Department of Mathematics and Statistics
Concordia University (Montreal)

MATH 201: Elementary Functions (Winter 2026)

Instructor	
Email address	
Lectures	
Office hours	Your professor will announce their office hours during which they will be available to give a reasonable amount of help. Note, however, that if you missed a class, it is not reasonable to expect your professor to cover the missed material for you.
Course website	Moodle
IMPORTANT – See "Choosing Between MATH 200 and MATH 201" and corresponding placement test at the end of this document	
Reading week	Begins on Monday March 02 and ends on Sunday March 08, 2026. No classes that week.
Textbook(s)	*Precalculus Essentials*, by J. Ratti and M. McWaters; Pearson Education. The hard-copy text can be purchased in the Concordia bookstore, https://www.bkstr.com/concordiastore/home The e-text is included in the MyLab Math system, the access card to which can be purchased at *https://pearsonhighered.onthehub.com/WebStore/OfferingDetails.aspx?o=6e3f781a6a91-ea11-812b-000d3af41938* Please note that the Concordia bookstore can price-match the prices found on the Pearson.
Tutorials	It takes a great deal of practice to succeed in this course. To complement lectures, the Department has organized weekly tutorials, which are conducted by tutors who will help with solving problems on the topics learned in class that week, with emphasis on the material that students may have particular difficulties within this course. Students are strongly encouraged to actively participate in these problem-solving sessions which can contribute very significantly to students' success in this course.
Math Help Centre	A Math Help Centre staffed by graduate students is available. The schedule of its operation and its location will be posted in the Department and on the Department webpage https://www.concordia.ca/artsci/math-stats/services/math-help-centre.html

Grading Scheme	The final grade will be based on the higher of a) or b) below: a) 10% for the assignments, 30% for the midterm test, 60% for the final exam b) 10% for the assignments, 90% for the final exam **THERE IS NO "100% FINAL EXAM" OPTION IN THIS COURSE**
Assignments	Students are expected to submit assignments online using **WeBWorK**. Late assignments will not be accepted. Students are also strongly encouraged to do as many problems as their time permits from the list of recommended problems included in this outline, as well as work on the practice exercises in WeBWorK and in MyLab Math.
WeBWork	Every student will be given access to an online system called WeBWorK. The system offers many exercises and practice problems. Students must use this system to do online assignments (see Assignments below). Before each exam (midterm and final), numerous practice problems will be posted on WeBWorK to aid students in their preparation.
MyLab Math	Every student who purchases the e-text will be given access to the online system called MyLab Math. This system contains an e-version of the textbook, as well as many resources (practice exercises, typical examples on different topics, often with solutions, video materials, etc.), that help you master the course material.
Midterm test(s)	There will be one midterm test, based on the material of weeks 1-6 (as listed in the course CONTENTS below). The test will be common for all sections of this course and will be held on **Sunday, March 1, 2026, at 2:00 P.M.**, and will be 1.5 hour long. The rooms for the test will be announced at least one week before the test. There is no make-up or alternate midterm test. For students who are unable to write the midterm test (for ANY reason), the final exam weight will be elevated automatically to 90% (as per the Grading Scheme above). It is strongly recommended, however, that students prepare themselves for, and do take the midterm test because: • the midterm test may contribute up to 30% to the student's grade (see the Grading Scheme above), so it may help elevate the grade received in the course; and • the midterm test is an important opportunity to get timely feedback on the students' progress in the course.

	If you are taking another course with a test at the same time (NOT just the day) as this one, you may choose which of the two tests you want to write. If you are choosing to write the midterm for this course, you must then inform the instructor of the other course that you will not write their test because of the time conflict. If the test to be missed is the midterm test from a MATH 200 to 209 course, then the "90% final +10% assignments" scheme will be applied to calculate your grade for that other MATH course.
Final exam	The final examination will be 3 hours long and will cover all the material in the course. **Students are responsible for finding out the date, time and location of the final exams once the schedule is posted by the Examinations Office**. Conflicts or problems with the scheduling of the final exam must be reported directly to the Examinations Office, not to your instructor. **It is the University's policy that students are to be available until the end of the final exam period. Conflicts due to travel plans will not be accommodated.**

Calculators
Only calculators approved by the Department (**with a sticker attached as proof of approval**) are permitted for the midterm test and final examination. For the list of Approved calculators see https://www.concordia.ca/artsci/math-stats/services.html#calculators

Approved calculators with stickers are also available in the Concordia bookstore.

Student Services
You may wish to access the many services available to you as a Concordia student. An overview of these resources can be found here: https://www.concordia.ca/students/services.html

Access Centre for Students with Disabilities
If you need accommodations for classes, assignments, or exams, please contact the Access Center for Students with Disabilities. Website: https://www.concordia.ca/students/accessibility.html

Counseling and Psychological Services
Counselling and Psychological Services offers short-term counselling to registered Concordia students who are in Quebec. Appointments can be either virtual or in-person. Website: https://www.concordia.ca/health/mental-health/counselling.html

Academic Integrity and Academic Code of Conduct
This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly.

Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia's website on academic integrity can be found at the following

address, which also includes links to each Faculty and the School of Graduate Studies: concordia.ca/students/academic-integrity [Undergraduate Calendar, Sec 17.10.2]

Behaviour

All individuals participating in courses are expected to be professional and constructive throughout the course, including in their communications. Concordia students are subject to the Code of Rights and Responsibilities which applies both when students are physically and virtually engaged in any University activity, including classes, seminars, meetings, etc. Students engaged in university activities must respect this Code when engaging with any members of the Concordia community, including faculty, staff, and students, whether such interactions are verbal or in writing, face to face or online/virtual. Failing to comply with the Code may result in charges and sanctions, as outlined in the Code.

Intellectual Property

Content belonging to instructors shared in online courses, including, but not limited to, online lectures, course notes, and video recordings of classes remain the intellectual property of the faculty member. It may not be distributed, published or broadcast, in whole or in part, without the express permission of the faculty member. Students are also forbidden to use their own means of recording any elements of an online class or lecture without express permission of the instructor. Any unauthorized sharing of course content may constitute a breach of the Academic Code of Conduct and/or the Code of Rights and Responsibilities. As specified in the Policy on Intellectual Property, the University does not claim any ownership of or interest in any student IP. All university members retain copyright over their work.

Extraordinary Circumstances

In the event of extraordinary circumstances and pursuant to the Academic Regulations the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the change.

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Course Contents

Letures/ Weeks	Sections		Recommended Problems	
1	1.1	Graphs of Equations	p. 62	5,7,9,17,23,27, 37,55,59,61,69
	1.2	Lines	p. 74	3, 5, 17, 23,29, 31, 53, 55, 65
2	1.3	Functions	p. 90	11, 17, 25, 27, 33, 35, 63, 69
	1.4	A Library of Functions	p. 106	9, 17, 19, 29, 31, 47, 51, 57
	1.5	Transformations of Functions	p. 121	3, 5, 11, 19, 33, 51, 63, 67
3	1.6	Combining Functions, Composite Functions	p. 132	5, 9, 11, 29, 31, 43, 47, 49
	1.7	Inverse Functions	p. 144	13, 21, 23, 27, 37, 43, 45
4	2.1	Quadratic functions	p. 161	7, 9, 17, 21, 29, 45, 47, 61
	2.5	Rational Functions	p. 211	# 5, 19, 21, 25, 29, 33, 39, 51, 61
5	3.1	Exponential Functions	p. 235	5, 9, 13, 23, 31, 47, 51, 53
	3.2	Logarithmic Functions	p. 250	13, 23, 31, 37, 45, 53, 59, 93
6	3.3	Rules of Logarithms	p. 262	15, 23, 29, 35, 47, 51, 55, 71, 75
	3.4	Exponential and Logarithmic Equations	p. 273	5, 17, 21, 25, 29, 35, 47, 57, 59
7		Pre-midterm Review (***if time permits***)		
	4.1	Angles and Their Measure	p. 290	13,15,23,25,45,51,57,63 ,65,69
8	4.2	The Unit Circle, Trigonometric Functions	p. 307	3, 11, 27, 31,37, 57, 67, 75
	4.3	Graphs of the Sine and Cosine Functions	p. 325	13, 17, 23, 25, 33, 37, 41, 43
9	4.5	Inverse Trigonometric Functions	p. 348	9,15, 17,25, 35, 55, 59, 61, 71
	4.6	Right Triangle Trigonometry	p. 358	13, 17, 21,31, 35, 39, 41, 47, 53
10	4.7	Trigonometric Identity	p. 370	3, 15, 19, 27, 33, 41, 45, 71, 73
	4.8	Sum and Difference Formulas	p. 385	# 1, 3, 13, 21, 29, 33, 41, 45, 51
11	5.1	The Law of Sine and the Law of Cosines	p. 407	# 1, 5, 7, 17,23, 27, 31, 49, 61, 65
12	**REVIEW** of the course			

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Choosing Between Math 200 and Math 201

If the last math course you took was at the high school level (Quebec), and more than five years have passed since you should probably register for Math 200. If you are still unsure of your level, read on.

A self-administered test to help you decide between Math 200 and Math 201 follows. Give yourself about 30 minutes to complete the test. Be honest with yourself, since registering for the wrong course may cost you money and result in a poor grade. Remember that all university-level courses usually demand quite a bit of your time. Students in Math 201 will find they will not have time once the course begins to review material that they are expected to know before they enter the course.

Scoring:

- 15 or less → Take Math 200;
- 16-21 → See an advisor;
- 22 or better → Take Math 201.

