



MATHEMATICS 20-1 COURSE OUTLINE



Teacher: Mrs. E. Gebhardt

Email: elizabethgebhardt@prrd8.ca

School Phone: [403-528-1996](tel:403-528-1996) ext 2022

Mathematics 20-1 is an advanced and academically demanding math course designed for students with an interest and aptitude in mathematics. It is a pre-calculus course with the expectation that students taking this course will advance to studies after high school that require calculus. The focus will be on the theoretical development of mathematical topics. Mathematical experiences will emphasize a more dynamic view of mathematics as a precise language used to reason, interpret and explore. Students will continue to encounter situations that:

- π develop critical and creative thinking skills
- π require investigation, interpretation, reasoning, and analysis of mathematics in order to make a decision
- π enable the acquisition of mathematical knowledge beyond the school realm
- π build confidence in their mathematical abilities and problem solving skills
- π enhance communication of mathematical ideas more effectively
- π link mathematics to other subject disciplines

Due to the advanced theoretical/problem solving nature and the pace of this course, it is strongly recommended that a grade of 70% in Math 10C be the minimum grade to enter the Math 20-1 level.

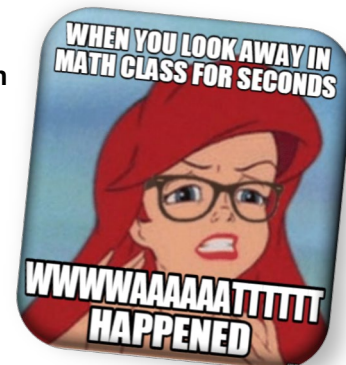
COURSE CONTENT:

1. **Algebra & Number**
 - absolute value, radical operations, radical expressions, radical equations, simplifying rational expressions, operations on rational expressions, rational equations
2. **Trigonometry**
 - angles in standard position, trigonometric ratios, sine law, cosine law
3. **Relations & Functions**
 - factoring, absolute value functions, piecewise functions, quadratic functions, quadratic equations, systems of equations, linear and quadratic inequalities, arithmetic sequences and series, geometric sequences and series, reciprocal functions

Student Materials:

For Math 20-1, the following is required:

- Yourself – You need to be in class every day ready to **think, share, and learn**
- A positive attitude – **I can, I will, I am able to!**
- Binder & Loose-Leaf Paper or Notebook (50-100 pages)
- Graphing Calculator (**recommend TI-83 Plus or TI-84 Plus**)
- Pencils, Pens, Erasers, & Ruler
- Textbook – Pre-Calculus 11 (McGraw-Hill)



Mathematics 20-1 **Program Timeline (Tentative)**

| | |
|---|--------------|
| UNIT 1: Quadratic Functions | (10 classes) |
| UNIT 2: Quadratic Equations | (8 classes) |
| UNIT 3: Systems of Equations & Inequalities | (9 classes) |

**** CUMULATIVE EXAM I & Review **** (2 – 3 classes)

| | |
|---|--------------|
| UNIT 4: Radical Expressions/Radical Equations | (10 classes) |
| UNIT 5: Rational Expressions & Equations | (10 classes) |
| UNIT 6: Trigonometry | (9 classes) |

**** CUMULATIVE EXAM II & Review **** (3 – 4 classes)

| | |
|---|-------------|
| UNIT 7: Reciprocal & Absolute Value Functions | (8 classes) |
| UNIT 8: Sequences & Series | (6 classes) |

FINAL ASSESSMENT/FINAL REVIEWS (4 classes)
(reviewing and re-visiting all outcomes)

EVALUATION:

The following categories will be used to evaluate student progress and achievement throughout the course:

TERM MARK:

| | |
|---|-----|
| Daily Work | 0% |
| Unit Exams | 25% |
| Summative Assignments (Projects/Quizzes/Digital Portfolio) | 20% |
| Cumulative Exams (Cumulative I Exam – 10%, Cumulative II Exam – 15%) | 25% |
| Final Exam | 30% |

Summative assignments may include projects, quizzes, and/or digital portfolios.

Daily work may consist of daily homework/practice, problem solving, quick questions, and other observable skills.

