee Filter Water Level Problem    | <a href="#">Blank</a> | <a href="#">Annotated</a>  | <a href="#">Video</a> |

| Inferences from Graph of $f$ , $f'$ or $f''$ (Points) |                       |                           |                       |
|-------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Example #2 (Given graph of $f$ )                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Example #1 (Given graph of $f''$ )                    | <a href="#">Blank</a> | Annotated                 | Video                 |

| Optimization                                       |                       |                            |                       |
|----------------------------------------------------|-----------------------|----------------------------|-----------------------|
| Optimization: Open Box Problem                     | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Optimization: Coordinate Plane Distance Problem    | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Optimization: Cylindrical Metal Container Problem  | <a href="#">Blank</a> | Answer Key                 | Video                 |
| Optimization: Rowing + Walking Combination Problem | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |
| Optimization: Offshore Well- Oil Pipeline Problem  | <a href="#">Blank</a> | <a href="#">Answer Key</a> | <a href="#">Video</a> |

## Unit 6 - Integration & Accumulation of Change

| Evaluating Integrals from Graphs                               |                       |                           |                       |
|----------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Calculate a Definite Integral from Graph (Level 3) - Example 1 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Evaluating Definite & Indefinite Integrals |
|--------------------------------------------|
|--------------------------------------------|

|                                                                   |                       |                           |                       |
|-------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Evaluating a Definite Integral (with a Radical)                   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Evaluating a Definite Integral (with an Absolute Value)           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Definite Integral Application: Finding the Area between 2 Curves  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Evaluating an Indefinite Integral: Using Substitution - Example 1 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Evaluating an Indefinite Integral: Using Substitution - Example 2 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Definite Integral - <b>Multiple Choice Question</b> [Past Exam]   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Definite Integral - <b>Multiple Choice Question</b> [Past Exam]   | <a href="#">Blank</a> | Annotated                 | Video                 |
| Higher Level Integral Problem (involving a logarithm)             | <a href="#">Blank</a> | <a href="#">Annotated</a> | Video                 |

|                                                              |                       |                           |                       |
|--------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
|                                                              |                       |                           |                       |
| Logistic Growth Models: Guppy Population Application Problem | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

|                                                                      |                       |                           |                       |
|----------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Series                                                               |                       |                           |                       |
| Finding the Sum of a Geometric Series                                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Does the Series Converge or Diverge? → Use The Ratio Test Example #1 | <a href="#">Blank</a> | Annotated                 | Video                 |
| Does the Series Converge or Diverge? → Use The Ratio Test Example #2 | <a href="#">Blank</a> | Annotated                 | Video                 |
| Does the Series Converge? → Use The Limit Comparison Test Example #1 | <a href="#">Blank</a> | Annotated                 | Video                 |
| Does the Series Converge? → Use The Limit Comparison Test Example #2 | <a href="#">Blank</a> | Annotated                 | Video                 |
| Does the Series Converge? → Use The Integral Test Example #1         | <a href="#">Blank</a> | Annotated                 | Video                 |
| Does the Series Converge? → Use The Integral Test Example #2         | <a href="#">Blank</a> | Annotated                 | Video                 |
| Find the Radius & Interval of Convergence for a Series #1            | <a href="#">Blank</a> | Annotated                 | Video                 |
| Find the Radius & Interval of Convergence for a Series #2            | <a href="#">Blank</a> | Annotated                 | Video                 |

## FRQ's - Free Response Questions

|                                                                         |
|-------------------------------------------------------------------------|
| 2025 AP Calculus AB - Released FRQ's ( <a href="#">Blank Original</a> ) |
|-------------------------------------------------------------------------|

|                                 |                       |           |       |
|---------------------------------|-----------------------|-----------|-------|
| 2025 AP Calculus AB Exam FRQ #1 | <a href="#">Blank</a> | Annotated | Video |
| 2025 AP Calculus AB Exam FRQ #2 | Blank                 | Annotated | Video |
| 2025 AP Calculus AB Exam FRQ #3 | Blank                 | Annotated | Video |
| 2025 AP Calculus AB Exam FRQ #4 | Blank                 | Annotated | Video |
| 2025 AP Calculus AB Exam FRQ #5 | Blank                 | Annotated | Video |
| 2025 AP Calculus AB Exam FRQ #6 | Blank                 | Annotated | Video |

