AU: MATH 168 Precalculus
OU: MA 123 Precalculus Algebra & Trigonometry
WAU: MATH 126 Precalculus

201721
Self-Paced Courses
This course follows a self-paced online format. You have 180 days from your selected start date to complete the course. The last day to withdraw with a full refund is 15 days after your start date.

Instructor Contact
Please refer to course in LearningHub for the teacher contact information.

Communication with the Instructor
It is important to remember that while the Internet is available 24 hours a day, your instructor is not. You can expect that your instructor will respond to e-mail message to you within 2 business days during the week and may not be available to respond on weekends.

Other Assistance

<table>
<thead>
<tr>
<th>Assistance</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Username and password assistance</td>
<td><a href="mailto:helpdesk@andrews.edu">helpdesk@andrews.edu</a> (269) 471-6016</td>
</tr>
<tr>
<td>Enrollment and cancellations</td>
<td><a href="mailto:sdergister@andrews.edu">sdergister@andrews.edu</a> (269) 471-6323</td>
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<tr>
<td>Bookstore</td>
<td><a href="https://www.andrews.edu/bookstore">https://www.andrews.edu/bookstore</a></td>
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<tr>
<td>Technical assistance with LearningHub</td>
<td><a href="mailto:dlit@andrews.edu">dlit@andrews.edu</a> (269) 471-3960</td>
</tr>
<tr>
<td>Technical assistance with your Andrews account</td>
<td>andrews.edu/bdchat/chat.php</td>
</tr>
<tr>
<td>Exam requests</td>
<td><a href="mailto:sdeexams@andrews.edu">sdeexams@andrews.edu</a> (269) 471-6566</td>
</tr>
<tr>
<td>Student Services Support &amp; FAQ</td>
<td><a href="http://www.andrews.edu/distance/students/">www.andrews.edu/distance/students/</a></td>
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</tbody>
</table>

Any other questions: sde@andrews.edu, (800) 782-4769 or (269) 471-6570

Part 1: Course Information

Course Descriptions
Andrews University
Linear, quadratic, and absolute value equations and inequalities with applications; radical equations; polynomial, rational, exponential, logarithmic, inverse, trigonometric functions; higher order equations; exponential and logarithmic equations; the unit circle, trigonometric identities and equations; Law of Sines and Cosines; vectors in the plane, polar coordinates and graphs; complex numbers and De Moivre’s Theorem; conic sections.

Oakwood University
Course topics include elementary functions, their graphs and applications, including polynomial, rational, algebraic, exponential, logarithmic and trigonometric functions. A fast-paced course designed as a review of the algebra and trigonometry needed in calculus. A student may not receive credit for MA 123 and the MA 121-122 sequence.
Washington University
Relations, functions, transformation, inverse functions, systems of linear and quadratic equations. Exponential, logarithmic, and circular functions. Credit for this course does not apply toward a major or minor in mathematics but does apply toward the general education math/science requirements.

Course Prerequisites
Andrews University
SAT Math ≥ 510 or ACT Math ≥ 22 or Andrews Math Placement Exam ≥ P3 or MATH 165 or MATH 166

Oakwood University
A semester of precalculus or trigonometry in high school.

Washington Adventist University
MATH 120 with a minimum grade of “C” or placement test

Course Learning Outcomes
- To develop a demonstrable understanding of the topics outlined in the course description.
- To successfully engage in mathematical reasoning, problem solving, and expression.
- To appreciate how God reveals the beauty and order of the universe through the language of Mathematics.

Required Textbook and Course Material

Credit Hour and Commitment
This course is offered for 4 credits; therefore, it is expected that you would spend 12 hours per week if you are on pace to finish in 15 weeks, and 22 ½ hours per week if you wish to complete in 8 weeks.

Under the 15 week pace, it is suggested that you divide your weekly study time as follows:
- Textbook Reading: 2 hours
- Online Lectures: 3 hours
- Journal Posts: 30 minutes
- WeBWorK Assignments: 5 hours 30 minutes
- Solution-Write Up Assignments: 1 hour

This schedule will vary somewhat throughout the course, especially in weeks where exams are scheduled.

Part 2: Course Methods and Delivery

Methods of Instruction
Methods of instruction include assigned readings from the textbook and the course material, short essays and reflections on the reading, short open book quizzes on the readings,
interactions with the instructor via blogs, and two exams. Regular participation in the course is essential to good performance.

