

## General course information:

### Math-M105: College Algebra (3 credits)

**Prerequisite:** Math-M104: Foundations of College Algebra, C- or better OR placement into this course.

**Course Description:** Refer to [Appendix F](#) for a detailed list of topics

Students will deepen their understanding of functions, acquire non-linear problem solving skills and develop the algebraic skills necessary for precalculus and general education mathematics courses: factoring; quadratic, polynomial, rational and radical equations and applications; and operations with rational expressions, radicals, and rational exponents.

**This course contributes to the fulfillment of the Quantitative Literacy Goal and the outcomes listed:**

Students will translate a verbal problem into mathematical symbols.

Students will solve the mathematical problem that models the verbal problem.

Students will use the solution of the mathematical problem to draw valid conclusions about the verbal problem.

## Required course materials (textbook, access code and calculator):

### MyMathLab Student Access Kit (Access Code)

- Use of the website MyMathLab is required to complete and submit your homework and quizzes.
- To register at the website you must have the MyMathLab Access Code.
- Your instructor will provide the information on how and when to register with your MyMathLab code.
- Refer to the [Appendix A: Acquiring the MyMathLab Access Code](#) for detailed information about acquiring the MyMathLab access code. **PLEASE READ THIS BEFORE YOU PURCHASE THE TEXTBOOK / CODE!**
- **Do NOT purchase the 18-week (which is only good for one semester). The other options will last for both M104 and M105 (the next course in the algebra sequence).**

### Textbook

- [Algebra for College Students](#), Robert Blitzer, **Eighth Edition (physical copy or online option)**
- The physical copy of the textbook is optional, but recommended. You will have access to the textbook through the MyMathLab website.
- Refer to [Appendix A: Acquiring the MyMathLab Access Code](#) for information about the online text option and purchase details. **PLEASE READ THIS BEFORE PURCHASING YOUR TEXTBOOK / CODE!**

### Calculators

- It is recommended to have a TI-83, TI-83 Plus, TI-84 or TI-84 plus calculator for this course.
- A limited number of TI calculators are available for use in the Math Commons if you have not yet purchased your calculator. These calculators can be temporarily checked out for use in your class on an emergency basis.

### Remote Learning:

- A stable internet connection is required for streaming and lectures via Zoom
- A web camera and working microphone is required for participation in Zoom lectures

### Forbidden Materials

- You will NOT be permitted to use the TI-89 or the TI-Nspire CAS calculators, or any other calculator equipped with a computer algebra system (CAS).
- Use of CAS to **generate OR check answers** to course work is NOT permitted and is considered **cheating**.

- You are NOT permitted to use any “math help” websites that uses a CAS or solves problems.
- Calculator APPS on your smart phone will NOT be allowed during in-class tests.
- Please refer to [Appendix E: Academic and Personal Conduct](#) for more information

## M105 Course Websites

There are four different websites you will use over the course of this semester:

- MyMathLab: ([www.pearsonmylabandmastering.com](http://www.pearsonmylabandmastering.com))
  - MyMathLab (MML) is used to complete MyMathLab homeworks and MyMathLab Quizzes
  - The MML gradebook contains your current class grade based on course work, exams, and Math Lab attendance.
- Canvas: (SP21: M105 Math Lab)
  - The Canvas Math Lab page is administered by the Math Lab Coordinator, Dr. Peter Tupa
  - This page’s gradebook contains **only** your current Math Lab attendance score
  - This page contains many resources to help you study for exams and learn how to use MML
- Canvas: (SP21: COLLEGE ALGEBRA: #####)
  - This page is administered by your course lecturer
  - The ##### will match your course CRN number
  - Announcements from your lecturer can be found here
  - Graded homeworks and Skills Practice sets can be found here by clicking on the **Assignments** tab
- Canvas: (SP21: Math Tutoring)
  - Math tutors will be available via Zoom. This canvas page hosts the Zoom link and times of operation
  - A course invitation will be sent to you during the first week of classes. If you do not receive the invitation after the first week, please email the Math Coordinator, Diane Hampshire ([dmhampsh@iuk.edu](mailto:dmhampsh@iuk.edu)) to request an invitation.

