

School of Mathematics, Sciences & Engineering Transfer
ALGB 087 - Introductory Algebra I Lecture
COURSE OBJECTIVES

Chapter 1A: Introduction to Real Numbers and Algebraic Expression

1. Evaluate variable expressions.
2. Translate phrases to algebraic expressions.
3. Solve problems involving order.
4. Find the absolute value of a number.
5. Evaluate expressions involving addition of signed numbers. (2)
6. Find the opposite of a number.
7. Evaluate expressions involving subtraction of signed numbers. (2)
8. Simplify numeric expressions.

Chapter 1B: Introduction to Real Numbers and Algebraic Expression

1. Evaluate expressions involving multiplication signed numbers.
2. Evaluate expressions involving multiplication or more than two signed numbers.
3. Evaluate expressions involving division of signed numbers.
4. Find the reciprocal of a number.
5. Divide signed fractions.
6. Remove common factors from an expression.
7. Combine like terms.
8. Apply distributive law to expand a product.
9. Simplify expressions involving grouping symbols.
10. Apply order of operations to evaluate an expression.

Chapter 2A: Solving Equations and Inequalities

1. Solve equations of the form $x + a = b$.
2. Solve equations of the form $x - 2.4 = 5.7$.
3. Solve equations of the form $a x = b$.
4. Solve equations of the form $a/x = b$.
5. Solve equations of the form $(a/b) x = c$.
6. Solve linear equations. (2)
7. Solve equations with parentheses.
8. Solve number word problems.
9. Solve other simple word problems.

Chapter 2B: Solving Equations and Inequalities

1. Find percent of a number.
2. Solve numeric problem involving percent.
3. Solve word problems involving percents.
4. Solve formula equation. (2)
5. Solve linear inequalities. (3)
6. Graph number line inequality.
7. Translate verbal statement to an inequality.

Chapter 3A: Graphs of Equations; Data Analysis

1. Locate the quadrant for a given point.
2. Determine if a given point satisfies an equation.
3. Find y given $ax + by = c$.
4. Find intercepts given an equation.
5. Find intercepts given a graph.
6. Given an equation determine its graph. (2)
7. Determine if an equation has a vertical line graph
8. Determine if an equation has a horizontal line graph.
9. Given a horizontal or vertical line graph, determine the equation.

Chapter 3B: Graphs, Slope, and Applications

1. Find the slope of the line through 2 points.
2. Find the slope given the equation of the line.
3. Find the equation of the line given a point and the slope.
4. Find the equation of the line through 2 points.
5. Identify parallel and perpendicular lines given the equations of 2 lines.

Chapter 3C: Systems of Equations

1. Determine if a point is a solution to a system of equations
2. Determine whether paired lines are the same, parallel, or intersecting at one point.
3. Solve a system of equations by the substitution method.
4. Solve a system of equations by the elimination method.
5. Solve mixture problems.
6. Solve perimeter problems and coin/value problems.

Chapter 4A: Polynomials: Operations

1. Evaluate exponential expressions.
2. Evaluate x^0 .
3. Simplify expressions involving negative exponents.
4. Multiply like bases.
5. Divide like bases.
6. Express a number in scientific notation.
7. Apply exponent laws to simplify an expression.
8. Collect like terms.
9. Add polynomials.
10. Subtract polynomials.

Chapter 4B: Polynomials: Operations

1. Multiply monomials.
2. Multiply binomials.
3. Multiply the difference of two squares.
 1. Multiply perfect squares.
5. Evaluate polynomials involving more than one variable.
6. Collect like terms for expressions involving more than one variable.
7. Multiply binomials for expressions involving more than one variable. (2)
8. Divide a monomial by a monomial.
9. Divide a polynomial by a monomial.