



Academia Santa Rosa de Lima

Bayamón, Puerto Rico

Academiasantarosa@asrpr.org

Academic Syllabus-Algebra 2-Bilingual Tenth -2023-2024

- I. Algebra 2
- II. Teacher Brenda Oliver - boliver@asrpr.org
- III. Textbook - EduSystem-Algebra 2
- IV. Office hours - Please contact the Office for appointments
- V. Course Description and Introduction

. This course will emphasize the area of Algebra and Functions standards, integrating the areas of Numbering and Operation, Geometry and Data Analysis, and Probability. The function concept and the graphical representation of quadratic, polynomial, rational, exponential and logarithmic functions. We will work with the concepts of linear regression, curve of normal distribution, imaginary number, complex number and their properties, as well as rational expressions, operations with radicals and complex numbers. In addition, the simplification of expressions with rational exponents will be studied. Students will work with the concepts of the right triangle, trigonometric ratios, distance, scales, and sequences. In this course, the mathematical processes of problem solving, communication, representations, and connections are emphasized. However, we recognize that all mathematical processes are intertwined in any learning situation. Mathematics learning is facilitated when students solve problems, communicate, reason and recognize the connections of matter, make representations and their relationship with other fields of knowledge and with daily life. These five processes facilitate the learning of concepts and skills involved in the Number and Operation, Algebra, Functions, Geometry, and Data Analysis and Probability standards (Puerto Rico Core Standards - PRCS 2014).

VI. Course Objectives

- Use linear equations and inequalities to model and solve applications of real life and quantitative relationships.
- Recognize that the graph of an equation in two variables is the set of all solutions plotted on the Cartesian plane, often forming a curve (which can be a line).
- Interpret the slope (rate of change) and cut point (constant term) of a linear model according to the context of the data.
- Solve quadratic equations and inequalities of one and two variables representing the answer in various ways.
- Recognize the relationship between the coefficients of a quadratic function and characteristics of the graph (shape, position, intercepts, zeros, symmetry, vertex).
- Use their knowledge of quadratic functions to interpret, predict, and solve daily life situations.
- Work with equations and polynomial and rational expressions to model and solve problems of daily life.
- Will have the ability to use their learning independently to determine what “exact” the graph of a polynomial function looks like. graph functions expressed symbolically and shows the key features of the graph.
- Compare the properties of two functions, each represented differently (algebraically,

graphically, in a table of values, or described verbally).

- Recognize and apply the remainder and factor theorem and identify the zeros in polynomials when the factorizations are reasonable, and use the zeros to construct an approximate graph of the function defined by the polynomial.
- Use exponential and logarithmic functions to interpret and predict graphs and tables of exponential functions, as well as solving situations of daily life that don't limit yourself to linear and quadratic functions.
- Distinguish between situations that can be modeled with linear functions and with exponential functions

VII. Standards

Puerto Rico Degree Content Standards and Expectations

(Puerto Rico Core Standards):

NUMBERING AND OPERATION: The student is able to understand and apply mathematical concepts when representing, estimating, computing, relating numbers and number systems.

o 1.0 Use properties of rational and irrational numbers.

ES.N.1.1 Explain why the addition, subtraction, or product of two rational numbers is rational; and why the sum or product of a rational number and an irrational number is irrational.

o 2.0 Reason quantitatively and use units to solve problems.

ES.N.2.1 Define adequate quantities in order to make models descriptive.

ES.N.2.2 Choose the degree of precision appropriate to measurement constraints when reporting quantities

VIII. Strategies

- Defined instructional sequence repeatedly practicing skills individually and in small groups
- Consistent communication between student and teacher
- Promoting ongoing practice and feedback
- Formative and summative evaluations based on
 - Exams
 - Quizzes
 - Projects
 - Assignments
 - Daily participation

IX. Reasonable Accommodations

All reasonable accommodations for the particular needs of these students will be made in accordance with the Americans with Disabilities Act (ADA).

X. Cell Phone Policy

Students may not use cell phones during class unless explicitly approved by the teacher on a day specifically for instructional purposes. Upon entering the classroom, all students are to place their cell phone in their assigned area of the classroom or another assigned location specified at the front of the room by the teacher. Once placed in the cell phone/holder area, students may not access it during class hours, unless they have an early checkout from the college facility school.

XI. Computer Devices and Resources

Per school policy, personal computers must be fully charged and brought to each class period. Students will not be asked to charge school devices in the classroom and are not entitled to make up assignments missed due to dead batteries. Failure to charge devices constitutes a disruption of class procedures and may result in disciplinary action.

- XII. Materials
 EduSystem Platform
 Personal Computer
 Calculator
 Gridded Notebook
 Google Classroom Platform

XIII. Plagiarism

Plagiarism is presenting someone else's words or ideas as if they were entirely your own. Plagiarism is a violation of the Honor Code. Acts of plagiarism may include, but are not limited to: 1. Using words or ideas from a published source or from the Internet without proper permission; 2. Using another student's work (eg, copying another student's homework, composition, or project in whole or in part; 3. By excessive use of editing suggestions from another student, teacher, parent, or guardian or paid author.

XIV. Evaluation Criteria

- Exams- 3 per trimester
- Short tests and Quizzes
- worksheets or assessments
- Assignments
- Daily class 1 per semester

XV. Course Content

Unit	Lessons	
Equations and Inequalities	<ul style="list-style-type: none"> ● Expressions and Properties ● Linear Equations and Problem Solving ● Linear Inequalities and Problem Solving 	August
Relationships and Functions of the Straight Line	<ul style="list-style-type: none"> ● Relationships and Functions ● Linear Equations, Slopes and Intercepts ● Special Functions and Inequalities 	August/ September

Systems of Equations and Inequalities	<ul style="list-style-type: none"> ● Systems of Linear Equations ● Systems of Linear Inequalities and Linear Programming 	September/ October
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Polynomials	<ul style="list-style-type: none"> ● Monomials and Polynomials ● Factorization ● Polynomial and Synthetic Division 	November
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Quadratic Relationships and Functions	<ul style="list-style-type: none"> ● Parabolas ● Quadratic Inequalities and Problem Solving 	January/ February
Polynomial Functions	<ul style="list-style-type: none"> ● Functions and Factors ● Graph the Polynomial Function ● Composition and Inverse Functions 	February

Rational Expressions and Functions	<ul style="list-style-type: none"> ● Simplifying Rational Expressions ● Solving Problems with Rational Expressions ● Graph of the Rational Function and Variations 	March
Probability	<ul style="list-style-type: none"> ● Permutations and Combinations ● Binomial Probability and Development 	April
Statistics	<ul style="list-style-type: none"> ● Data Collection, Organization and Analysis ● Normal Data Dispersion and Distribution 	April
Trigonometric Functions and Identities	<ul style="list-style-type: none"> ● Trigonometric Functions and their Graphs' ● Trigonometric Identities 	May

This content layout is subject to changes due to the group's specific needs or other situations that may arise throughout the academic year.



Academia Santa Rosa de Lima
Bayamon, PR

I hereby confirm that I received the Syllabus for Algebra 2 for the school year 2023-2024.

Student's name: _____ Group: 9th B On August
_____, 2023.

Student's signature Parent's Signature
