

Introduction to Applied and Pre-Calculus Mathematics

Vincent Massey Collegiate
2012

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Resource Book (bring to all classes): Cost of replacing a lost text is \$10.00

Do not write in Books!

Welcome to MIAP mathematics!

MIAP is a fast paced, intense course where students must be prepared to put effort into daily homework and assignments in order to keep up with the work. **Students will have homework and/or review every night.**

Note: It is recommended that students entering MIAP20S have achieved a grade of 70% in grade 9 mathematics.

You will be expected to record notes & examples, participate in discussions and ask questions, if necessary.

If you don't understand something, please ask! Sharing your questions or comments during class helps me teach the class and helps you and your classmates learn.

Calculators: Students must have a graphing calculator. The Texas Instruments TI-83 or higher is recommended.

General Learning Outcomes

The three major areas of instruction will cover:

- Measurement
- Algebra and Number
- Relations and Functions

Specific Outcomes are listed at the end of this document.

The essence of
mathematics is
not to make simple
things
complicated, but to
make complicated
things
simple. ~S.
Gudder

We are what we
repeatedly do. Excellence,
therefore,
is not an act but a habit.
~ Aristotle

Assessment:

Although each teacher’s evaluation will vary, we believe in the following assessment practices:

- Your final mark will reflect your attainment of the curricular outcomes of this course.
- Evidence of your attainment of outcomes may come from a variety of assessment tools such as: **Tests, quizzes, exams, assignments, homework, mental math, portfolios, projects, etc.**
- We believe that assignments are to be handed in on time as outcomes tend to build on previous understanding. Although teachers will handle incomplete assignments differently, at some point incomplete assignments are evidence of outcomes not attained.

Final Mark: Term Mark	70%	Final Exam	30%
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Extra Help

If you don’t understand the lesson, **ask questions in class** or see me for immediate clarification. Students **must complete/attempt their homework regularly** and participate in class, by actively listening and asking questions. Extra help will be available by appointment.

Factors That Affect Your Achievement

- 1) Come prepared
 - Materials to be brought to each class include; 3-ring binder (with lined paper), scientific calculator, exercise books, ruler, eraser and pencil (**no pens**).
- 2) Come on time, sit down and get ready to work immediately
 - Class will begin with the bell and end when the teacher dismisses the class. You are late when the classroom door is closed. Please wait outside until the teacher comes to speak with you.
- 3) Be respectful
- 4) Students **MUST** complete assignments
 - If you do not try, a teacher cannot help you.

Pure mathematics is, in its way, the poetry of
logical ideas. ~Albert Einstein

5) Attendance

- To succeed in any course and attain the outcomes, it is important to attend class **every day**.
- If you are absent, it is **your responsibility** to catch up on missed work.
 - 1st Check the board for homework
 - 2nd Ask a classmate for the notes
 - 3rd Check with the teacher
- It is also your responsibility to let the teacher know the reason for your absence in the form of a note or phone call to the school.
- If possible, it is always better to **plan ahead** if you know you will be absent!
- If you will be away on a test (or quiz) day, the teacher must be notified **before** the test is written. The test will be written on your own time on the following day. If you are unexpectedly sick, a medical note is required.
- **Co-Curricular/Extra-Curricular Activities:** School activities and clubs such as field trips, sports, music, drama, etc. are an important part of a students' overall educational experience. However, students and parents must realize that students are responsible for missed work and material which is given when students are taking part in these activities. In some cases, students' may be taking part in too many activities. They must realize that this may affect their grades.

Vincent Massey Attendance Policy

After absences, you will automatically receive a call home. After 5 absences, you will receive a letter home. After 9 absences, you are removed from the class. Also, 3 lates constitute 1 absence.

Attentiveness in Class + Consistent Effort + Homework = Success

Contact:

- If at any time during the year you have any questions or concerns, I can be contacted at Vincent Massey, 453-8023 or by email: ayorke@pembinatrails.ca.

*We must use time wisely and
forever realize that the time is
always ripe to do right
~Nelson Mandela*

Grade 10 – Introduction to Applied and Pre-calculus – Specific Outcomes

- 10I.M.1. Solve problems that involve linear measurement, using
- SI and imperial units of measure
 - estimation strategies
 - measurement strategies
- 10I.M.2. Apply proportional reasoning to problems that involve conversions within and between SI and imperial units of measure.
- 10I.M.3. Solve problems, using SI and imperial units, that involve the surface area and volume of 3-D objects, including
- right cones
 - right cylinders
 - right prisms
 - right pyramids
 - spheres
- 10I.M.4. Develop and apply the primary trigonometric ratios (sine, cosine, tangent) to solve problems that involve right triangles.
- 10I.A.1. Demonstrate an understanding of factors of whole numbers by determining
- prime factors
 - greatest common factor
 - least common multiple
 - square root
 - cube root
- 10I.A.2. Demonstrate an understanding of irrational numbers by
- representing, identifying, and simplifying irrational numbers
 - ordering irrational numbers
- 10I.A.3. Demonstrate an understanding of powers with integral and rational exponents.
- 10I.A.4. Demonstrate an understanding of the multiplication of polynomial expressions (limited to monomials, binomials, and trinomials), concretely, pictorially, and symbolically.
- 10I.A.5. Demonstrate an understanding of common factors and trinomial factoring, concretely, pictorially, and symbolically.
- 10I.R.1. Interpret and explain the relationships among data, graphs and contexts.
- 10I.R.2. Demonstrate an understanding of relations and functions.

- 10I.R.3. Demonstrate an understanding of slope with respect to rise and run
- line segments and lines
 - rate of change
 - parallel lines
 - perpendicular lines
- 10I.R.4. Describe and represent linear relations, using
- words
 - ordered pairs
 - tables of values
 - graphs
 - equations
- 10I.R.5. Determine the characteristics of the graphs of linear relations, including the
- intercepts
 - slope
 - domain
 - range
- 10I.R.6. Relate linear relations expressed in
- slope–intercept form ($y = mx + b$)
 - general form ($ax + By + C = 0$)
 - slope–point form ($y - y_1 = m(x - x_1)$)
- to their graphs.
- 10I.R.7. Determine the equation of a linear relation, given
- a graph
 - a point and the slope
 - two points
 - a point and the equation of a parallel or perpendicular line
 - a scatterplot
- 10I.R.8. Represent a linear function, using function notation.
- 10I.R.9. Solve problems that involve systems of linear equations in two variables, graphically and algebraically.
- 10I.R.10. Solve problems that involve the distance between two points and the midpoint of a line segment.