



5TH GRADE

- Operations on Rational Numbers, decimals, prime numbers
- Word Problems (Time elapsed, Age problems, Distance-Travel,
- Inequalities, Comparing Numbers
- Place Value
- Properties of Numbers (Associative, Distributive)
- Number Patterns, geometric patterns
- Exponential Numbers, powers of 2, 3, 5
- Sum of finite number of numbers
- Binary Operations
- Division Algorithm, Remainder, Divisibility Rules
- Counting Principles, Probability
- Two-Step Equations, Rules for Table of Values
- Perimeter
- Odd Number, Even Number problems
- Least Common Multiple, Greatest Common Factor Problems
- Mean, Average problems

6TH GRADE

- Word problems with fractions (Age Problems, Discount, Tax Problems, Distance-Travel, Pool Filling, Mixture
- Number systems, place value
- Number Patterns, geometric patterns
- Percent Equations
- Exponential Numbers
- Counting Principles
- Operations on the sum of finite number of whole numbers, fractions
- Number Patterns
- Place Value, Inequalities
- Solving System of Equations
- Solving Ratio-Proportions with variables



- Operations on Rational Numbers
- Probability
- Odd Number, Even Number problems, Divisibility
- Least Common Multiple, Greatest Common Factor Problems
- Area and Volume of 2D and 3D Figures
- Arithmetic, Geometric Sequences and Series

7TH GRADE

- Number System
- Word Problems (Pool Filling, Distance-Travel, Interest Problems,)
- Absolute Value Equations, Inequalities
- Surface Area and Volume (2D, 3D Figures)
- Angles, Polygons
- Counting Principle, Permutation, Combination and Probability
- Exponential Numbers and Exponential Equations with whole number solutions
- Numeric Patterns
- Operations on the sum of finite number of whole numbers, fractions
- Age Problems
- Equations with square root
- Percent Equations
- Arithmetic, Geometric Sequences and Series
- Rotations, Reflections, Translations
- Expressions, Variables
- Divisibility Problems
- Ratio Proportion Problems

8TH GRADE

- Number Systems, Binary Operations
- Pythagorean Theorem
- Perimeter, Area, Surface Area and Volume (2D, 3D Figures)



- Simplify Rational Expressions, Ratio-Proportion
- Simplifying Square Root and Equations with square root
- Absolute Value Equations, Inequalities and their graphs
- Arithmetic, Geometric Sequences and Series
- Variables, Rational Numbers
- Simplifying Rational Expressions, Exponential Numbers
- Word Problems with whole numbers and fractions and “Work” word problems
- Permutation, Combination and Probability
- System of Equations, Ratio Proportion
- Multiplication of Binomials, Factoring Polynomials, Difference of Two Squares
- Percent Equations
- Numeric Patterns, Binomial Expansion, Pascal Triangle
- Mean, Median, Mode
- Properties of Exponential Numbers and Exponential Equations with rational number solutions

9TH GRADE

- Number Systems
- Square Root problems, equations including infinite square root additions, conjugate
- Simplifying Expressions
- Exponential numbers, Rational Exponents, simplifying exponential expressions
- Area, Perimeter, Volume of 2D and 3D Figures, including circle and sphere
- Cartesian coordinate Problems, symmetry, rotation, reflection, translation, etc.
- Factoring, Difference of Two Squares
- Arithmetic, Geometric Sequences and Series
- Solving Equations in one, two, three variables
- System of Equations, Inequalities
- Word Problems (Distance-Travel, Age Problems, finding average, solving for variable, work, pool filling)
- Functions including piecewise functions and iterative functions
- Polynomials



- Patterns
- Absolute value equations
- Problems involving ratio and proportion, direct, indirect variation
- Graphs of parabolas

10TH GRADE

- Trigonometry involving trigonometric sum formulas, unit circle
- Angles, chords in the circles
- Solving Equations, System of Inequalities, Absolute value inequalities
- Functions including composition, finding the inverse
- Exponential Functions, Rational Exponents
- Coordinate Plane problems including distance, midpoint, slope, area
- Number Systems
- Triangles, Pythagorean Theorem, Special Triangles, Composite Figures
- Factoring Polynomials, Difference of two squares and cubes, special products
- Arithmetic, Geometric Sequences and Series
- Word problems involving percentage, Distance-Travel, Age Problems, finding average, solving for variable, work, pool filling
- Area, Volume of 2D, 2D Figures
- Square Root Equations
- Inequalities involving exponential expressions
- Permutations, Combinations and Probability
- Patterns

11TH GRADE

- Absolute value equations, inequalities and graphs
- Simplifying Expressions with rational exponents
- Square root equations
- Word problems involving percentage, Distance-Travel, Age Problems, finding average, solving for variable, work, pool filling
- Permutations, Combinations and Probability



- Angles, chords in the circles, equation of circle
- Number Systems, Patterns
- Functions including composition, finding the inverse, graph of functions
- Exponential Equations
- Arithmetic, Geometric Sequences and Series
- Statistical Concepts
- Permutations, Combinations and Probability
- Trigonometric Equations, sum and difference formulas, right angle trigonometry
- Factoring Polynomials, Difference of two squares and cubes, special products
- System of Equations
- Area, Volume of 2D, 2D Figures
- Limit, properties of limit
- Logarithm
- Infinite sums

12TH GRADE

- Exponential Equations, Square root equations
- Absolute value equations, inequalities and graphs
- Functions including composition, finding the inverse, graph of functions
- Factoring Polynomials, Difference of two squares and cubes, special products
- System of Equations with rational and exponential expressions
- Word problems involving percentage, Distance-Travel, Age Problems, finding average, solving for variable, work, pool filling
- Area, Volume of 2D, 2D Figures
- Angles, theorems in polygons
- Permutations, Combinations and Probability
- Number systems, binary operations and patterns
- Coordinate Plane problems including distance, midpoint, slope, area
- Limit, properties of limit
- Continuity, discontinuity
- Logarithm



- Integral
- Finite and infinite sums, Arithmetic, Geometric Sequences and Series
- Statistical Concepts
- Derivative