MATH 201 Qualifying Test

Part One

1) The sum of $3x^2 + x - 7$ and $x^2 + 10$ can be expressed as

   a) $4x^2 + x - 3$ b) $3x^2 + x + 3$ c) $4x^4 + x - 3$ d) $4x^2 + x + 3$

2) The product of $(-3xy^2)(5x^2y^3)$ is:

   a) $-8x^3y^5$ b) $-15x^3y^5$ c) $-15x^2y^5$ d) $-15x^3y^6$

3) Expressed as a single fraction in lowest terms, the sum of $\frac{3x}{4}$ and $\frac{2x}{3}$ is equivalent to:

   a) $\frac{5x}{7}$ b) $\frac{5x}{12}$ c) $\frac{17x}{7}$ d) $\frac{17x}{12}$

4) If $15x^6y$ is divided by $-3x^3$, the quotient is:

   a) $-5x^2$ b) $-5x^3y$ c) $-5x^2$ d) $-5x^3y$

5) Written in factored form, the binomial $a^2b - ab^2$ is equivalent to:

   a) $ab(a - b)$ b) $(a - b)(a + b)$ c) $a^2(b - b^2)$ d) $a^2b^2(b - a)$

6) The solution set for $2x^2 - 7x - 4 = 0$ is:

   a) {2, 1} b) $\{-\frac{1}{2}, 4\}$ c) {-2, 1} d) $\{\frac{1}{2}, -4\}$

7) What is the solution for the following system of equations?

$$\begin{cases} 2x + y = 7 \\ x - 2y = 6 \end{cases}$$

a) (3, 1) b) (1, 3) c) (-1, 4) d) (4, -1)

8) The sum of $\sqrt{12}$ and $5\sqrt{3}$ is:

a) $10\sqrt{3}$ b) $7\sqrt{6}$ c) $7\sqrt{3}$ d) 360

9) The graph of the line passing through the points (6, 7) and (4, 2) has a slope of:

a) $\frac{2}{5}$ b) $-\frac{5}{2}$ c) $\frac{5}{2}$ d) $-\frac{1}{2}$

10) The graph of the equation $y = 3$ is a line:

a) parallel to the x-axis b) parallel to the y axis

c) passing through the points (6, 7) d) passing through the point (3, 0)

11) Which equation represents a line whose slope is $\frac{1}{2}$ and whose *y*-intercept is 3?

a) $y=\frac{1}{2}x-3$ b) $y=-\frac{1}{2}x+3$ c) $y=3x+\frac{1}{2}$ d) $y=\frac{1}{2}x+3$

12) The inequality $3x + 2 > x + 8$ is equivalent to:

a) $x > -\frac{3}{2}$ b) $x > \frac{3}{2}$ c) $x > 3$ d) $x < 3$

13) The smallest whole number that satisfies the inequality $3x$ □□1 > 2 is:

a) 1 b) 2 c) 3 d) 0

14) If x is an integer, what is the solution set of $3 < x \leq 6$?

a) {3, 4 , 5} b) {4, 5, 6} c) {3, 4, 5, 6} d) {4, 5}

15) The lengths of sides of a triangle are 8, 15, and 17. If the longest side of a similar triangle is 51, what is the length of the shortest side?

a) 32 b) 24 c) 16 d) 4

16. If two legs of a right triangle are 5 and 12, the hypotenuse is:

a) $\sqrt{119}$ b) $\sqrt{17}$ c) 17 d) 13

17) What is the circumference of a circle whose radius is 6?

a) 6π b) 12π c) 36π d) 3π

18) Maria is twice as old as Sue. If *x* represents Sue's age, which expression represents how old Maria will be in three years?

a) $2x$ b) $x + 3$ c) $\frac{1}{2}x - 3$ d) $2x + 3$

Part Two

1) Simplify: $(2w^3 - 5w - 15) - (-6w^2 + w - 15)(4w^2 - 7)$

2) Evaluate: $-r - [-p - (-n + r)]$ for $n = -3, p = 4$ and $r = -1$.

3) Simplify: $\frac{1}{3^{-1} - 4^{-1}}$

4) Perform the indicated operation: $-\frac{1}{6} + \frac{11}{14}$

5) Factor completely: $3x^2 - 15x - 42$

6) Perform the indicated operations and express in simplest form: $\frac{x^2 - 16}{x^2 - x - 20} \bullet \frac{1}{x - 4}$

7) Perform the indicated operations: $3\sqrt{96} + 6\sqrt{54} - 2\sqrt{150}$

8) Express $\frac{3}{\sqrt{5}+1}$ as an equivalent fraction with a rational denominator.

9) Solve for a: $-14 - 6a < -74$

10) Find a positive number whose square is 12 more than the number itself.

11) Solve $x + 5 = 3y - 2$

$2x + 7 = y + 3$

12) In a class of 24 students, 25% of them failed a test. How many students failed the test?

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ANSWERS

Part One: 1. d); 2. b); 3. d): 4. b): 5. a); 6. b); 7. d); 8. c); 9. c); 10. a); 11. d); 12. c); 13. b); 14. b); 15. b): 16. d); 17. b); 18. d)

Part Two: (1) $2w^3 + 10w^2 - 6w - 7$; (2) 7; (3) 12; (4) $\frac{13}{21}$; (5) $3(x - 7)(x + 2)$; (6) $\frac{1}{x-5}$; (7) $20\sqrt{6}$; (8) $\frac{3\left(\sqrt{5}-1\right)}{4}$; (9) $a > 10$; (10) 4; (11) (-1;2); (12) 6.