## Grade component details

- All components of your Math-M105 grade will be posted in your MyMathLab gradebook.
- The gradebook in Canvas should not be used to determine your current course average.
- **You must have a score of at least 60% on the final exam to earn a grade higher than D-.**

## MyMathLab Homework

- You will be assigned on online MyMathLab homework assignment after each class (except those immediately before your in-class tests).
- The online homework can be completed using any computer with a dependable internet connection.
- For most exercises you are given three tries to enter the correct answer.
  - After the third unsuccessful try at a question you will be given a new similar question. There is no limit to the number of new questions (3 tries each) you can attempt.
- If you do not attempt an online homework assignment before the due date, you will be assigned a score of 0 for the assignment. You will always have the option of going back and completing late homework for full credit.

## MyMathLab Quizzes

- There will be twelve on-line quizzes during the semester.
- At the end of the semester, your two lowest quiz scores will be omitted, and the quiz average will be the average of your scores on your ten highest quizzes.
- You are permitted to make two attempts on each quiz, but if you make a second attempt it must be before the due date. The best score of the two attempts will be used for your grade. You are strongly encouraged to review your first attempt with a tutor before you make the second attempt.
- The work on the quiz should be yours alone. Please do not ask the lab tutors or your classmates for assistance.

- **To be able to access the quiz, you must achieve a score of 90% or higher on each of the homework assignments covered by the quiz. The start date/time of the quiz will be after the homework assignments covered on the quiz are both due.**
- There will be NO extensions on due dates for the quizzes without written medical or legal documentation. Plan your work accordingly.
- If you fail to complete a quiz on time, your score will be 0. NO EXCEPTIONS!
- Use the “MML Quizzes and Tests” link in the left navigation pane to open the assignment.

## Graded Homework

- There will be 12 required paper and pencil exercise sets assigned and collected for a grade. The assignments and due dates will be posted through your Math-M105 Canvas site.
- At the end of the semester, your two lowest Graded Homework scores will be omitted.
- It is your responsibility to print, complete and submit each assignment on time. Be sure to DOWNLOAD the document before printing so all of the math symbols will display correctly.
- For each Graded Homework set posted, there will be similar exercises posted in the matching Skill Practice Set. You may ask the tutors in the IU Kokomo Math Commons to assist you as you complete these exercises.
- The work you submit for the Graded Homework must be yours alone. Collaboration with other students is **not permitted**.
- Use of computer algebra systems (CAS) to generate OR check answers to homework and quiz questions is NOT permitted and is considered cheating. This includes the use of the CAS provided in the TI-89 and TI-Nspire CAS calculators as well as the numerous “math help” websites.
- Graded Homeworks must be scanned as a pdf document and submitted via the same assignment in Canvas
  - Images of your homework may be taken with a cell phone, BUT the pictures must be of **sufficient quality** that all steps and work can be easily read. Unreadable submissions will not receive full credit.
  - Be sure to take the picture with the camera **parallel** to the sheet of paper so as to not create a ‘Star Wars’ scrawl.
  - Suggested phone apps to take pictures / convert to pdf are:
    - Microsoft Office Lens
    - Google Drive for android: click on multicolored + in bottom right of corner, then choose the scan option
    - Iphone Note: open a note or create a new one, press the + and scan

## Participation

- Your instructor may require you actively participate in class by answering questions, solving problems or engaging in group work activities.
- You will be expected to actively participate.
- Please be respectful of your peers and the learning environment.

## Exams

- The three unit exams will be taken in the Math Lab during your regular Math Lab time (following the lecture period for that day).
- The test problems will be similar to those in the on-line homework, strongly recommended textbook exercises, skill practice sets and graded homework assignments.
- You will be permitted to use a TI-83, TI-83 Plus, TI-84 or TI-84 plus calculator during the test.
- Calculators accessed through a mobile device (cell phone, tablet, etc.) will NOT be permitted.
- You may NOT use your book or any notes during the test.
- You should show your work clearly to allow for partial credit.

## Exam make-up policy

- If you know that you cannot attend class when a test is scheduled, you should contact your instructor in writing (by email) at least two weeks in advance to make alternative arrangements for taking the test.
- If you miss a test with no advance notice for a valid reason (e.g. due to illness), you must contact your instructor within 24 hours of the test. At the instructor’s discretion, a make-up test may be offered. All make-up tests must be completed before the graded tests are returned to the rest of the class.

