

MATH 083

Intermediate Algebra

0 Credits, 3 Billable Hours

Community College of Baltimore County
Common Course Outline

Description

MATH 083 – Intermediate Algebra: covers polynomial expression factoring, rational expressions and equations, radicals, quadratic equations, complex numbers, functions and relations, and exponential and logarithmic functions.

Pre-requisites: MATH 082 or a satisfactory score on the math placement test

Overall Course Objectives

Upon completion of this course, students will be able to:

1. simplify and perform algebraic operations on quadratic expressions, including factoring;
2. simplify and perform algebraic operations on rational expressions;
3. simplify and perform algebraic operations on radical expressions and variable expressions with rational exponents;
4. identify and perform operations on complex numbers;
5. recognize and evaluate exponential and logarithmic expressions;
6. solve quadratic equations and applications;
7. solve rational equations, including proportion and variation applications;
8. solve radical equations;
9. identify functions and use function notation;
10. perform algebraic operations on functions;
11. graph and recognize the graphs of quadratic, exponential, and logarithmic functions; and
12. determine the domain and range of functions

Major Topics

- I. Relations and Functions
 - a. Identify a relation and specify its domain and range
 - b. Identify a function and specify its domain and range
 - c. Recognize and use function notation
 - d. Perform algebraic operations on functions
- II. Polynomial Expressions and Equations
 - a. Identify monomial and binomial greatest common factors
 - b. Factor polynomial expressions using various methods
 - c. Solve polynomial equations
- III. Rational Expressions and Equations
 - a. Simplify rational expressions and identify where these expressions are undefined

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For more information, see your professor's syllabus.

- b. Perform algebraic operations on rational expressions
 - c. Solve rational equations and proportions using various methods
 - d. Solve applications using variation
- IV. Radical Expressions and Equations
- a. Simplify and evaluate roots and other radical expressions
 - b. Recognize and simplify expressions with rational exponents
 - c. Utilize algebraic properties to perform algebraic operations on radical expressions
 - d. Rationalize a monomial denominator
 - e. Identify and perform algebraic operations on complex numbers
 - f. Solve radical equations
- V. Quadratic Expressions, Equations, and Functions
- a. Factor and simplify quadratic expressions
 - b. Solve quadratic equations using various methods
 - c. Recognize the graph of quadratic functions and identify domain and range
 - d. Graph quadratic functions using axis of symmetry, vertex, and intercepts
 - e. Solve applications involving quadratic functions
- VI. Exponential and Logarithmic Expressions, Equations, and Functions
- a. Explore relationship between exponential and logarithmic expressions
 - b. Simplify and evaluate exponential and logarithmic expressions
 - c. Recognize and graph exponential and logarithmic functions
 - d. Identify domain and range of exponential and logarithmic functions
 - e. Use exponential properties to solve basic exponential and logarithmic equations
 - f. Solve applications involving exponential and logarithmic equations

Course Requirements

Grading will be determined by the individual faculty member, but shall include the following, at minimum:

- a cumulative final exam
- two other assessments which may include but are not limited to quizzes, homework or classwork

Students must have an overall average of at least 70% to pass this course.

Date Revised: 1/20/2026

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