



Topics Covered in the Advanced Math Placement Test

1. Arithmetic:

- Fractions, Ratios, Proportions, Percentages, Inequalities, Absolute values, Square roots, etc.

2. Algebra:

- Cartesian coordinates
- Equation of a line
- Polynomials (Addition, multiplication, etc.)
- Solving quadratic equations
- Solving system of two equations two unknowns
- Factorization, Simplification, etc.

3. Geometry:

- Perimeter and area of basic shapes (square, rectangle, triangle, etc.)
- 2D geometry (lines, triangles, angle relationships between triangles, etc.)

4. Basic Calculus Functions:

- Solving basic transcendental equations (basic equations or in-equations containing \ln and exponential function, etc.)

5. Trigonometry:

- Sign axis
- Quadrants of the circle
- Relationship between angles,

- Identities (for sin, cos, tan...),
- Minimum relations (for sin, cos, tan, etc.)

6. Calculus:

- Definite and Indefinite Integrals (integral by parts, changing of variables, etc.)
- Differentiations (first order: sine/cosine/log/exponential, $1/x$, tan inverse, etc.)
- Limits
- Domain of definitions
- Continuity
- Symmetries

7. Complex Numbers:

- Basics: additions, multiplication, argument, magnitude, etc.

8. Analytic Geometry:

- Equation of a circle, ellipse, hyperbola...
- 3D geometry (equation of a plane, normal vector to a plane, etc.)