- If you miss a second test, you will be required to provide a documented reason for your absence in order to make-up the missed test. Without such documentation, your score for the missed test will be 0.
- After making arrangements for a make-up test with your instructor, it may be necessary for you to contact the IU Kokomo Testing Center at 765 455 9395 to schedule a time for the test.

## Online Academic Honesty Statement

**Permitted Resources:** You may use scratch paper, a calculator or graphing calculator (without CAS capabilities), textbook or eText, and your notes (including past quizzes and tests).

**Prohibited Resources:** You are NOT permitted to obtain help from others. You are NOT permitted to use your computer, apps, or any websites to generate solutions. You are NOT permitted to discuss any portion of this test with others including family, friends, tutors, and classmates either before or after taking the test.

**Academic Honesty:** The work submitted must be your own work. If I am not fully convinced that you have done your work with a good grasp of the concepts, I may ask you to be available for a phone call or Zoom meeting to discuss it. You will have to convince me how you have arrived at your solutions. If you are unable to do this, I will consider this as cheating and apply all the penalties that this entails.

## Math Lab Session component:

### Math Lab Coordinator Contact Information

**Math Lab Coordinator:** Dr. Peter Tupa  
**e-mail:** ptupa@iuk.edu

**Office Hours:** By Appointment

### Math Lab Session:

- The purpose of the Math Lab session is to support your learning in your Math-M105 class. Tutors and Lab Supervisors are always on duty to assist you as you strive to master the course material.
- Please use your time in the Math Lab to complete all reading, homework, quizzes, and graded homework assigned by your instructor as well as working towards mastery of the course material.
- Your attendance during your weekly Math Lab Sessions is a requirement of Math-M105
  - To succeed in this course you should expect to spend a minimum of 6 hours of learning time each week, in addition to time attending class.
  - Seventy-five (75) minutes of your study time will be in the IU Kokomo Math Computer Lab (Room KO 054) during your required Math Lab Session.
  - Three of your Math Lab sessions will be dedicated to taking exams, and ten sessions will be available to skill building and completing assignments.

### Math Lab Session attendance requirement:

- Attendance during your weekly Math Lab session is a requirement of Math-M105.
  - Each time you attend your Math Lab (other than test days) you will earn a bonus point that will be applied to your end-of-semester online exam (up to a total of +5%).
  - The Roll Call feature in your Math Lab session Canvas will record your attendance grade.
  - To more accurately keep track of your attendance, you are required to sign-in and use the lab computers during your session.
- You are expected to be present in the Math Lab AND working on Math-M105 assignments for your entire scheduled time.
  - If the tutors notice that you are working on assignments for other courses, checking or sending email, visiting Facebook, sending or receiving text messages, etc., you will be asked to re-focus your attention on math assignments. You will be counted as absent if you continue to use the time for purposes unrelated to your math class.

- Please be aware that the lab supervisors have the capability of remotely viewing your screen while in the computer lab.
- If you are more than 15 minutes late, or if you leave more than 15 minutes before the end of your session, you will forfeit all of your attendance points for the week.
- If you arrive between 5 and 15 minutes after the start of your session, or if you leave between 5 and 15 minutes before the end of your session, you will be considered “tardy” and you will lose a quarter of the attendance points for the week.

## Math Lab Pathways to Mastery

While in the Math Lab, you will be expected to work on practicing and mastering mathematical techniques. You may not use the time to work on assignments for other classes. If you find yourself saying “I do not have anything to do,” please use the following list to see what other options there are for working towards math mastery.

- MyMathLab Homework assignments (You are allowed to work ahead)
  - You can also go back to previous homework and **Improve Your Score** up to 100%
- MyMathLab Quizzes
  - You can ask a tutor to go over past quizzes to help you understand any mistakes
- Graded Homeworks
- Skill Practice Sets (these are posted in the same location as the Graded Homeworks)
- Math Mastery Worksheets can be used to practice key techniques and concepts until you are 100% proficient. This worksheets are available via the Math Lab Canvas page.
- Read the section of the textbook that you are currently covering in class
- You can ask a tutor to go over past exams to improve your understanding of previous mistakes
- Print out the Assignments List and work the STRONGLY RECOMMENDED textbook exercises
- Also from the Assignments List, work the Exercises from the printed textbook for additional practice
- MyMathLab Personalized Study Plans
  - In the MyMathLab page, click the left tab “MML Personalized Study Plan”
  - Based on your previous quizzes, MML will offer additional practice problems, guided help, and example videos of concepts and types of problems that still require mastery
- Test Review Practice Exams
  - On the Math Lab Canvas page are resources to help study for upcoming exams
- Pre-test & Post-Test: The Pre and Post test are the only assignments that **MUST** be completed in the Math Lab

