

ALGEBRA 1 Topics – Semester 1 (Chapters 1-6)

CHAPTER 1

- Model relationships with variables and equations.
- Simplify and evaluate expressions and formulas.
- Classify and compare numbers.
- Write a function rule.
- Analyze data using scatter plots.
- Find mean, median, and mode.

CHAPTER 2

- Add, subtract, multiply, and divide real numbers.
- Use the distributive property.
- Identify properties.

CHAPTER 3

- Use inverse operations to solve simple equations.
- Identify equations that are Identities or have no solutions.
- Solve proportions.
- Solve Distance-Rate-Time, Consecutive Integers, and Perimeter problems.
- Find Percent of Change.

CHAPTER 4

- Graph and write inequalities.
- Use inverse operations to solve simple inequalities and compound inequalities.
- Solve absolute value equations and inequalities.

CHAPTER 5

- Identify relations and functions.
- Evaluate functions.
- Model functions using function rules, tables, and graphs.
- Write a function rule given a table or real-world situation.
- Write an equation of a Direct variation.
- Solve Inverse variation.
- Compare Direct and Inverse variation.

CHAPTER 6

- Find rates of change from tables and graphs.
- Find slope.
- Graph and write linear equations using slope-intercept form and point-slope form.
- Write equations in standard form.
- Graph equations in standard form using x- and y-intercepts.
- Determine whether lines are parallel, perpendicular, or neither.

ALGEBRA 1 Topics – Semester 2 (Chapters 7-12)

CHAPTER 7 – SOLVING SYSTEMS

- Solve systems of equations by graphing, substitution, and elimination.
- Graph linear inequalities.
- Solve systems of linear inequalities by graphing.

CHAPTER 8 – EXPONENTS

- Simplify expressions with zero and negative exponents.
- Evaluate exponential expressions.
- Write numbers in scientific and standard notation.
- Use and work with scientific notation.
- Multiply and divide powers with the same base.
- Raise a power, a product, and a quotient to a power.
- Evaluate and graph exponential functions.

CHAPTER 9 – POLYNOMIALS

- Describe, add, and subtract polynomials.
- Multiply a polynomial by a monomial.
- Factor a monomial from a polynomial.
- Multiply binomials using FOIL and distributive property.
- Multiply trinomials and binomials.
- Find the square of a binomial.
- Find the difference of squares.
- Factor trinomials and special cases (perfect square trinomials and difference of squares).
- Factor polynomials with four terms by grouping.

CHAPTER 10 – QUADRATICS

- Graph quadratic functions and inequalities.
- Find square roots.
- Solve quadratic equations by graphing, square roots, factoring, completing the square, and the quadratic formula.
- Use the discriminant to find the number of solutions of a quadratic equation.

CHAPTER 11 – RADICALS (square roots)

- Simplify radicals involving products and quotients.
- Simplify sums, differences, products and quotients with radical expressions.
- Solve equations containing radicals and identify extraneous solutions.
- Graph square root functions.

CHAPTER 12 – RATIONALS (fractions)

- Graph rational functions.
- Identify types of functions (linear, quadratic, absolute value, exponential, square root, and rational).
- Simplify, multiply, and divide rational expressions.
- Divide polynomials using long division.
- Add and subtract rational expressions with like and unlike denominators.
- Solve rational equations and proportions.

For Multiple Choice Practice problems go to PHSchool.com – Pearson Math – Textbook Companion Sites