# Standardized Test Prep



# Full Course / Standardized Test Prep

| NJSLA STATE-TESTING MATERIALS                                 |                             |                           |                       |
|---------------------------------------------------------------|-----------------------------|---------------------------|-----------------------|
| Topic                                                         | Worksheet                   | Answer Key                | Explanation           |
| NJSLA <b>Grade 6</b> - 10 Non-Calculator Practice Problems #1 | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| NJSLA <b>Grade 6</b> - 10 Non-Calculator Practice Problems #2 | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| NJSLA <b>Grade 6</b> - 10 Non-Calculator Practice Problems #3 | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| NJSLA <b>Grade 6</b> - 7 Non-Calculator Practice Problems #4  | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| NJSLA <b>Grade 6</b> - Calculator Practice Problems #1        | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| NJSLA <b>Grade 6</b> Review - 50 Practice Problems            | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| NJSA <b>Grade 6</b> - Statistics & Probability Question       | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| NJSLA <b>Grade 6</b> - Open-Ended Question                    | <a href="#">Blank</a>       | Annotated                 | Video                 |
| NJSLA <b>Grade 6</b> - Full Practice Test                     | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| NJSLA <b>Algebra 1</b> - 10 Non-Calculator Practice Problems  | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| NJSLA <b>Grade 6</b> Digital Library Items                    | <a href="#">Link to Doc</a> |                           |                       |
| FULL COURSE FINAL EXAMS                                       |                             |                           |                       |
| <b>Grade 6</b> Review - 75 Practice Problems                  | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| <b>Algebra 1</b> Review - 60 Practice Problems                | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |
| <b>Algebra 2</b> Review - 40 Practice Problems                | <a href="#">Blank</a>       | <a href="#">Annotated</a> | <a href="#">Video</a> |

# SAT / ACT Prep

# SAT / ACT Prep

| ACT / SAT MATERIALS                                     |                       |                           |                       |
|---------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| 2024-2025 ACT PRACTICE TEST                             | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Equation of Circles on a Coordinate Plane               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| *Algebra 2* Specific Concepts [4 Practice Problems]     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| *Algebra 2* Specific Concepts #2 [4 Practice Problems]  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| 20 SAT/ACT Problems a Middle Schooler Can Solve         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Ratios, Rates, Proportions & Percents (12 examples)     | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| 4 Trig Identity Problems                                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Average (Arithmetic Mean)                               | <a href="#">Blank</a> | Annotated                 | Video                 |
| 4 SAT/ACT Circle Problems                               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| 10 Tricky Trigonometry Problems                         | <del>Blank</del>      | <del>Annotated</del>      | <a href="#">Video</a> |
| Quadratics: Vertex Form (Completing the Square) Problem | <del>Blank</del>      | <del>Annotated</del>      | <a href="#">Video</a> |
| Radical Expression Problem                              | <del>Blank</del>      | <del>Annotated</del>      | <a href="#">Video</a> |
| Quadratics Problem with Missing Coefficients Problem    | <del>Blank</del>      | <del>Annotated</del>      | <a href="#">Video</a> |
| Equation of a Circle - Completing the Square Problem    | <del>Blank</del>      | <del>Annotated</del>      | <a href="#">Video</a> |
| Polynomial Long Division Rational Expression Problem    | <del>Blank</del>      | <del>Annotated</del>      | <a href="#">Video</a> |
|                                                         |                       |                           |                       |

# Fluency Practice

# Fluency Practice

- [Computation Fluency - Add/Subtract/Multiply/Divide](#)
- [Operations with Positive & Negative Numbers](#)
- [Prime & Composite #'s ; Factors & Multiples](#)
- [Fraction Basics](#)
- [Evaluating & Simplifying Numerical & Algebraic Expressions](#)

| Computation Fluency (Adding/Subtracting/Multiplying/Dividing) - Positive Numbers |                       |                           |                       |
|----------------------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Multi-Digit Addition                                                             | <a href="#">Blank</a> | Annotated                 | Video                 |
| Addition                                                                         | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Multi-Digit Subtraction                                                          | <a href="#">Blank</a> | Annotated                 | Video                 |
| Subtraction                                                                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Multi-Digit Addition & Subtraction (Mixed) - Level 1                             | <a href="#">Blank</a> | Annotated                 | Video                 |
| Multi-Digit Addition & Subtraction (Mixed) - Level 2                             | <a href="#">Blank</a> | Annotated                 | Video                 |
| Multi-Digit Addition & Subtraction (Mixed) - Level 3                             | <a href="#">Blank</a> | Annotated                 | Video                 |
| Multiplication Fluency Drills (up to 12x12) #1                                   | <a href="#">Blank</a> | Annotated                 | <del>Video</del>      |
| Multiplication Fluency Drills (up to 12x12) #2                                   | <a href="#">Blank</a> | Annotated                 | <del>Video</del>      |
| Multiplication Fluency Drills (up to 12x12) #3                                   | <a href="#">Blank</a> | Annotated                 | <del>Video</del>      |
| Multiplication Fluency Drills (up to 12x12) #4                                   | <a href="#">Blank</a> | Annotated                 | <del>Video</del>      |
| Standard Algorithm Multiplication                                                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Multi-Digit Multiplication #1                                                    | <a href="#">Blank</a> | Annotated                 | Video                 |
| Multi-Digit Multiplication #2                                                    | <a href="#">Blank</a> | Annotated                 | Video                 |
| Standard Algorithm Division                                                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Multi-Digit Division                                                             | <a href="#">Blank</a> | Annotated                 | Video                 |
| Evaluating Exponents                                                             | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Operations with Positive & Negative Numbers                   |                       |                           |                  |
|---------------------------------------------------------------|-----------------------|---------------------------|------------------|
| Adding Integers Practice                                      | <a href="#">Blank</a> | Annotated                 | <del>Video</del> |
| Adding Integers Practice #1 (20 Mixed Practice Problems)      | <a href="#">Blank</a> | Annotated                 | Video            |
| Subtracting Integers Practice                                 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del> |
| Subtracting Integers Practice #1 (20 Mixed Practice Problems) | <a href="#">Blank</a> | Annotated                 | Video            |
| Multiplying Integers Practice                                 | <a href="#">Blank</a> | Annotated                 | Video            |
| Dividing Integers Practice                                    | <a href="#">Blank</a> | Annotated                 | Video            |

