



DOMINICAN ACADEMY

Where Smart Girls Become Intelligent Women

Honors Algebra I Course Description--2019-2020

1. The elements of Algebra

- a. Algebraic Properties
- b. Order of Operations

2. Writing and Solving Linear Equations and Inequalities

- a. Solving Linear Equations
- b. Solving Rational Equations Using the least common denominator
- c. Solving for a variable in literal equations
- d. Proportions
- e. Modeling with linear equations
- f. Interval and Set Notation
- g. Solving Inequalities
- h. Modeling with Inequalities
- i. Solving Absolute value equations

3. Operations with Polynomials

- a. Adding and subtracting polynomials
- b. Multiplying a Monomial by a Monomial
- c. Multiplying a polynomial by a monomial
- d. Multiplying a polynomial by a polynomial
- e. Negative integers and exponents
- f. Rational exponents and radicals
- g. Dividing polynomials

4. Special Products and Factoring

- a. Greatest Common factors
- b. Factoring the difference of two squares
- c. Factoring quadratic expressions when $a = 1$
- d. Factoring quadratic expressions by grouping when $a > 1$
- e. Factoring completely

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5. Quadratic Equations

- a. Standard form of the quadratic equation
- b. Solving quadratic equations by factoring
- c. Solving quadratic equations by completing the square
- d. Solving quadratic equations using the quadratic formula
- e. Modeling with quadratic equations

6. Graphing Linear Equations, Inequalities and Functions

- a. Relations and functions
- b. Domain and range
- c. Function notation
- d. Graphing linear equations
- e. Slope of a line/rate of change
- f. Writing equations using slope intercept
- g. Graphing Linear Inequalities

7. Systems of Linear Equations and Inequalities

- a. Solving systems of linear equations by graphing
- b. Solving systems of linear equations by substitution
- c. Solving systems of linear equations by elimination
- d. Solving systems of linear inequalities by graphing

8. Graphing Quadratic Functions

- a. Properties of quadratic functions
- b. Graphing quadratic functions of the form $ax^2 + bx + c$

9. Solving Quadratic Linear Systems of Equations

- a. Solving Quadratic Linear Systems of Equations by graphing
- b. Solving Quadratic Linear Systems of Equations algebraically