



## Loyola High School Secondary 2 Honors Mathematics

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**Textbook:** Loyola Math Unit Booklets with Teacher handouts and worksheets  
Online resource (homework and explanations): IXL (ca.ixl.com)  
A subscription to IXL is provided by Loyola. Students must use their **Loyola IXL** account.

**Website:** Class notes and relevant links will be available on <http://moodle.loyola.ca>  
Students must also subscribe to the class Google Classroom feed using their Loyola e-mail account.

**Supplies:** Pencils, eraser, compass, ruler  
Duo-tangs, in which students should keep handouts, returned quizzes and tests, with:  
- loose-leaf sheets (20 pages to start),  
- graph paper (10 pages to start)

Calculators **will not be permitted** during some units but **will be required** in other units, and students are responsible for purchasing a TI-30X calculator from the school store. (iPads may not be used as calculators in class.)

**Competencies and Evaluation** (This is a guideline; final weightings may vary):

**Communication & Reasoning 70%** (Reasoning Tests - 60%, Quizzes - 20%, Homework - 20%);  
**Situational problems: 30%.**

**In Term 2, a Cumulative Reasoning Test given prior to the Christmas exam period counts for 20% of the term, and a Situational Problem during the Christmas exam period counts for 20% of the term.**

**In Term 3, June exams count for 50% of the term mark and cover the entire year's work.**

The final course mark is calculated as: Term 1 – 20% Term 2 – 20% Term 3 – 60%.

**Homework:** Homework is usually assigned daily. It will be checked regularly and graded occasionally. Review and practice are essential to understanding and retaining the information taught. Failure to complete homework will result in a loss of grades and/or disciplinary action.

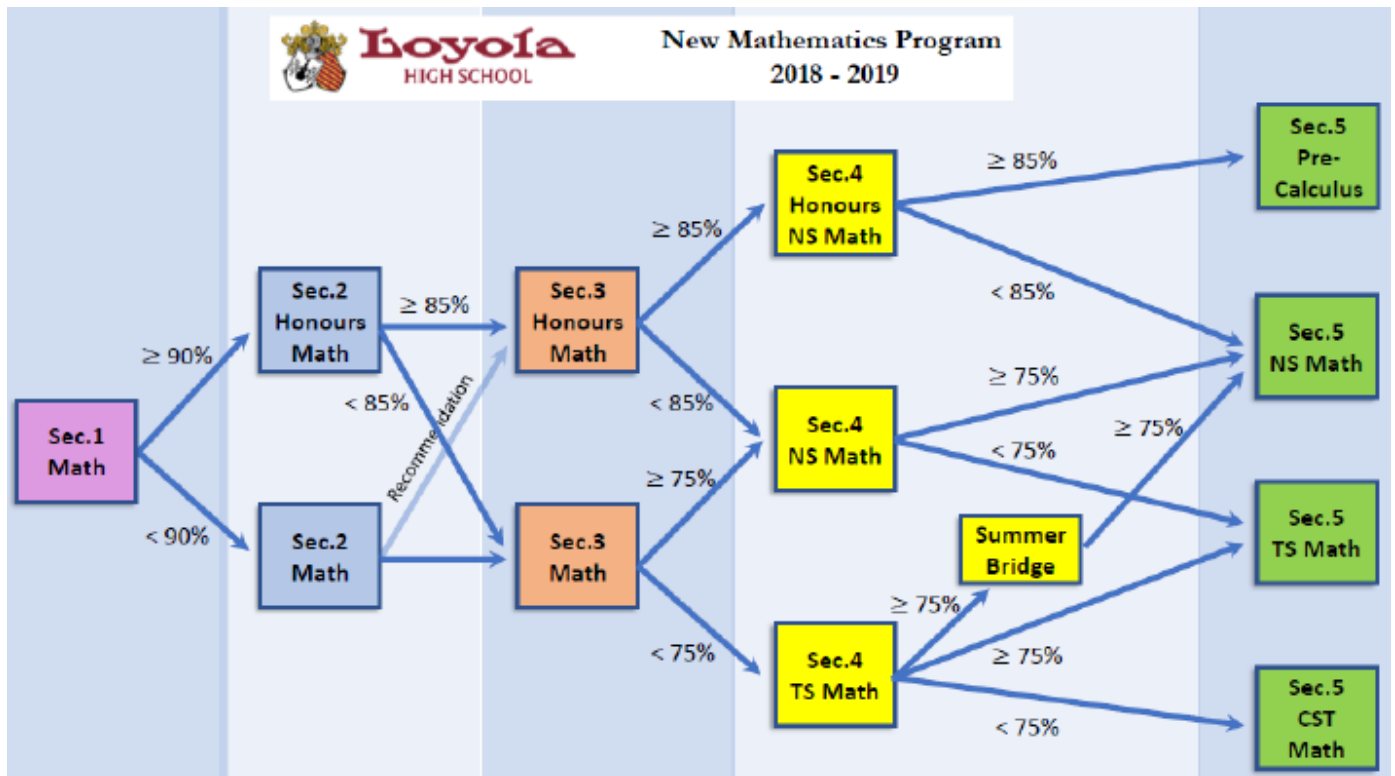
**Quizzes:** Quizzes may be given **without prior warning** to evaluate day-to-day understanding.