|                                                            |                       |           |       |
|------------------------------------------------------------|-----------------------|-----------|-------|
| Adding Positive & Negative Decimals                        | <a href="#">Blank</a> | Annotated | Video |
| Subtracting Positive & Negative Decimals                   | <a href="#">Blank</a> | Annotated | Video |
| Adding Positive & Negative Fractions                       | <a href="#">Blank</a> | Annotated | Video |
| Adding Positive & Negative Fractions (Mixed Practice)      | <a href="#">Blank</a> | Annotated | Video |
| Subtracting Positive & Negative Fractions (Mixed Practice) | <a href="#">Blank</a> | Annotated | Video |

| Prime & Composite #'s ; Factors & Multiples |                       |                           |                       |
|---------------------------------------------|-----------------------|---------------------------|-----------------------|
| Prime & Composite Numbers                   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Divisibility Rules                          | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Writing Prime Factorizations                | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Writing Complete Factor Lists               | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Writing Multiples                           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Find the GCF of 2 Numbers                   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Find the LCM of 2 Numbers                   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

| Fraction Basics                                            |                       |                           |                       |
|------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Write Improper Fractions as Mixed Numbers                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Write Mixed Numbers as Improper Fractions                  | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Simplifying Fractions using Prime Factorizations           | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Adding Fractions with Common Denominators - Level 1        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Adding Fractions with Common Denominators - Level 2        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Subtracting Fractions with Common Denominators - Level 1   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Subtracting Fractions with Common Denominators - Level 2   | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Adding Fractions with Uncommon Denominators - Level 1      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Adding Fractions with Uncommon Denominators - Level 2      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Subtracting Fractions with Uncommon Denominators - Level 1 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Subtracting Fractions with Uncommon Denominators - Level 2 | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Multiplying Fractions & Mixed Numbers                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |

|                                    |                       |                           |                       |
|------------------------------------|-----------------------|---------------------------|-----------------------|
| Dividing Fractions & Mixed Numbers | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
|------------------------------------|-----------------------|---------------------------|-----------------------|

| Evaluating & Simplifying Numerical & Algebraic Expressions             |                       |                           |                       |
|------------------------------------------------------------------------|-----------------------|---------------------------|-----------------------|
| Evaluating Numerical Expressions (2 operations)                        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Evaluating Numerical Expressions (3 operations)                        | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Evaluating Numerical Expressions (4+ operations)                       | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Evaluating Variable Expressions_1                                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <del>Video</del>      |
| Evaluating Numerical Expressions - Decimals (3 Operations)             | <a href="#">Blank</a> | Annotated                 | Video                 |
| Evaluating Numerical Expressions - Fractions (3 Operations)            | <a href="#">Blank</a> | Annotated                 | Video                 |
| Evaluating Numerical Expressions - Financial Application Word Problems | <a href="#">Blank</a> | Annotated                 | Video                 |
| Evaluating Variable Expressions_2 (with integers)                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Simplifying Algebraic Expressions (Addition Only)                      | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
| Rewriting Expressions using the Distributive Property                  | <a href="#">Blank</a> | Annotated                 | Video                 |
| Factoring out the GCF using the Distributive Property                  | <a href="#">Blank</a> | Annotated                 | Video                 |
| Simplifying Algebraic Expressions (with Distributive Property)         | <a href="#">Blank</a> | Annotated                 | Video                 |
| Simplifying & Evaluating Algebraic Expressions                         | <a href="#">Blank</a> | Annotated                 | Video                 |

# FLUENCY PRACTICE



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[illegible]

