

LSU Dual Enrollment Program for Math

Math 1015 Basic Mathematics COURSE PROFILE 7-12-2026

LA BOARD OF REGENTS COMMON COURSE NUMBER: CMAT 1203 Applied Algebra

ETEXT: *Algebra & Trigonometry with Interactive Assessments, 4e, MyLab Math*, Kirk Trigsted

HIGH SCHOOL COURSE CODE: 160375

CHAPTERS

R – Review

1 – Equations, Inequalities, and Applications

2 – The Rectangular Coordinate System, Lines, and Circles

3 – Functions

5 – Exponential and Logarithmic Functions and Equations

6 – Introduction to Trigonometric Functions

9 – Applications of Trigonometry

12 – Systems of Equations

The number in parentheses indicates the number of homework exercises on that topic in MyLab Math.

Chapter R: Review

Section R.2 A Review of Fractions and the Order of Operations (28)

Use the properties of real numbers to rewrite expressions

Use the order of operations to simplify numeric and algebraic expressions

Evaluate algebraic expressions for given values of variables

Section R.3 The Properties of Integer Exponents (25)

Simplify exponential expressions using the product rule

Simplify exponential expressions using the quotient rule

Simplify exponential expressions using the product-to-power rule

Write expressions using positive exponents using the negative-power-rule

Simplify exponential expressions using the appropriate rule or combination of rules

Section R.5 Polynomials (20)

Add and subtract polynomials

Multiply polynomials

Section R.7 Factoring Polynomials (30)

Factor polynomials by factoring out a greatest common factor

Factor polynomials by grouping

Factor trinomials with a leading coefficient equal to one

Factor trinomials with leading coefficient not equal to one

Factor using special formulas

Section R.8 Rational Expressions (18)

- Simplify rational expressions
- Multiply and divide rational expressions
- Add and subtract rational expressions with unlike denominators
- Simplify complex rational expressions

Sections R.4 and R.6 Radicals and Rational Expressions (28)

- Use the definition for rational expressions of the form $a^{\frac{m}{n}}$ to rewrite expressions
- Simplify expressions of the form n^{th} root of a^n
- Simplify expressions involving rational exponents
- Simplify radical expressions using the product rule for radicals
- Add and subtract radical expressions
- Multiply radical expressions
- Rationalize denominators of radical expressions

Chapter 1: Equations, Inequalities, and Applications

Section 1.1 Linear and Rational Equations (22)

- Determine whether equations are linear or nonlinear
- Solve linear equations with integer coefficients
- Solve linear equations involving fractions
- Solve rational equations that lead to linear equations

Section 1.2 Applications of Linear Equations and Rational Equations (16)

- Solve applications involving unknown numeric quantities
- Solve applications involving geometric formulas
- Solve applications involving decimal equations
- Solve applications involving uniform motion
- Solve applications involving rates of work

Section 1.4 Quadratic Equations (26)

- Solve quadratic equations by factoring
- Solve quadratic equations using the square root property
- Solve quadratic equations by completing the square
- Solve quadratic equations by using the quadratic formula

Section 1.6 Other Types of Equations (16)

- Solve higher-order polynomial equations
- Solve equations that are quadratic in form
- Solve equations involving radicals

Section 1.7 Linear Inequalities in One Variable (21)

- Convert between set-builder and interval notation and graph sets on number lines
- Solve linear inequalities in one variable
- Solve three-part inequalities in one variable
- Solve compound inequalities in one variable

Section 1.9 Polynomial and Rational Inequalities (17)

- Solve polynomial inequalities

Solve rational inequalities

Chapter 2: The Rectangular Coordinate System, Lines, and Circles

Section 2.1 The Rectangular Coordinate System (11)

Find midpoints or endpoints of line segments using the midpoint formula

Find distances between two points using the distance formula

Section 2.3 Lines (22)