**Course/Technical Requirements**

- Modern computer system including:
  - High speed internet connection (DSL, Cable Modem, LAN)
  - Modern web browser (Google Chrome 19+, Firefox 3.0+, IE 9+, etc) with flash plugin for viewing videos
  - Sound card and speakers/headphones for listening to videos
  - Adobe Acrobat Reader (free from http://www.adobe.com/)

- Simple scientific calculator including trigonometric, exponential, and logarithmic functions. (note: you may not use a calculator capable of symbolic mathematics on the final exam).

**LearningHub Access**

This course is delivered online through LearningHub at [http://learninghub.andrews.edu](http://learninghub.andrews.edu)

Your username and password are your Andrews username and password. You need to activate your username and password to access LearningHub.

Please do this online here: [https://vault.andrews.edu/vault/pages/activation/information.jsp](https://vault.andrews.edu/vault/pages/activation/information.jsp) if you haven’t already. If you need assistance, call or email us: (296) 471-6016 or helpdesk@andrews.edu.

If you need technical assistance at any time during the course, or to report a problem with LearningHub, please email dlit@andrews.edu or call (269) 471-3960.

**Part 3: Course Requirements**

**Important Note:** Activity and assignment details will be explained in detail within each learning module. If you have any questions, please contact your instructor.

**Your Schedule**

In LearningHub, you will access online lessons, course materials, and resources. This course is self-paced. You must complete the course within 180 days. This is the Consortium policy. You may have a stricter deadline imposed by graduation, financial aid, or other restrictions.

Start by creating a schedule for completion of the course.

- Determine your deadline. Do you need a transcript sent to your home institution?
- Working from your deadline, count backwards. Allow 2 weeks after you take your final exam for your final grade to be calculated. Allow another 2 weeks for the transcript to be processed and sent.
- Now use the suggested schedules to create a schedule for yourself that ensures completion 4 weeks before your deadline.

Submit your course plan to your instructor within LearningHub AND discipline yourself to make regular progress.
Assignment Submission and Grading
All assignments for this course will be submitted electronically through Moodle and WeBWorK unless otherwise instructed. Assignments and exams must be completed in the order noted on the schedule.

Feedback on assignments and exams will be provided in a timely manner, as outlined below.

- **WeBWorK Assignments**
  Feedback is provided instantaneously by the WeBWorK system. If you have questions, or believe that you have entered a correct solution and it is not being accepted, please email your instructor using the Email Instructor button at the bottom of each WeBWorK page.

- **Solution Write-Up Assignments**
  Your instructor will grade your write-up assignments and post your final score, along with comments on any improvements you should make to your solution writing, within one week of the date on which you submit the assignment.

- **Journal Posts**
  Feedback on your journal posts will be provided within one week of your submission.

- **Exams**
  Midterm and Final exams will be graded within one week of the date that your instructor receives the exam. Exam scores will be posted, but the exams themselves will not be returned. You may contact your instructor for additional feedback on your exam performance.

Non-Graded Activities
Even though these activities do not count directly towards your grade, they are important steps in the learning process.

- **Textbook Readings**
  Before starting the lessons or attempting the assignments for a given section, you must read the associated textbook section. Mathematics textbooks should be read with pencil and paper so that you can work your way through the examples as you read.

- **Lessons**
  The lessons are equivalent to a lecture in a face-to-face course. They allow your instructor to highlight the most important parts of each section, give useful hints or shortcuts, and provide you with examples in addition to those given in the text. You should read through the lessons and watch the video examples before starting on the associated WeBWorK or write-up assignment.

Graded Course Activities
These assignments give you the opportunity to demonstrate mastery of the course material. They are divided into several categories, each with a specific purpose and weight.

- **WeBWorK Assignments (20% of your grade)**
  Mathematics is not a spectator sport! Reading your textbook and watching video examples is typically not enough for you to master the material. As an athlete must spend hours practicing in order to excel in his or her sport, so you must practice your precalculus skills if you wish to do well on exams.
The online homework system WeBWorK will help you do just that by checking your answers and giving you instantaneous feedback. After reading the material for each lesson, print out the associated WeBWorK assignment and work through the problems on paper. When you are comfortable with your answers (after possibly seeking help), return to WeBWorK and submit them. Don't worry if you get them wrong the first time. In most cases you will have an unlimited number of attempts on each problem. However, it is not to your advantage to guess at the answer either. If WeBWorK marks one of your answers wrong, go back and check your work or seek assistance using WeBWorK's Email Instructor button.

