Math Department

Year of 2026-2027

Lessons Required for the Math Entrance Exam: (Grade 8ADP To 9ADP)

*Calculator is needed.

Algebra 1:

Note: Word problems are required in all chapters.

1) Expressions & Equations:

Students should be able to:

- Write verbal expressions for algebraic expressions & vice versa.
- Evaluate numerical expressions by using the order of operations.
- Use the distributive property to evaluate/simplify expressions.
- Solve equations with one variable on both sides.
- Solve one-step/ multi-step equations.

2) Linear Functions:

Students should be able to:

- Find intercepts & zeroes of a function from its graph.

3) Exponents:

Students should be able to:

- Multiply monomials using the properties of exponents.
- Simplify expressions using the multiplication properties of exponents.
- Divide monomials using the properties of exponents.
- Simplify expressions containing negative & zero exponents.
- Evaluate & rewrite expressions involving rational exponents.
- Express numbers in scientific notation.

4) Quadratic Expressions:

Students should be able to:

- Write polynomials in standard form.
- Add/ Subtract polynomials.
- Multiply a polynomial by a monomial.
- Multiply binomials using FOIL/ Distributive Property.
- Find special products (square of a sum, square of a difference and product of a sum and a difference).

Geometry:

1) Tools of geometry:

Students should be able to:

- Measure & classify angles.
- Identify & use special pairs of angles (linear, vertical, adjacent, complementary and supplementary pairs).
- Identify perpendicular lines.

2) Congruent Triangles:

Students should be able to:

- Identify & classify triangles by angle/side measure.
- Apply the Triangle Angle-Sum Theorem.
- Use the SSS-SAS-ASA-AAS to test for triangle congruence.

3) Parallel & Perpendicular Lines:

Students should be able to:

- Name angle pairs formed by parallel lines & transversals (alternate interior angles/ corresponding angles)
- Use theorems to determine relationships between specific pairs of angles.
- Use algebra to find angle measurements.

4) Relationships in Triangles:

Students should be able to:

- Construct angle bisector, perpendicular bisector, median and altitude in a triangle.
- Apply the Perpendicular Bisector Theorem as well as its converse.
- Apply the properties of incenter, circumcenter, centroid and orthocenter.

5) Quadrilaterals:

Students should be able to:

- Find & use the sum of the measures of the interior angles of quadrilaterals.
- Recognize & Apply properties of the sides/angles/diagonals of parallelograms.
- Prove that a quadrilateral is a parallelogram.