## APPENDIX A: Acquiring the MyMathLab Access Code

- There are several options to acquiring the MyMathLab code:
  - **Option 1: Textbook and MyMathLab Starter Kit bundle.** This includes both a physical textbook and an access code. Sometimes the code comes as an inserted card, or sometimes it can be found glued to the inside cover of the book. **CAUTION:** If you purchase the bundle from a location OTHER than the IUK bookstore, please ensure that the code is not listed as “used”. Some websites will claim that a code is include, but there is no guarantee that it has not already been used.
  - **Option 2: MyMathLab Student Access Kit.** A card with only the code can also be purchased at the IUK bookstore. This method is preferred by students using financial aid at the bookstore.
  - **Option 3: Purchase the MyMathLab Code directly** from the MyMathLab website. This purchase can occur during the registration process and requires a credit card or PayPal account. **WARNING: There are two purchase options: regular student access (about \$105) or semester student access (18-week) (about \$70). It is highly recommended that you do NOT purchase the 18-week access plan. If you do, you will have to repurchase the same plan again for M105 (the next required course) or if you have to retake M104. The regular student access plan is active for 2 years and good for both the M104 and M105 courses.**
- **Point of No Return:** If you are unsure that this is the correct class for you, **do not unwrap** your textbook bundle or enter your access code until after you have attended the first day of class and spoken to your instructor. The bookstore will not accept books for returns after they have been unwrapped, nor can they accept codes that have been used. Temporary Access to the MML website and textbook can still be used for the first two weeks of class.
- **Temporary Access:** If you are waiting on financial aid to come through and cannot yet purchase your materials, you can still get access to the MyMathLab website. When you are asked to register, you can optionally enroll in a temporary access period for **fourteen days**. This temporary access will allow you to complete your homework and read the textbook. After two weeks you will be required to purchase an access code. If financial aid is still pending at that time, please contact the Math Lab coordinator, Dr. Peter Tupa, as soon as possible. NOTE: If you have used the temporary access option previously (and purchased the 18-week plan) you will be unable to use temporary access again. If that is the case, please contact Dr. Peter Tupa.
- **Do you even need an Access Code:** If this is your first semester using MyMathLab with this textbook, OR if your access plan has expired (depending on if you purchased an 18-week or 2 year plan) you are required to purchase an access code. If you were enrolled in Math M104 or Math M105 in the last two years at IUK and purchased full access you do NOT need to purchase a new textbook and access code. You will need to use the same MyMathLab **login name** and **password** you used in your prior M104/M105 course to register for your new MyMathLab course.
- More specific cases should consult the MyMathLab Access Code FAQ to see if they need to purchase a new code or not.

## Appendix B: Math Learning Resources

If you are having difficulty with any of the assigned work please take advantage of the following resources:

- Instructor office hours
- IUK Math Commons (KO 050) and Math Computer Lab (KO 054) are located on the lower level of the main building). Both areas are open and staffed with tutors during:
  - **Monday through Thursday, 9 am to 7pm**
  - **Friday, 9 am to 2 pm**
- The tutors can assist you if you have trouble as you work through your online homework, textbook exercises, Graded Homework, Skill Practice Set exercises, or review your work on any items that have already been graded.
- Tutors will also be available through Zoom (Monday through Thursday, 5pm to 9pm). The link and available times can be found on the Math Tutoring Canvas page. If you have not been invited to this canvas page after the first week of classes, please email Diane Hampshire (dmhampsh@iuk.edu).

## Appendix C: MyMathLab and Computer Technical Support

- Use the link below to get assistance setting up your **personal computer**:
- <http://www.pearsonmylabandmastering.com/northamerica/mymathlab/students/support/index.html>
- If you encounter technical problems when working on your **personal computer** with the MyMathLab website, click on the circled question mark in the upper right corner of the browser for support options.

