

TOPICS TO STUDY FOR MATHCON

- ❖ The following topics provide a framework for MathCON.
- ❖ These topics are not curriculum.
- ❖ It is recommended that students review previous grade topics.
- ❖ Any grade level's topics are related to the previous grade level and promote continuous improvement over the years.
- ❖ A MathCON test consists of multiple-choice questions covering the following topics:
Algebra, Geometry, Number Theory, and Combinatorics
- ❖ There could be questions from different topics that aren't listed below at MathCON.

TOPICS TO STUDY FOR MA+H+CON

10TH GRADE MATH

- ❖ Functions and Continuity
- ❖ Linearity, Intercepts, and Symmetry, Extrema and End Behavior
- ❖ Sketching Graphs and Comparing Functions, Transformations of Functions
- ❖ Special Functions
- ❖ Absolute Value Equations and Inequalities
- ❖ Systems of Equations and Inequalities
- ❖ Linear Programming
- ❖ Complex Numbers
- ❖ Polynomial Functions and Graphs
- ❖ Operations with Polynomials
- ❖ The Remainder and Factor Theorems
- ❖ Operations on Functions, Inverse Relations and Functions
- ❖ n th Roots and Rational Exponents
- ❖ Radical Functions, Equations, and Graphs
- ❖ Exponential and Logarithmic Functions
- ❖ Common Logarithms, Natural Logarithms
- ❖ Rational Functions and Graphs
- ❖ Operations with Rational Expressions
- ❖ Geometric Sequences and Series
- ❖ Variation
- ❖ Random Sampling, Analyzing Population Data, Normal Distributions, Confidence Interval
- ❖ Trigonometric Functions, and Graphing Trigonometric Functions
- ❖ Inverse Trigonometric Functions
- ❖ Trigonometric Identities and Equations
- ❖ Points, Lines, Line Segments and Planes
- ❖ Angles and triangles

TOPICS TO STUDY FOR MATHCON

- ❖ Similarity and Congruence
- ❖ Relationships in Triangles
- ❖ Two-Dimensional Figures, Quadrilaterals, Perimeters and Areas of Polygons
- ❖ Circles
- ❖ Compound figures
- ❖ Transformation and symmetry (Rotations, reflections, translations, tessellation, dilation, and symmetry)
- ❖ Three dimensional figures (areas, volumes, cross sections, nets)
- ❖ Density
- ❖ Coordinate plane
- ❖ Angles, Parallel Lines and Transversals, Perpendicular Lines
- ❖ Right Triangles and Trigonometry
- ❖ Permutation, Combination and Probability