Find the slopes of lines that pass through two given points

Find the point-slope form of a line

Find the slope-intercept form of a line

Find equations of lines that pass through two given points

Find equations of horizontal lines and vertical lines

Sketch graphs of equations

Find the slope and the y-intercept of lines in standard form

Section 2.4 Parallel and Perpendicular Lines (7)

Determine whether two lines are parallel, perpendicular, or neither

Chapter 3: Functions

Section 3.1 Relations and Functions (15)

Find the domain and range of relations, and determine if relations represent functions

Evaluate functions at given values

Classify functions as polynomials, rational functions, or root functions, and find their domains

Chapter 5: Exponential and Logarithmic Functions and Equations

Section 5.1a Exponential Functions (15)

Evaluate exponential expressions

Sketch the graphs of exponential functions

Solve exponential equations by relating the bases

Section 5.2 Logarithmic Functions (12)

Change equations between exponential form and logarithmic form

Use properties of logarithms to evaluate expression

Section 5.3 Properties of Logarithms (18)

Expand and evaluate logarithmic expressions using properties of logarithms

Condense and evaluate logarithmic expressions using properties of logarithms

Use the change of base formula to approximate logarithmic expressions

Section 5.4 Exponential and Logarithmic Equations (10)

Solve exponential equations

Solve logarithmic equations

Section 5.5 Applications of Exponential and Logarithmic Functions (14)

Solve applications involving compound interest

Solve applications involving exponential growth and decay

Chapter 6: An Introduction to Trigonometric Functions

Section 6.1 An Introduction to Angles: Degree and Radian Measure (31)

- Draw angles in standard position using degree measure
- Find coterminal angles using degree measure
- Draw angles in standard position using radian measure
- Convert between degree measure and radian measure
- Find coterminal angles using radian measure

Section 6.4 Right Triangle Trigonometry (24)

- Evaluate trigonometric functions of an acute angle in a right triangle
- Use special right triangles to evaluate trigonometric expressions
- Use the fundamental trigonometric identities to evaluate trigonometric expressions
- Evaluate trigonometric functions

Section 6.5 Trigonometric Functions of General Angles (35)

- Identify which of the four families of special angles a given angle belongs to
- Find the six trigonometric functions of an angle given a point lying on its terminal side
- Find value of the trigonometric functions of quadrantal angles
- Determine the quadrants where a trigonometric function is positive and negative
- Find the trigonometric function values given another function value
- Determine reference angles
- Evaluate trigonometric functions of angles belonging to the $\frac{\pi}{3}$, $\frac{\pi}{4}$, and $\frac{\pi}{6}$ families

Chapter 9: Applications of Trigonometry

Section 9.1 Right Triangle Applications (10)

- Solve right triangles
- Solve applications involving right triangles

Section 9.2 The Law of Sines (13)

- Determine if the Law of Sines can be used to solve an oblique triangle
- Use the Law of Sines to solve the SAA case or ASA case
- Use the Law of Sines to solve the SSA case

Section 9.3 The Law of Cosines (13)

- Determine whether Law of Sines or Cosines should be used to solve an oblique triangle
- Use the Law of Cosines to solve the SAS case
- Use the Law of Cosines to solve the SSS case
- Use the Law of Cosines to solve applications involving oblique triangles

Section 9.4 Area of Triangles (11)

- Determine the area of oblique triangles
- Use Heron's Formula to determine the area of an SSS triangle
- Solve applications involving the area of triangles

Chapter 12: Systems of Equations and Inequalities

Section 12.1 Systems of Linear Equations in Two Variables (9)

Determine whether ordered pairs are solutions to systems of linear equations in two variables

Solve systems of linear equations in two variables using the substitution method

Solve systems of linear equations in two variables using the elimination method

Solve systems of linear equations in two variables using either substitution or elimination

Section 12.6 Systems of Inequalities (11)

Graph linear inequalities in two variables

Graph systems of linear inequalities in two variables