

OLYMPIAD INTERNATIONAL MATH SYLLABUS CLASS 8

Algebraic Expression

- Expressions and equations
- Writing algebraic expressions
- Evaluating expressions
- Simplifying expressions
- The distributive property
- Multi-step equations
- Independent and dependent variables
- Inequalities on a number line
- Expanding expressions
- Factoring expressions
- Solving inequalities

Playing with Numbers

- Factors
- Divisibility rules
- Prime or composite
- Prime factorization
- Greatest common factor
- Least common multiple
- GCF and LCM: word problems
- Sort factors of numerical expressions

Rational Numbers

- Write fractions in lowest terms
- Least common denominator
- Round decimals and mixed numbers
- Write a repeating decimal as a fraction
- Convert between decimals and fractions or mixed numbers

- Absolute value of rational numbers
- Compare rational numbers

- Put rational numbers in order

Squares and Square Roots

- Square roots of perfect squares
- Estimate positive square roots
- Positive and negative square roots
- Estimate positive and negative square roots
- Relationship between squares and square roots
- Solve equations using square roots
- Word Problems

Cubes and Cube Roots

- Cube roots of positive perfect cubes
- Cube roots of positive and negative perfect cubes
- Solve equations using cube roots
- Estimate cube roots
- Relationship between cubes and cube roots
- Word Problems

Exponents and Powers

- Exponents
- Properties of exponents
- Scientific notation
- Adding and subtracting numbers in scientific notation
- Multiplying and dividing numbers in scientific notation
- Word Problems

Comparing Quantities

- Estimate customary and metric measurements
- Compare and convert customary units

- Mixed customary units
- Compare and convert metric units
- Convert between customary and metric systems
- Precision
- Celsius and Fahrenheit temperatures
- Word Problems

Algebraic Expressions and Identities

- Writing variable expressions of one, two and three operations
- Evaluate one-variable and multi variable expressions
- Evaluate rational and radical expressions
- Identify terms and coefficients
- Factors of linear and variable expressions
- Properties of addition and multiplication
- Multiply using the distributive property
- Write equivalent expressions using properties
- Add and subtract like terms
- Add and subtract linear expressions
- Word Problems

Linear Equations in One Variable

- Linear equations
- Equations of horizontal and vertical lines
- Finding slope from two points
- Slopes of horizontal and vertical lines
- Writing an equation from a graph
- Writing an equation from a slope and y-intercept
- Converting from point-slope form to slope-intercept form

Understanding Quadrilaterals

- Identifying and classifying polygons
- Classify triangles
- Identify trapezoids

- Classify quadrilaterals
- Find missing angles in triangles
- Find missing angles in triangles using ratios
- Triangle Angle-Sum Theorem
- Find missing angles in quadrilaterals
- Word Problems

Mensuration

- Area and perimeter
- Area and circumference of circles
- Circles: word problems
- Area and perimeter of semicircles and quarter circles
- Area between two shapes
- Volume of cubes, prisms, and pyramids
- Surface area of cubes, prisms, and pyramids
- Volume of cylinders and cones
- Surface area of cylinders and cones
- Volume of spheres
- Surface area of spheres

Data Handling and graphs

- Interpret stem-and-leaf plots
- Interpret bar graphs and histograms
- Interpret frequency charts
- Interpret circle graphs
- Interpret line graphs
- Interpret scatter plots
- Identification of trends with scatter plots
- Study the categorized data and solve the questions
- Find the answers of the questions using information given in pictographs, picture graphs

Direct and Inverse Variations

- Write and solve equations for proportional relationships
- Find the constant of variation
- Identify direct variation
- Write direct variation equations
- Write and solve direct variation equations
- Word Problems

Triangle and Similarity

- Identify similar triangles
- Angle-angle criterion for similar triangles
- Side lengths and angle measures of similar triangles
- Side lengths and angle measures of similar figures
- Find missing side lengths in proportional triangles
- Word Problems

Logical Reasoning

- Number and figure patterns
- Coding and decoding
- Blood Relations
- Alphabet test
- Direction sense test
- Ranking test: find the position of a term or a object from the given position
- Mirror images or Water images
- Sitting arrangements
- Embedded figures