



PEACE RIVER SCHOOL DIVISION  
VIRTUAL EDUCATION PROGRAM  
*"Learning Together - Success for All"*

**Mathematics 20-1**  
Course Outline  
2021-2022 | Semester 1  
**Teacher: Ms. Kathryn Brooks**

## I. Course Overview

Mathematics 20-1 is ideal for students planning on taking calculus in university, a degree in engineering, business, medicine or sciences. In each unit of study the primary focus will be on written and technology-based exercises, problem solving, and communicating mathematical concepts.

Students who believe they can learn, take risks and persevere in problem solving will be successful mathematics students.

Mathematics 20-1 consists of three sections namely:

- Algebra and Number
- Trigonometry
- Relations & Functions.

## 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

<b>UNIT 1: Sequence and Series</b>	
Week 1: Aug 30	<ul style="list-style-type: none"> <li>● Introductions</li> <li>● Arithmetic Sequence</li> </ul>
Week 2: Sept 7 <i>Sept 6 - Labour day</i>	<ul style="list-style-type: none"> <li>● Arithmetic Series</li> <li>● Geometric Sequence</li> <li>● Geometric Series</li> </ul>
Week 3: Sept 13	<ul style="list-style-type: none"> <li>● Review</li> <li>● Unit 1 Test: Sept 17 <b>**REWRITE: Oct 1**</b></li> </ul>
<b>UNIT 2: Quadratic Functions</b>	
Week 4: Sept 21 <i>Sept 20 - PD Day</i>	<ul style="list-style-type: none"> <li>● Analyze Quadratic Functions</li> <li>● Graphing Quadratic Functions</li> </ul>
Week 5: Sept 27	<ul style="list-style-type: none"> <li>● Completing the Square</li> <li>● Transformations of a Quadratic Function</li> <li>● Determine the Equation of a Quadratic Function</li> </ul>
Week 6: Oct 4 <i>Oct 8 – No School</i>	<ul style="list-style-type: none"> <li>● Review</li> <li>● Unit 2 Test: Oct 7 <b>**REWRITE: Oct 21**</b></li> </ul>
<b>UNIT 3: Quadratic Equations</b>	
Week 7: Oct 12 <i>Oct 11 - Thanksgiving</i>	<ul style="list-style-type: none"> <li>● Factoring Polynomial Expressions</li> <li>● Solving Quadratic Equations</li> </ul>
Week 8: Oct 18	<ul style="list-style-type: none"> <li>● Nature of Roots</li> <li>● Problem Solving with Quadratic Equations</li> <li>● Review</li> </ul>
Week 9: Oct 26 <i>Oct 25: PD Day</i>	<ul style="list-style-type: none"> <li>● Unit 3 Test: Oct 27 <b>**REWRITE: Nov 10**</b></li> </ul>
<b>UNIT 4: Nonlinear Systems, Inequalities, &amp; Absolute Value of Function</b>	
Oct 28	<ul style="list-style-type: none"> <li>● Solve Algebraically &amp; Graphically 2 value problems</li> </ul>
Week 10: Nov 1	<ul style="list-style-type: none"> <li>● Solve Problems with Linear and Quadratic Inequalities</li> <li>● Understand Absolute Value of Real Numbers</li> <li>● Absolute Value Functions</li> </ul>
Week 11: Nov 8 <i>Nov 11 – Remembrance</i>	<ul style="list-style-type: none"> <li>● Review</li> <li>● Unit 4 Test: Nov 10 <b>**REWRITE: Nov 24**</b></li> </ul>

<i>Day</i> <i>Nov 12 – No School</i>	
<b><i>UNIT 5: Radicals</i></b>	
<i>Week 12: Nov 15</i>	<ul style="list-style-type: none"> <li>• Operations on Radicals</li> </ul>
<i>Week 13: Nov 23</i> <i>Nov 22 – PD Day</i>	<ul style="list-style-type: none"> <li>• Solve Problems with Radical Equations</li> <li>• Review</li> </ul>
<i>Week 14: Nov 29</i>	<ul style="list-style-type: none"> <li>• Unit 5 Test: Dec 1 <b>**REWRITE: Dec 17**</b></li> </ul>
<b><i>UNIT 6: Rational Expressions and Equations</i></b>	
<i>Week 15: Dec 6</i>	<ul style="list-style-type: none"> <li>• Simplify Rational Expressions</li> <li>• Perform Operations on Rational Expressions</li> </ul>
<i>Dec 9</i>	<ul style="list-style-type: none"> <li>• Solve Problems Involving Rational Equations</li> </ul>
<i>Week 16: Dec 13</i>	<ul style="list-style-type: none"> <li>• Graph and Analyze Reciprocal Functions</li> <li>• Review</li> <li>• Unit 6 Test: Dec 15 <b>**REWRITE: Jan 5**</b></li> </ul>
<b><i>UNIT 7: Trigonometry</i></b>	
<i>Week 17: Jan 4</i>	<ul style="list-style-type: none"> <li>• Angles in Standard Position</li> <li>• Solve Problems with Primary Trigonometric Ratios</li> </ul>
<i>Jan 6</i>	<ul style="list-style-type: none"> <li>• Solve Sine and Cosine Law Problems</li> </ul>
<i>Week 18: Jan 10</i>	<ul style="list-style-type: none"> <li>• Review</li> <li>• Unit 7 Test: Jan 14 <b>**REWRITE: Jan 21**</b></li> </ul>
<i>Weeks Jan 17&amp;24: Final Project/Review</i>	
<b><i>FINAL EXAM: To Be Determined</i></b>	

#### 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.

The course will be evaluated over the term as follows:

<b>Total Unit Weight</b>	<b>Gradebook Category</b>	<b>Gradebook Weighting</b>
<b>UNIT 1: Sequence and Series</b> <b>12%</b>	Unit 1 Assignments	6%
	Unit 1 Quizzes	2%
	Unit 1 Test	4%
<b>UNIT 2: Quadratic Functions</b> <b>8%</b>	Unit 2 Assignments	4%
	Unit 2 Quizzes	1.6%
	Unit 2 Test	2.4%
<b>UNIT 3: Quadratic Equations</b> <b>10%</b>	Unit 3 Assignments	5%
	Unit 3 Quizzes	2%
	Unit 3 Test	3%
<b>UNIT 4: Nonlinear Systems, Inequalities, &amp; Absolute Value of Function</b> <b>10%</b>	Unit 4 Assignments	5%
	Unit 4 Quizzes	2%
	Unit 4 Test	3%
<b>UNIT 5: Radicals</b> <b>8%</b>	Unit 5 Assignments	4%
	Unit 5 Quizzes	1.6%
	Unit 5 Test	2.4%
<b>UNIT 6: Rational Expressions and Equations</b> <b>12%</b>	Unit 6 Assignments	6%
	Unit 6 Quizzes	2%
	Unit 6 Test	4%
<b>UNIT 7: Trigonometry</b> <b>10%</b>	Unit 7 Assignments	5%
	Unit 7 Quizzes	2%
	Unit 7 Test	3%
<b>Final Exam</b>	Final Exam	30%

Unit Breakdown:

Assignments	50%
Quizzes	20%
Tests	30%

## V. Resources

The required textbook for Mathematics 20-1 is *Precalculus 11*. A digital version of the textbook may be available. A student-owned 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.