**Tests:** Tests will evaluate the course content and competencies and there will usually be 3-5 tests per term. A major consideration in this course is the students' ability to solve **Situational Problems**.

**Tutorials:** The math department offers extra help on a regular schedule. In addition, individual teachers offer extra help sessions according to their posted schedules. Be sure to get help right away when difficulty arises.

**General:** Students are expected to further develop their work ethic, study habits and time management skills as they continue their progress to becoming independent and active learners. Do not lose this IMPORTANT document. It can serve as a basis for your study guide for the entire year.

**Advancement:** Secondary 2 honors Math is an advanced Math course preparing students to continue into secondary 3 honors Math where students would be learning concepts at the secondary 4 level. As such, a final minimum course grade of 85% is required to pursue NS Math (Science profile) in Sec. 3; otherwise students will be placed into a regular secondary 3 Math class next year. Students are expected to further develop their work ethic, study habits and time management skills as they continue their progress in becoming independent and active learners.



## Units Covered

### Algebraic Calculations

Definitions: Constant, variable, coefficient, like terms  
Operations with variables (+, −, ×, ÷)  
Multiplying monomials/Distributive property  
Properties of exponents and radicals  
Simplifying algebraic expressions with fractions and exponents  
Generalizing situations using algebra

### Pythagorean Theorem

Solving for the third length of a right-angled triangle  
Pythagorean triples  
Special Right triangles

### Various Modes of Representation

Cartesian plane: - axes, origin, quadrants, locating and placing points on the Cartesian plane  
Graphing: - making and interpreting graphs  
Independent and dependent variables  
Producing tables of values and finding the related rule (linear situations)  
Rate of change, Initial value, equation of a line in standard form  $y = ax + b$ , x & y intercepts  
Definition of functions

- Modes of representation (tables, Cartesian graphs, rule, description)
- Characteristics and Properties of functions  
(i.e. domain, range, max, min, increasing, decreasing, +, - )
- Graphing of different types of functions i.e. zero, rational, partial, direct and squared)

### Algebraic Equations and Factoring

Solving algebraic equations by producing equivalent equations  
Solving word problems using equations  
Greatest Common Factor  
Simple trinomials  
Grouping  
Complex Trinomials  
Difference of squares  
Solving equations and application word problems  
Solving quadratic equations (by factoring)

### Circles and Polygons

Definitions and Properties: Radius, diameter, circumference, chord, arc.  
Calculating circumference, radius, arc length and sector area  
Definitions: convex, concave, regular, irregular, names of polygons  
Sum of interior angles (for all types of polygons), calculating missing angles  
Perimeter and area of polygons

### Solids

Definitions: Prism, Cylinder, Pyramid, Cone, Sphere  
Nets of solids and surface area  
Volume of solids and of decomposable solids