

Math 100: I E, EDIA E ALGEBRA (4-0-4)
 Fall 2015

Catalog Description: This course covers the topics of real numbers, operations on real numbers, properties of real numbers, and the real number system. It also covers the topics of complex numbers, operations on complex numbers, and the complex number system.

Prerequisites: Algebra 70 or equivalent.

Course Objectives: After completing this course, students should be able to:

1. Perform operations on real numbers.
2. Simplify expressions involving real numbers.
3. Solve equations and inequalities involving real numbers.
4. Apply properties of real numbers.

Learning Outcomes and Performance Criteria

1. Perform operations on real numbers.
 - (a) Add, subtract, multiply, and divide real numbers.
 - (b) Simplify expressions involving real numbers.
 - (c) Evaluate expressions involving real numbers.
 - (d) Solve equations and inequalities involving real numbers.
 - (e) Apply properties of real numbers.
2. Simplify expressions involving real numbers.
 - (a) Simplify expressions involving real numbers.
 - (b) Simplify expressions involving real numbers.
 - (c) Simplify expressions involving real numbers.
 - (d) Simplify expressions involving real numbers.
 - (e) Simplify expressions involving real numbers.
3. Solve equations and inequalities involving real numbers.
 - (a) Solve equations and inequalities involving real numbers.
 - (b) Solve equations and inequalities involving real numbers.
 - (c) Solve equations and inequalities involving real numbers.
 - (d) Solve equations and inequalities involving real numbers.
 - (e) Solve equations and inequalities involving real numbers.
4. Apply properties of real numbers.
 - (a) Apply properties of real numbers.
 - (b) Apply properties of real numbers.
 - (c) Apply properties of real numbers.
 - (d) Apply properties of real numbers.
 - (e) Apply properties of real numbers.

- () $e^{-x} \sin x$ 是 $e^{-x} \cos x$ 的导数.
- () $\frac{1}{x}$ 是 $\ln x$ 的导数.
- (*) $\frac{1}{x}$ 是 e^x 的导数.
- () $\frac{1}{x}$ 是 e^{-x} 的导数.
- (*) $\frac{1}{x}$ 是 $\ln x$ 的导数.

3. 求下列函数的导数:

- () $y = \ln x$ 的导数.
- () $y = x^2$ 的导数.
- (*) $y = \frac{1}{x}$ 的导数.
- () $y = \ln |x|$ 的导数.
- () $y = \ln x^2$ 的导数.
- (*) $y = \ln x$ 的导数.