- If necessary, call the MyMathLab tech support center at 800-677-6337.
- If the problem continues, it is your responsibility to report the problem to the Math Lab Coordinator by email (ptupa@iuk.edu) at the time of the problem.
  - Include your name, course and instructor, description of the problem, actions taken and “incident number” from your MML tech support contact.
  - The “time stamp” on the email message will be used by the coordinator when she calls the MyMathLab tech support center to confirm that connection to the MyMathLab was unavailable.
  - If it is determined that the problem was caused by a MyMathLab server error, the Math-M105 instructors will be informed and due dates will be adjusted as necessary, at the discretion of the instructors.
  - If the problem was the result of an issue with your personal equipment or your Internet Service Provider (ISP), a due date extension will be granted at the discretion of your Math-M105 instructor. If the problem recurs, you will be expected to work with your ISP to resolve the connection issues, without additional due date extensions.
- **On Campus Computer:** Please report the problem immediately to the IU Kokomo Math Lab coordinator, in person, in KO 054, by phone (765-455-9496) or by email (ptupa@iuk.edu). Your message should include your name and the name of your course and instructor, as well the location of the machine and a description of the problem encountered.

## APPENDIX D: IMPORTANT DATES:

### FLAGS: Student Engagement Roster:

The Student Engagement Roster (SER; aka FLAGS) is IU’s online platform where faculty inform students of their progress in each course. Constructive feedback will be given to you on your attendance and overall course performance. Recommendations will also be given that suit your progress. You can use the feedback to reach out to campus offices and services for resources and support. **Please see the course schedule for the exact dates of feedback.** However, because the SER is a 24/7 live system, feedback may be reported whenever your instructor feels it may benefit you. When feedback is entered, you will receive notification via IU email containing a link to your report. Ask your instructor if you have questions about any notations posted.

- Sunday, January 25 (attendance only)
- Sunday, March 22
- Sunday, April 26

### WITHDRAWAL DATES AND POLICIES:

- If it becomes necessary to withdraw from M105, it is your responsibility to complete the necessary transaction by the official deadline.
- Indiana University students can complete the withdrawal electronically through the Student Center at one.iu.edu.
- The last day to withdraw with an automatic W is Sunday, March 22.
- The last day to withdraw is April 26. Your instructor will approve the withdrawal with an F or W.
- No Schedule Adjustment forms will be signed/e-approved after Sunday, April 26.

## Appendix E: Academic and Personal Conduct Policy:

- Please turn ALL electronic communication devices to vibrate before the start of class (cell phones, pagers, laptop computers, tablets, etc.). Receiving or sending messages (voice, text, photo or video) on these devices during class is considered a disruptive behavior and can also lead to a charge of academic dishonesty.
- **All online quizzes, graded homework assignments and in-class tests are to be your work alone.** Any evidence of cheating will be dealt with according to the Indiana University Code of Student Ethics. Students are expected to adhere to the Code of Ethics regarding classroom conduct. Any inappropriate behavior, disorderly conduct, or non-compliance with faculty directions can result in a charge of Academic and/or Personal Misconduct, which may result in a lowering of a course grade, course failure, or requirement to withdraw.
- **Use of computer algebra systems (CAS) to generate OR check answers to the online homework, graded homework, skill practice sets or quiz questions is NOT permitted and is considered cheating.** This includes the use of the CAS provided in the TI-89 and TI-Nspire CAS calculators as well as the numerous “math help” websites.
- You are permitted to work with your classmates on exercises from the online homework assignments, textbook exercises and skill practice sets. When you are working in the IU Kokomo Math Computer Classroom (KO 054) you should ask the lab tutors to assist you so your classmates can use their time to complete their work.

- The use of a calculator accessed through a mobile device (cell phone, tablet, etc.) is NOT permitted during in-class tests. **All electronic communication devices (cell phones, pagers, tablets, laptop computers, etc.) must be turned off or set to vibrate and should be placed in a book bag or under your desk while you are taking a test.** ANY USE OF THESE DEVICES DURING A TEST WILL BE CONSIDERED CHEATING AND YOU WILL NOT BE ALLOWED TO COMPLETE THE TEST. The instructor will relay any messages that have been sent by the IU Alert system.
- Students are expected to adhere to the Code of Ethics regarding classroom conduct.
  - Any inappropriate behavior, disorderly conduct, or non-compliance with faculty directions can result in a charge of Academic and/or Personal Misconduct, which may result in a lowering of a course grade, course failure, or requirement to withdraw.
  - Please be courteous to your classmates while working in the IU Kokomo Math Lab (KO 054).
  - Refrain from unnecessary conversations during your Math Lab session.
  - Please avoid using excessive amounts of perfume or after shave, as some students are very sensitive to these scents.
- Help us to protect the computers and maintain a space that is conducive to studying.
  - Food of any type is not permitted in the Math Lab.
  - If you bring a beverage, it must be in a container with a spill-proof lid. All “fountain type” cups with plastic lids and straws must be left on the provided space at the entrance to the room.
  - Tobacco and related products (vaporizers & e-cigarettes) are strictly prohibited on Indiana University property
- Go to <http://studentcode.iu.edu> for details about student rights, responsibilities and conduct.