***Students are expected to take responsibility for their progress and achievement.
 If there is a concern or you feel an error has been made, please discuss the matter with me.***

Work must be shown to earn full marks on questions. A correct answer without showing supporting work will only be awarded partial marks. If the answers were already provided to students (ie. answer key), no marks will be awarded. On the other hand, a wrong answer that does include some correct work will also result in partial marks. It pays to show your work. Demonstrating the correct process is more important than getting the right answer.

It is important that you understand and are clear on the basis for marks that are given.

**My goal is for you to experience success in math,
and I am here to support you every step of the way.**

To be successful, you must also **want it for yourself** and **believe** you can reach your goals.

These four strategies will help you get there:

- Be an active listener and stay engaged during class
- Use class time to complete your work
- Ask questions when you don't understand a concept
- Keep up with the assigned work each day.

Note: I will be available to help students outside of class during TAG, Lunch, or before/after school, but priority will be given to students who consistently use their class time well and are still needing extra support.

**AT THE END OF THE DAY
WHO YOU ARE IS TOTALLY
& COMPLETELY UP TO YOU**

CLASSROOM EXPECTATIONS

- Remember the **3 R's – Respect, Responsibility, & Right Attitude.**
- Be **on time** and **in class** at **all times.**
- **Be prepared for class.** Be ready to work BEFORE the bell rings and have all your supplies ready (binder/notebook, pencil, eraser, calculator, water bottle, healthy snacks)
- **Cell Phones & Other Electronic Devices** must be put away during class time unless instructed otherwise. During all tests & quizzes, cell phones & smart watches must be put in one of the side pockets.
- Healthy food and drinks are permitted in the classroom.
- Students are not permitted to leave class without teacher permission.

DEPARTMENT POLICIES

EXAMS

It is **YOUR** responsibility to prepare for all your tests/quizzes.

- If a student is absent for any quizzes/exams, they will be expected to make arrangements with the teacher to write the exam/quiz in a timely manner.
- When students are absent the day of a test, they will be given a different version of the test AND may void their privilege to rewrite that particular test.
- Requests to not write the test on the planned day will not be honoured.
- Tests need to be completed in one sitting and students will be permitted double time.
- Teachers will not help with answering questions while a student is writing a test it is important to study and be prepared for the test on the day of the test.

REWRITE POLICY

If a student feels that their mark is not reflective of their ability, they will have the opportunity to re-write any unit test at the end of each semester.

However, the following conditions must be met:

- The test will be written outside of class time.
- The re-write mark will become the new mark whether it is higher or lower than the original mark.
- There will be NO rewrites on open book quizzes, cumulative exams, or final exam.

ACADEMIC DISHONESTY (as taken from Student Handbook)

Examples of academic dishonesty include, but are not limited to:

- Taking someone else's work or ideas and passing them off as one's own including:
 - copying from another student
 - copying/downloading from the internet
 - taking and/or sharing pictures of assessments
 - use of any Artificial Intelligence (A.I.) programs like, but not exclusive to, ChatGPT or Photomath
 - anything copied either in whole, in part (even if just brief parts like the main idea or one example or sentence), or in concept. This also includes the rewording of sentences or ideas to make it look like your own work
- Those who allow their work to be copied/share their work are aiding in the process and therefore **JUST AS RESPONSIBLE AND LIABLE** to be held to the same consequences as the student who handed in the plagiarized work.

Depending on the severity of the violation, the offending student(s) may suffer any or all of these consequences in consultation with the teacher and/or administrator's discretion.

Consequences include, but are not limited to:

- Redoing the assignment
- Parent contact
- A mark of zero on work submitted
- Detentions
- Referral to the administrator
- Phone must be handed in to the office - see cell phone procedure

CLASSROOM PROCEDURES FAQ's

How will I know about upcoming tests or lessons?

All deadlines will be discussed in class and posted on the side whiteboard. Check the Tentative Student Calendar on Google Classroom. The calendar will be updated weekly and often by unit so you can plan ahead for upcoming tests and quizzes.

What if I am absent?