- **Solution Write-Up Assignments (10% of your grade)**
  While WeBWorK can check your final answer, it does not check your solution process. In order to do well on the exams, you must not only be able to find the right answer, but express your solution using correct mathematical notation. After each chapter you will be asked to write-up solutions to problems from your textbook. You will then scan or take a picture of your work and upload it to Moodle.

- **Journal Posts (5% of your grade)**
  Several times during the term you will be asked to respond to a journal question. These questions promote the integration of faith and learning by asking you to reflect on the connections between mathematics and spiritual issues. Journal questions are read only by your instructor. The following rubric will be used to evaluate your responses.

<table>
<thead>
<tr>
<th>Excellent (5)</th>
<th>Average (3)</th>
<th>Below Average (1)</th>
<th>Unacceptable (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response is:</td>
<td>well thought-</td>
<td>reasonable, but does</td>
<td>minimal, showing little</td>
</tr>
<tr>
<td></td>
<td>out, addressing</td>
<td>not address all</td>
<td>thought and missing many</td>
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<td></td>
<td>the question</td>
<td>aspects of the</td>
<td>question aspects completely.</td>
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<td></td>
<td>carefully and</td>
<td>question, addresses</td>
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<tr>
<td></td>
<td>completely.</td>
<td>them carefully.</td>
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- **Midterm Exam (30% of your grade)**
  The midterm exam covers the material from chapters 1-5 of your text. The exam is administered by a proctor (see part 5 below) and will be taken with pencil and paper. **You may not use a calculator for the midterm exam.** You must show all steps in your solutions. Solutions lacking neatness and/or proper evidence will be discounted at the instructor’s discretion.

- **Final Exam (35% of your grade)**
  The final exam is comprehensive, emphasizing the material from the second half of the course, chapters 6-8 and 10. The format of the final is similar to that of the midterm, but **you will need a simple scientific calculator with trigonometric function capabilities.** The rules for showing your work still apply.

**Exams**
You are allowed 120 minutes to complete the midterm exam. You are not allowed to use your calculator for the Midterm exam. **It is your exam proctor’s responsibility to return the completed exam.** An exam received from a student will earn a failing grade.

All exams must be supervised by a school or community official, such as a teacher, librarian, registrar, or pastor, who is not related to the student.
The exam request form will be available in Moodle after you have completed the assignments prior to the exam. The student must state clearly on the exam request form the professional status, job title, or any other qualifications of the supervisor that will aid the testing department in the approval process. If you are attending a college or university, you must use the testing center at that institution. A student living near the Andrews University School of Distance Education main office in Michigan must have the exams supervised at the School of Distance Education testing office. However, the exam request should be sent in advance of time.

An online exam code cannot be sent to a supervisor who has the same address as the student unless the address is known to be that of a school, mission facility, etc.

All college students must present photo identification to their supervisor’s before taking exams. If you cannot take your exam by the deadline date, email sdeexams@andrews.edu.

In order for an exam grade to be recorded, a signed Supervisor's Signature Form must accompany the exam being returned.

No exam is returned to the student or supervisor. Test grades are sent to the student as soon as the exam is graded.

Fee feedback from the instructor for midterm exams will provide information for studying for future exams.

Suggested schedule for completion in 8 weeks:

