Grade 11 (AAS): Algebra with Probability

Number and Quantity

Together, irrational numbers and rational numbers complete the real number system, representing all points on the number line, while there exist numbers beyond the real numbers called complex numbers.

1 Determine the value of a quantity that is squared or cubed. (Limited to perfect squares and perfect cubes). M.A.AAS.11.1

Algebra and Functions

Expressions can be rewritten in equivalent forms by using algebraic properties, including properties of addition, multiplication, and exponentiation, to make different characteristics or features visible.

2 Identify an algebraic expression involving addition or subtraction to represent a real-world problem. M.A.AAS.11.4

Expressions can be rewritten in equivalent forms by using algebraic properties, including properties of addition, multiplication, and exponentiation, to make different characteristics or features visible.

3 Solve simple algebraic equations using real world scenarios with one variable using multiplication or division. M.A.AAS.11.5

Finding solutions to an equation, inequality, or system of equations or inequalities requires the checking of candidate solutions, whether generated analytically or graphically, to ensure that solutions are found and that those found are not extraneous.

The structure of an equation or inequality (including, but not limited to, one-variable linear and quadratic equations, inequalities, and systems of linear equations in two variables) can be purposefully analyzed (with and without technology) to determine an efficient strategy to find a solution, if one exists, and then to justify the solution.

4 Identify equivalent expressions given a linear expression using arithmetic operations. M.A.AAS.11.9

	Expressions, equations, and inequalities can be used to analyze and make predictions, both within mathematics and as mathematics is applied in different contexts – in particular, contexts that arise in relation to linear, quadratic, and exponential situations.
	5 A) Select an equation or inequality involving one operation (limit to addition or subtraction) with one variable that represents a real-world problem. B) Solve the equation M.A.AAS.11.11
Data Analysis, Statistics, and Probability	**Mathematical and statistical reasoning about data can be used to evaluate conclusions and assess risks.**
	6 Make predictions and draw conclusions from two variable data based on data displays and apply the results to a real-world situation. M.A.AAS.11.32
	Making and defending informed, data-based decisions is a characteristic of a quantitatively literate person.
	7 When given a two-way table summarizing data on two categorical variables collected from the same subjects, identify possible association between the two variables. M.A.AAS.11.33
	Data arise from a context and come in two types: quantitative (continuous or discrete) and categorical. Technology can be used to "clean" and organize data, including very large data sets, into a useful and manageable structure—a first step in any analysis of data.
	8 Interpret general trends on a graph. (Limited to increase and decrease). M.A.AAS.11.35
	Data analysis techniques can be used to develop models of contextual situations and to generate and evaluate possible solutions to real problems involving those contexts.
	Conditional probabilities – that is, those probabilities that are "conditioned" by some known information – can be computed from data organized in contingency tables. Conditions or assumptions may affect the computation of a probability.
	9 When given a real-world scenario, choose the independent or dependent variable. Ex.: If I buy 2 coffees that cost $2.00 each, the total cost is $4. Which variable is independent? M.A.AAS.11.36
	Two events are independent if the occurrence of one event does not affect the probability of the other event. Determining whether two events are independent can be used for finding and understanding probabilities.