When possible, let me know ahead of time that you are going to be absent. It is the student's responsibility to catch up on any missed work. If you are absent for a quiz/exam, you will write it the day following your absence during TAG, Lunch, or after school. Please speak with me to arrange a time.

What if I was absent and there was something handed out that I missed?

Each class has a designated shelf near the windows. If you were absent and missed a handout, you can find your copy there.

What can I do if I am done my work?

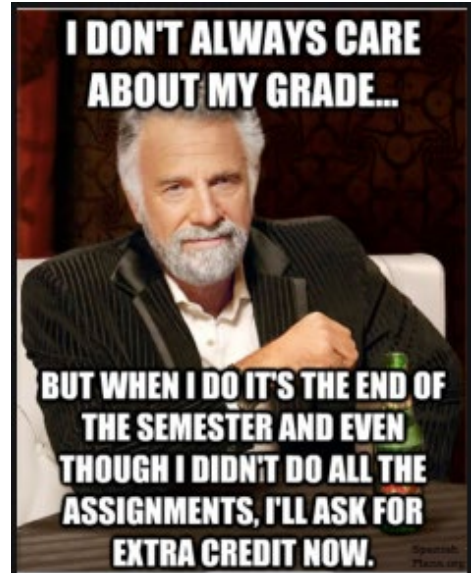
Class is over when the bell rings and I have dismissed you. In math, there is always more work to do. You can make flashcards or study notes, review for the next quiz/test or do extra practice questions. Please do not pack up early or leave class until the bell rings. Use your class time wisely... more time spent working during class = more concepts learned = less/no homework in the evenings.

What if I need extra help?

I expect you to use your class time wisely – be an active listener, ask questions, take notes, and work on assigned questions during class time. With 75-minute classes, that is a lot of time to work on math. The best time to get help is daily, as you are working on questions in class. Do not wait until the last minute to ask for help!

For example, coming in the day before or day of a test and needing help on the entire unit is setting yourself up for failure. TAG is a perfect opportunity to get the help you need. If TAG isn't enough time, talk to me about getting help during lunch or before/after school as well.

For students seeking out additional private tutoring supports, I have a list of people who have expressed interest in tutoring, but it is the student's responsibility to make contact and determine if the tutor is a good fit.



What if I arrive late?

A student who is not in the classroom when the second bell rings is considered late. Please do not disrupt the class if you arrive late. Enter the room quickly and quietly, and please let me know that you have arrived when a convenient break in the lesson occurs.

Too many lates = detention at lunch... & request for a late contract...

What if I behave inappropriately?

Inappropriate behaviour will not be tolerated. Please refer to the student handbook.

Time Wasted = Time Owed

Detentions will be served at lunch time for inappropriate behaviour. If you skip your detention, further consequences may be requested through the office.

May I use the washroom during class time?

Please try to go before class, but if you must use the washroom during class time, please ask at an appropriate time, such as after the lesson and/or during work time. You are not to go elsewhere (ie. other classrooms, hanging out in the hallway, the office, etc...). There is only one student allowed out of the classroom at a time and your cell phone must be left in the classroom. If you are found somewhere else during your washroom break, you will lose the privilege of using the washroom during class.

My final piece of advice for a successful semester...





Links & Resources

The following is a list of QR Codes and Links you may find useful for this semester.



Eagle Butte Website
<https://eaglebutte.myprps.com/>



AB Education
(Diploma Exam Information)
<https://bit.ly/31Jdes5>



The Grand Math
Connection
<https://mathpqjq.com/>



ExamBank – Math 20-1
<http://alberta.exambank.com>
Login: pr
Password: exam



Quest A+ (Practice Tests)
<https://questaplus.alberta.ca/>



Khan Academy (free tutorial videos)
<https://www.khanacademy.org/>



Any student with a Shortgrass Library Card has FREE ACCESS to Solaro, which is a study help and exam preparation tool for students in grades 3 to 12. Thousands of practice test questions are available and students receive instant feedback in the form of step-by-step solutions for each question. A full set of lessons are also available which cover core concepts and feature an integrated study notes and flash card system. All content in Solaro is based on the Alberta curriculum.