<table>
<thead>
<tr>
<th>Week</th>
<th>Module(s)</th>
<th>Readings</th>
<th>Activities</th>
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</thead>
<tbody>
<tr>
<td>Intro</td>
<td>Introduction and Orientation</td>
<td>Orientation Writing Expectations</td>
<td>Submit Schedule Tell About Me Academic Honesty</td>
</tr>
<tr>
<td>1</td>
<td>Week 1</td>
<td>1: Linear Equations and Applications 1-2: Linear Inequalities 1-3: Absolute Value in Equations and Inequalities 1-4: Complex Numbers 1-5: Quadratic Equations and Applications</td>
<td>Introduce Yourself Plagiarism Assignment WeBWorK 1-1 WeBWorK 1-2 WeBWorK 1-3 WeBWorK 1-4 WeBWorK 1-5 Solution Write-Up Cpt 1</td>
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<tr>
<td>2</td>
<td>Week 2</td>
<td>2-1 &amp; 2-2: Cartesian Coordinates &amp; Distance in the Plane 2-3: Equation of a Line 3-1 &amp; 3-2: Functions &amp; Graphing Functions 3-3: Transforming Functions 3-4: Quadratic Functions 3-5: Operations on Functions 3-6: Inverse Functions</td>
<td>Journal Question #1 WeBWorK 2-1 &amp; 2-2 WeBWorK 2-3 WeBWorK 3-1 &amp; 3-2 WeBWorK 3-3 WeBWorK 3-4 WeBWorK 3-5 WeBWorK 3-6 Solution Write-Up Cpt 2-3</td>
</tr>
<tr>
<td>3</td>
<td>Week 3</td>
<td>4-1: Polynomial Functions, Division, and Models 4-2: Real Zeros and Polynomial Inequalities 4-3: Complex and Rational Zeros 4-4: Rational Functions and Inequalities</td>
<td>Journal Question #2 WeBWorK 4-1 WeBWorK 4-2 WeBWorK 4-3 WeBWorK 4-4 Solution Write-Up Cpt 4</td>
</tr>
<tr>
<td>4</td>
<td>Week 4</td>
<td>5-1: Exponential Functions 5-2: Exponential Models 5-3: Logarithmic Functions 5-4: Logarithmic Models 5-5: Exponential and Logarithmic Equations</td>
<td>WeBWorK 5-1 WeBWorK 5-2 WeBWorK 5-3 WeBWorK 5-4 WeBWorK 5-5 Solution Write-Up Cpt 5</td>
</tr>
<tr>
<td>Week</td>
<td>Module(s)</td>
<td>Readings</td>
<td>Activities</td>
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</table>
| 5    | Week 5    | 6-1: Angles and Their Measures  
6-2: Right Triangle Trigonometry  
6-3 & 6-4: Trigonometric Functions & Their Properties  
6-5: More General Trigonometric Functions  
6-6: Inverse Trigonometric Functions | Journal Question #3  
WeBWorK 6-1  
WeBWorK 6-2  
WeBWorK 6-3 & 6-4  
WeBWorK 6-5  
WeBWorK 6-6  
Solution Write-Up Cpt 6 |
| 6    | Week 6    | 7-1: Basic Identities and Their Use  
7-2: Sum, Difference, and Cofunction Identities  
7-3: Double-Angle and Half-Angle Identities  
7-4: Product-Sum and Sum-Product Identities  
7-5: Trigonometric Equations | WeBWorK 7-1  
WeBWorK 7-2  
WeBWorK 7-3  
WeBWorK 7-4  
WeBWorK 7-5  
Solution Write-Up Cpt 7 |
| 7    | Week 7    | 8-1: Law of Sines  
8-2: Law of Cosines  
8-3: Vectors in the Plane  
8-4: Polar Coordinates and Graphs  
8-5: Complex Numbers and DeMoivre's Theorem | Journal Question #4  
WeBWorK 8-1  
WeBWorK 8-2  
WeBWorK 8-3  
WeBWorK 8-4  
WeBWorK 8-5  
Solution Write-Up Cpt 8 |
| 8    | Week 8    | 10-1: Systems of Linear Equations  
10-2: Solving Systems with Gauss-Jordan Elimination  
10-3: Matrix Operations  
10-4: Solving Systems of Linear Equations Using Matrix Inverses | WeBWorK 10-1  
WeBWorK 10-2  
WeBWorK 10-3  
WeBWorK 10-4  
Solution Write-Up Cpt 10 |

**Suggested schedule for completion in 16 weeks:**

<table>
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<tr>
<th>Week</th>
<th>Module(s)</th>
<th>Readings</th>
<th>Activities</th>
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</table>
| Intro| Introduction and Orientation | Orientation  
Writing Expectations | Submit Schedule  
Tell About Me  
Academic Honesty |
| 1    | Week 1    | 1-1: Linear Equations and Applications  
1-2: Linear Inequalities  
1-3: Absolute Value in Equations and Inequalities | Introduce Yourself  
Plagiarism Assignment  
WeBWorK 1-1  
WeBWorK 1-2  
WeBWorK 1-3 |
| 2    | Week 2    | 1-4: Complex Numbers  
1-5: Quadratic Equations and Applications  
2-1 & 2-2: Cartesian Coordinates & Distance in the Plane | WeBWorK 1-4  
WeBWorK 1-5  
Journal Question #1  
Solution Write-Up Cpt 1  
WeBWorK 2-1 & 2-2 |
| 3    | Week 3    | 2-3: Equation of a Line  
3-1 & 3-2: Functions & Graphing Functions  
3-3: Transforming Functions | WeBWorK 2-3  
WeBWorK 3-1 & 3-2  
WeBWorK 3-3 |
| 4    | Week 4    | 3-4: Quadratic Functions  
3-5: Operations on Functions  
3-6: Inverse Functions | WeBWorK 3-4  
WeBWorK 3-5  
WeBWorK 3-6  
Solution Write-Up Cpt 2-3 |
| 5    | Week 5    | 4-1: Polynomial Functions, Division, and Models  
4-2: Real Zeros and Polynomial Inequalities  
4-3: Complex and Rational Zeros | Journal Question #2  
WeBWorK 4-1  
WeBWorK 4-2  
WeBWorK 4-3 |
| 6    | Week 6    | 4-4: Rational Functions and Inequalities  
5-1: Exponential Functions  
5-2: Exponential Models | WeBWorK 4-4  
Solution Write-Up Cpt 4  
WeBWorK 5-1  
WeBWorK 5-2 |
| 7    | Week 7    | 5-3: Logarithmic Functions  
5-4: Logarithmic Models  
5-5: Exponential and Logarithmic Equations | WeBWorK 5-3  
WeBWorK 5-4  
WeBWorK 5-5 |
Completing Assignments
All assignments for this course will be submitted electronically through Moodle unless otherwise instructed. Assignments and exams must be completed within 180 days of course registration date. This timeframe is subject to change depending on deadlines set by your home institution.

