PEACE RIVER SCHOOL DIVISION

VIRTUAL EDUCATION PROGRAM

*"Learning Together - Success for All"*

**Mathematic 30-2**

Course Outline

2021-2022 | Semester 1

**Teacher: Ms. Kathryn Brooks**

## I. Course Overview

The Mathematics 30–2 course emphasizes the mathematical understandings and critical thinking skills for daily life, direct entry into the workforce, and post-secondary studies in programs that do not require the study of calculus. In Mathematics 30–2, algebraic, numerical, and graphical methods are used to solve problems. Technology, such as a graphing calculator, is also used to enable students to explore and create patterns, examine relationships, test conjectures, model, and solve problems.

Students are expected to communicate solutions to problems clearly and effectively when solving both routine and non-routine problems. Students are also expected to apply mathematical concepts and procedures to meaningful life problems. It is important to realize that it is acceptable for students to solve problems in different ways and that solutions may vary depending upon how the problem is understood.Students who believe they can learn, take risks and persevere in problem solving will be successful mathematics students.

## II. Key Message/Expectations

Virtual Education is an exciting opportunity for PRSD students. Regular attendance and productive engagement in course material is an expectation and requirement for success in this course, both during synchronous and asynchronous instruction and learning activities.

Course content is organized into both teacher-directed and student-directed learning activities. Successful students will employ effective time management strategies to complete all activities on time.

Students are expected to demonstrate appropriate online and in-person behaviour in accordance with PRSD Board Policies and Administrative Procedures. By default, teachers will require students to have their cameras on during class time and require students to respond to questions or participate in discussions with their microphone. There will be times when teachers may allow students to turn their cameras off.

## III. Scope and Sequence

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| **UNIT 1: Set Theory** | |
| Week 1: Aug 30 | • Introductions<br>• Types of Sets and Set Notation |
| Week 2: Sept 7<br>*Sept 6 - Labour day* | • Exploring Relationships Between Sets<br>• Intersections and Unions<br>• Application of Set Theory |
| Week 3: Sept 13 | • Logic Puzzels<br>• Review<br>• Unit 1 Test: Sept 17 ***REWRITE: Oct 1*** |
| **UNIT 2: Counting Methods** | |
| Week 4: Sept 21<br>*Sept 20 - PD Day* | • Fundamental Counting Principle<br>• Linear Permutations |
| Week 5: Sept 27 | • Combinations<br>• Algebra of Factorial Notation |
| Week 6: Oct 4<br>*Oct 8 – No School* | • Review<br>• Unit 2 Test: Oct 7 **REWRITE: Oct 21** |
| **UNIT 3: Probability** | |
| Week 7: Oct 12<br>*Oct 11 - Thanksgiving* | • Odds and Probability<br>• Mutually Exclusive Events |
| *Week 8: Oct 18* | • Independent and Dependent Events<br>• Review |
| *Week 9: Oct 26*<br>*Oct 25: PD Day* | • Unit 3 Test: Oct 27 **REWRITE: Oct ** |
| **UNIT 4: Rational Expressions** | |
| *Oct 28* | • Equivalent Rational Expressions<br>• Simplifying Rational Expressions |
| *Week 10: Nov 1* | • Operations on Rational Expressions |
| *Week 11: Nov 8*<br>*Nov 11 – Remembrance Day*<br>*Nov 12 – No School* | • Rational Equations |

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|---|---|
| *Week 12: Nov 15* | • Review<br>• Unit 4 Test: Nov 19 **REWRITE: Dec 3** |
| ***UNIT 5: Polynomial Functions*** | |
| *Week 13: Nov 23*<br>*Nov 22 – PD Day* | • Describe and Analyze Polynomial Functions<br>• Graph Polynomial Functions |
| *Week 14: Nov 29* | • Review<br>• Unit 5 Test: Dec 3 **REWRITE: Dec 17** |
| ***UNIT 6: Exponents and Logarithms*** | |
| *Week 15: Dec 6* | • Describe and Analyze Exponential Functions<br>• Graph Exponential Functions |
| *Week 16: Dec 13* | • Describe and Analyze Logarithmic Functions<br>• Graph Logarithmic Functions |
| *Week 17: Jan 4* | • Review<br>• Unit 6 Test: Jan 7 **REWRITE: Jan 19** |
| ***UNIT 7: Trigonometry*** | |
| *Jan 6* | • Describe and Analyze Sinusoidal Functions<br>• Graph Sinusoidal Functions |
| *Week 18: Jan 10* | • Review<br>• Unit 7 Test: Jan 14 **REWRITE: Jan 21** |
| *Weeks Jan 17&24: Final Research Project/Review* | |
| ***DIPLOMA EXAM: Thursday, Jan 20, 2022 @ 9:00 am*** | |

## IV. Instruction and Assessment

A variety of instructional and formative and summative assessment strategies will be used throughout this course, including through the use of both technology and traditional pencil-and-paper. Summative assessments will be used to determine course grades which can be accessed through PowerSchool.

Unit Breakdown:

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| Assignments | 50% |
| Quizzes | 20% |
| Tests | 30% |

The course will be evaluated over the term as follows:

| Total Unit Weight | Gradebook Category | Gradebook Weighting |
|---|---|---|
| **UNIT 1: Set Theory 8%** | Unit 1 Assignments | 4% |
| | Unit 1 Quizzes | 1.6% |
| | Unit 1 Test | 2.4% |
| **UNIT 2: Counting Methods 10%** | Unit 2 Assignments | 5% |
| | Unit 2 Quizzes | 2% |
| | Unit 2 Test | 3% |
| **UNIT 3: Probability 10%** | Unit 3 Assignments | 5% |
| | Unit 3 Quizzes | 2% |
| | Unit 3 Test | 3% |
| **UNIT 4: Rational Expressions *12%*** | Unit 4 Assignments | 6% |
| | Unit 4 Quizzes | 2% |
| | Unit 4 Test | 4% |
| ***UNIT 5: Polynomial Functions 10%*** | Unit 5 Assignments | 5% |
| | Unit 5 Quizzes | 2% |
| | Unit 5 Test | 3% |
| ***UNIT 6: Exponents and Logarithms 12%*** | Unit 6 Assignments | 6% |
| | Unit 6 Quizzes | 2% |
| | Unit 6 Test | 4% |
| ***UNIT 7: Trigonometry 8%*** | Unit 7 Assignments | 4% |
| | Unit 7 Quizzes | 1.6% |
| | Unit 7 Test | 2.4% |
| **Diploma Exam** | Diploma Exam | 30% |

NOTE: Your Powerschool will reflect your Units 1-7 marks and add up to 100% but will be worth 70% representing your school mark for this course, the remaining 30% will come from your diploma exam, and combined respectively will result in your final mark.

## V. Resources

The required textbook for Mathematics 30-2 is *Principles of Mathematics 12.* A digital version of the textbook may be available. A student-owned scientific or graphing calculator is also required.

Students require access to reliable high speed internet that supports Google Meets. Students require a compatible device, usually a Chromebook, with a working webcam to access and participate in the course. Students require a working headset that includes a microphone and headphones.