# Reference Sheets

| HELPFUL REFERENCE SHEETS                                               |                                     |
|------------------------------------------------------------------------|-------------------------------------|
| Topic                                                                  | PDF                                 |
| Prime Factorization Reference Sheet [#’s 1-121]                        | <a href="#">PDF Reference Sheet</a> |
| Divisibility Rules [1-12]                                              | <a href="#">PDF Reference Sheet</a> |
| 12 Coordinate Planes (Numbered from -10 to +10)                        | <a href="#">PDF Sheet</a>           |
| 4 Operations Rules with Positive & Negative Rational Numbers           | <a href="#">PDF Reference Sheet</a> |
| Verbal Translations for Operations                                     | <a href="#">PDF Reference Sheet</a> |
| Inequalities Vocabulary                                                | <a href="#">Pdf Reference Sheet</a> |
| Blank Multiplication Chart [12x12]                                     | <a href="#">Blank PDF</a>           |
| Multiplication Chart [12x12]                                           | <a href="#">PDF Sheet</a>           |
| Unit Conversions Reference Sheet (Lengths)                             | <a href="#">PDF Reference Sheet</a> |
| Trigonometry Cheat Sheet (helpful for Algebra 2, Geo, Pre-Calc, & Calc | <a href="#">PDF Reference Sheet</a> |

# Math for Science

| Solving Equations                  |                       |                           |                       |
|------------------------------------|-----------------------|---------------------------|-----------------------|
| Calculating Density, Mass & Volume | <a href="#">Blank</a> | <a href="#">Annotated</a> | <a href="#">Video</a> |
|                                    | Blank                 | Annotated                 | Video                 |
|                                    | Blank                 | Annotated                 | Video                 |
|                                    | Blank                 | Annotated                 | Video                 |

# Spiral Reviews

| Grade 6 NJ State Standards - Spiral Review |                       |                           |
|--------------------------------------------|-----------------------|---------------------------|
| Topic                                      | Worksheet             | Answer Key                |
| Spiral Review #1                           | <a href="#">Blank</a> | <a href="#">Annotated</a> |
| Spiral Review #2                           | <a href="#">Blank</a> | <a href="#">Annotated</a> |
| Spiral Review #3                           | <a href="#">Blank</a> | Annotated                 |
| Spiral Review #4                           | <a href="#">Blank</a> | Annotated                 |
| Spiral Review #5                           | <a href="#">Blank</a> | Annotated                 |
| Spiral Review #6                           | <a href="#">Blank</a> | Annotated                 |
| Spiral Review #7                           | <a href="#">Blank</a> | Annotated                 |
| Spiral Review #8                           | Blank                 | Annotated                 |
| Spiral Review #9                           | Blank                 | Annotated                 |
| Spiral Review #10                          | Blank                 | Annotated                 |
| Spiral Review #11                          | Blank                 | Annotated                 |
| Spiral Review #12                          | Blank                 | Annotated                 |
| Spiral Review #13                          | Blank                 | Annotated                 |
| Spiral Review #14                          | Blank                 | Annotated                 |
| Spiral Review #15                          | Blank                 | Annotated                 |
| Spiral Review #16                          | Blank                 | Annotated                 |
| Spiral Review #17                          | Blank                 | Annotated                 |
| Spiral Review #18                          | Blank                 | Annotated                 |
| Spiral Review #19                          | Blank                 | Annotated                 |
| Spiral Review #20                          | Blank                 | Annotated                 |



| Grade 7 NJ State Standards - Spiral Review |           |            |
|--------------------------------------------|-----------|------------|
| Topic                                      | Worksheet | Answer Key |
| Spiral Review #1                           | Blank     | Annotated  |
| Spiral Review #2                           | Blank     | Annotated  |
| Spiral Review #3                           | Blank     | Annotated  |
| Spiral Review #4                           | Blank     | Annotated  |
| Spiral Review #5                           | Blank     | Annotated  |
| Spiral Review #6                           | Blank     | Annotated  |
| Spiral Review #7                           | Blank     | Annotated  |
| Spiral Review #8                           | Blank     | Annotated  |
| Spiral Review #9                           | Blank     | Annotated  |
| Spiral Review #10                          | Blank     | Annotated  |
| Spiral Review #11                          | Blank     | Annotated  |
| Spiral Review #12                          | Blank     | Annotated  |
| Spiral Review #13                          | Blank     | Annotated  |
| Spiral Review #14                          | Blank     | Annotated  |
| Spiral Review #15                          | Blank     | Annotated  |
| Spiral Review #16                          | Blank     | Annotated  |
| Spiral Review #17                          | Blank     | Annotated  |
| Spiral Review #18                          | Blank     | Annotated  |
| Spiral Review #19                          | Blank     | Annotated  |
| Spiral Review #20                          | Blank     | Annotated  |