Part 4: Grading Policy
Graded Course Activities

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<tr>
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<td>5</td>
<td>Journal Posts</td>
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<td>30</td>
<td>Midterm Exam</td>
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<tr>
<td>35</td>
<td>Final Exam</td>
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<td>100%</td>
<td>Total Percent Possible</td>
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Viewing Grades in Moodle
- Click into the course.
- Click on the Grades link in the Settings Box to the left of the main course page.
Letter Grade Assignment

<table>
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<tr>
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<td>90-92%</td>
</tr>
<tr>
<td>B+</td>
<td>88-89%</td>
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<tr>
<td>B</td>
<td>83-87%</td>
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<tr>
<td>B-</td>
<td>80-82%</td>
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<tr>
<td>C-</td>
<td>70-72%</td>
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<tr>
<td>D</td>
<td>60-69%</td>
</tr>
<tr>
<td>F</td>
<td>0-59%</td>
</tr>
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</table>

Part 5: Course Policies

Withdrawal and Incomplete Policies
The current withdrawal policy can be found online at https://www.andrews.edu/distance/students/gradplus/withdrawal.html. The incomplete policy is found online at http://www.andrews.edu/weblmsc/moodle/public/incompletes.html.

Maintain Professional Conduct Both in the Classroom and Online
The classroom is a professional environment where academic debate and learning take place. Your instructor will make every effort to make this environment safe for you to share your opinions, ideas, and beliefs. In return, you are expected to respect the opinions, ideas, and beliefs of other students—both in the face-to-face classroom and online communication. Students have the right and privilege to learn in the class, free from harassment and disruption.

Academic Accommodations
Students who require accommodations may request an academic adjustment as follows:

1. Read the Andrews University Disability Accommodation information at https://www.andrews.edu/services/sscenter/disability/
2. Download and fill in the disability form at http://www.andrews.edu/services/sscenter/disability/accommodationsreqform.pdf. Preferably type answers. To save a digital copy, 1) print to file and save or 2) print and scan. Email the completed form and disability documentation (if any) to success@andrews.edu or fax it to (269) 471-8407.
3. Email sdestudents@andrews.edu to inform the School of Distance Education that a disability has been reported to Student Success.

Commitment to Integrity
As a student in this course (and at this university) you are expected to maintain high degrees of
professionalism, commitment to active learning and participation in this class, and integrity in your behavior in and out of the classroom.

Commit to Excellence
You deserve a standing ovation based on your decision to enroll in, and effectively complete this course. Along with your pledge of “commitment to Integrity” you are expected to adhere to a “commitment to excellence.” Andrews University has established high academic standards that will truly enhance your writing and communication skills across the disciplines and in diverse milieu with many discourse communities in the workplace.

Honesty
Using the work of another student or allowing work to be used by another student jeopardizes not only the teacher-student relationship but also the student’s academic standing. Lessons may be discussed with other students, tutors may help to guide a student’s work, and textbooks, encyclopedias and other resource materials may be used for additional assistance, but the actual response must be the student’s own work.

Exams must be completed in the presence of an approved supervisor without the assistance of books, notes, devices or outside help unless otherwise specified in the exam directions. The student should have no access to the exam either before or after it is taken. A student who gives information to another student to be used in a dishonest way is equally guilty of dishonesty.

Any violation of this policy will be taken before the Higher Education Academic and Curriculum Committee for appropriate punitive action.

Part 6: Bibliography

Journal questions were developed in conjunction with the following sources.