# Algebra I

Bayou Academy

Mrs. Laura Little, Instructor

- Apply properties of real numbers to simplify algebraic expressions, including polynomials.
- Introduce matrices to solve mathematical situations and contextual problems.
- Understand, represent, and analyze patterns, relations, and functions.
- Solve, check, and graph multi-step linear equations and inequalities in one variable, including rational coefficients in mathematical and real-world situations.
- Solve and graph absolute value equations and inequalities in one variable.
- Analyze the relationship between x and y values, determine whether a relation is a function, and identify domain and range.
- Explain and illustrate how a change in one variable may result in a change in another variable and apply to the relationships between independent and dependent variables.
- Graph and analyze linear functions.
- Use algebraic and graphical methods to solve systems of linear equations and inequalities in mathematical and real-world situations.
- Add, subtract, multiply, and divide polynomial expressions.
- Factor polynomials by using Greatest Common Factor (GCF) and factor quadratics that have only rational roots.
- Determine the solutions to quadratic equations by using graphing, tables, completing the square, the Quadratic formula, and factoring.
- Justify why some polynomials are prime over the rational number system.
- Graph and analyze absolute value and quadratic functions.
- Write, graph, and analyze inequalities in two variables.
- Understand how algebra and geometric representations interconnect and build on one another.
- Apply the concept of slope to determine if lines in a plane are parallel or perpendicular.
- Solve problems that involve interpreting slope as a rate of change.
- Demonstrate and apply various formulas in problem-solving situations involving formulas for perimeter, area, distance, and rate.
- Explain and apply the appropriate formula to determine length, midpoint, and slope of a segment in a coordinate plane. (i.e., distance formula, Pythagorean Theorem).
- Represent polynomial operations with area models.
- Represent, analyze and make inferences based on data to draw conclusions and make predictions from scatter plots.
- Use linear regression to find the line-of-best fit from a given set of data.