## APPENDIX F: Course Delivery Definitions

Your instructor may be teaching via either Hybrid (HY) or Distance Education (DO) approach. Below are the definitions of each method:

### Hybrid courses (HY):

This course will be in person (on campus) and online. When on campus, please wear a mask and practice physical distancing. Students with a **[Monday/Tuesday]** Math Lab Session will meet in person (on campus) on that day and join the class synchronously online through Zoom on **[Wednesday/Thursday]**. Students with a **[Wednesday/Thursday]** Math Lab Session will meet in person (on campus) on that day and join the class synchronously online through Zoom on **[Monday/Tuesday]**. After November 21, 2020, all class meetings will be online, where your instructor will direct you to synchronous or asynchronous learning. All office hours and scheduled one-on-one student/instructor meetings will be scheduled on Zoom.

The health and well-being of you and your classmates are priority; therefore, attendance will be taken, and a seating chart will be used for purposes of contact tracing. If you are not feeling well, please do not attend an on-campus class meeting and communicate with your instructor for alternate options. Reasons involving COVID may require medical documentation to receive accommodations.

### Distance Education (DO):

This course will be online synchronous (where we will meet at our scheduled day/time(s) weekly on Zoom) for the entire semester, with the exception of tests. All office hours and scheduled one-on-one meetings will be scheduled on Zoom. If you are not able to attend an online class meeting due to reasons involving COVID, you may be required to provide medical documentation to receive extended arrangements. The health and well-being of you and your classmates are priority; therefore, attendance will be taken.

Tests will be proctored on the IU Kokomo campus in the Math Lab, KO-054, during your regularly scheduled Math Lab session. When on campus, please wear a mask and practice physical distancing. See Canvas for your group assignment. Attendance will be taken on test days, and a seating chart will be used for purposes of contact tracing. If you are not feeling well, please do not attend an on-campus test and communicate with me for alternate options. Reasons involving COVID may require medical documentation to receive extended arrangements.

## APPENDIX D: Important Campus Services and Links

### Accessibility Services:

<http://www.iu.edu/%7Eada/syllabus/index.shtml>



## Important information about safety on campus:

<https://www.iuk.edu/academic-affairs/academic-resources/sexual-misconduct-statement.html>

## Student handbook:

<http://www.iuk.edu/advising/handbook/>

## Civility Statement

<https://www.iuk.edu/academic-affairs/academic-resources/civility-statement.html>

## Student in Crisis Fund:

The purpose of this fund is to assist current IU Kokomo students who are in a situation that poses a threat to their health, safety, and/or well-being. Recipients are limited to receiving help up to once per calendar year, with a maximum \$200 disbursement, or at the committee's recommendation per student situation. If you would like to request assistance, please visit the Professional Staff Council website at <http://www.iuk.edu/psc/crisis-fund.php> and submit the application, or visit the Financial Aid Office in the Kelley Center, Room 230.

## APPENDIX F: Math-M105 Course topics

### Modeling and solving real world applications using linear, quadratic, rational and radical equations:

- Students will be able to translate a verbal problem into mathematical symbols.
- Students will be able to solve the mathematical problem that models the verbal problem, using appropriate algebraic or technological methods.
- Students will be able to use the solution of the mathematical problem to draw valid conclusions about the verbal problem.
- Students will be able to write algebraic representations for non-linear functional relationships that are described verbally.
- Students will be able to use non-linear functions to analyze and interpret the relationships represented.

### Finding solutions of equations:

- Students will be able to solve polynomial equations using factoring.
- Students will be able to solve rational equations that are reducible to linear or quadratic equations, including equations with extraneous solutions.
- Students will be able to solve absolute value equations.
- Students will be able to use graphing technology to estimate solutions of polynomial equations.

