Lessons Required for the Math Entrance Exam: (Grade 9ADP to 10ADP)

Calculator is needed.

ALGEBRA:

Note: Word problems are required in all chapters.

CH 3: LINEAR FUNCTIONS

Graph a linear function.

Find the zeros of a linear function by graphing.

Calculate the rate of change and the slope of a linear function.

CH4: EQUATIONS OF LINEAR FUNCTIONS

Write an equation in slope-intercept, standard and point slope forms.

Prove 2 lines parallel/perpendicular given their equations.

CH 5: LINEAR INEQUALITIES

Solve inequalities by addition and subtraction.

Solve inequalities by multiplication and division.

Solve multi-step inequalities.

Solve compound inequalities.

CH6: Systems of Linear Equations and Inequalities

Graph a system of equations and find its solution graphically.

Solve a system of equations using substitution and elimination methods.

CH8: Quadratic Expressions and Equations

Add and Subtract Polynomials.

Multiply Polynomials.

Multiply special products: $(a-b)^2, (a+b)^2 \ and \ (a-b)(a+b)$.

Factorize a quadratic expression using distributive property.

Factorize a quadratic expression using special products.

Factorize a quadratic trinomial of the form $ax^2 + bx + c$ where a is a non-zero real number in the cases where a=1 and a$\neq$ 1.

Solve a quadratic equation.

CH9: Quadratic Functions and Equations

Graph a quadratic function.

Solve a quadratic equation by graphing.

Describe and graph transformations: translations, dilations and reflections.

GEOMETRY

Ch5: Relations in a triangle

Construct angle bisector, perpendicular bisector, median and altitude in a triangle.
Apply The Angle Bisector Theorem and the Perpendicular Bisector Theorem as well as their converses.
Apply the properties of incenter, circumcenter, centroid and orthocenter.
Apply the exterior angle inequality and angle-side relationship in a triangle.

Ch6: Quadrilaterals

Calculate the interior and exterior angles of any polygon.
Use the properties of a parallelogram, rectangle, rhombus, square, kite and trapezoid to find missing angles and sides.

Ch7: Proportions and Similarity

Find ratios.

Solve proportions.

Find missing sides using ratios in similar polygons and similar triangles.
Find the proportional and congruent parts of parallel lines.