### Finding solutions of inequalities in one or two variables:

- Students will be able to use algebraic techniques to solve absolute value inequalities.
- Students will be able to interpret the solution of absolute value inequalities in the context of real world applications.
- Students will be able to graph the solutions to linear inequalities in two variables.
- Students will be able to graph feasible sets for systems of linear inequalities on paper and using graphing technology.
- Students will be able to identify the ordered pairs of the vertices of a feasible set using algebraic techniques.
- Students will be able to use algebraic techniques to solve polynomial and rational inequalities.

### Radical functions and expressions and rational exponents:

- Students will be able to evaluate radical functions and to identify when the function value is not a real number.
- Students will be able to identify the domain of radical functions.
- Students will be able to use absolute value notation correctly when simplifying radical expressions with an even index.
- Students will be able to writing radical expressions using rational exponents and vice versa.
- Students will be able to simplify expressions with rational exponents.
- Students will be able to simplify radical expressions by converting to rational exponent form.
- Students will be able to simplify radical expressions by factoring.
- Students will be able to multiplying radical expressions, with the product expressed in simplified form.
- Students will be able to identify like radical expression and use them to add and subtract and radical expressions, with the results expressed in simplified form.
- Students will be able to divide radical expressions, with the results expressed in simplified form.

### Functions:

- Students will be able to identify relations which are functions, when the relations are represented verbally, as sets of ordered pairs or in graphical form.
- Students will be able to use linear functions to analyze and interpret the relationships represented in graphical form, tabular form or equation form.

- Students will be able to identify the domain and range of functions that are represented with a graph, as a set of ordered pairs, or in verbal form.
- Students will be able to identify the domain of rational and radical functions.
- Students will be able to determine the value of linear, rational, polynomial and radical functions using the equation form of the function, including inputs in variable form.
- Students will be able to determine the value of a function using its graph or tabular representation.
- Students will be able to determine the input corresponding to a particular function output, using the equation form of the function (linear or quadratic), the graph or a table.
- Students will be able to write new functions using the algebra of functions.
- Students will be able to identify the domain of the polynomial and rational functions resulting from the addition, subtraction, multiplication or division of other polynomial and rational functions.

#### Polynomial operations:

- Students will be able to use the correct terminology to describe polynomial functions.
- Students will be able to evaluate polynomial functions for numeric and variable inputs.
- Students will be able to perform operations of addition, subtraction, and multiplication with polynomials.
- Students will be able to simplify expressions with integer exponents.
- Students will be able to factor quadratic and quadratic-type trinomials with a leading coefficient not restricted to 1.
- Students will be able to recognize perfect square trinomials, differences of squares, sums and differences of cubes.
- Students will be able to factor perfect square trinomials, differences of squares, sums and differences of cubes.
- Students will be able to identify and use the greatest common factor to write a polynomial in factored form, including a GCF containing binomial factors.
- Students will be able to use the grouping method to factor a polynomial with four terms, including those in the polynomial reduces to a difference of two squares.
- Students will be able to factor a polynomial expression completely, by applying two or more factoring techniques.
- Students will be able to identify quadratic trinomials that are prime.
- Students will be able to use algebraic techniques to solve factorable polynomial equations.

#### Rational expressions:

- Students will be able to simplify rational expressions using algebraic techniques.
- Students will be able to compute the sum, difference, product or quotient of rational expressions.
- Students will be able to find the simplified form of complex fractions, including those expressed with variables raised to negative powers.
- Students will be able to use algebraic techniques to solve rational equations that are reducible to factorable polynomial equations.
- Students will be able to use algebraic techniques to solve formulas in more than one variable, with rational expressions.

#### Radical functions and expressions and rational exponents:

- Students will be able to evaluate radical functions and to identify when the function value is not a real number.
- Students will be able to identify the domain of radical functions.
- Students will be able to use absolute value notation correctly when simplifying radical expressions with an even index.
- Students will be able to writing radical expressions using rational exponents and vice versa.
- Students will be able to simplify expressions with rational exponents.
- Students will be able to simplify radical expressions by converting to rational exponent form.
- Students will be able to simplify radical expressions by factoring.
- Students will be able to multiplying radical expressions, with the product expressed in simplified form.
- Students will be able to identify like radical expression and use them to add and subtract and radical expressions, with the results expressed in simplified form.
- Students will be able to divide radical expressions, with the results expressed in simplified form.