

Standards for First Benchmark Algebra 1

Cluster A. Perform arithmetic operations on polynomials.

**A1.A.APR.A.1** Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

Cluster Heading: A. Create equations that describe numbers or relationships

**A1.A.CED.A.3** Represent constraints by equations or inequalities and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.

* For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.

Cluster Heading: A. Create equations that describe numbers or relationships

A1.A.CED.A.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.

* i) Tasks are limited to linear, quadratic, and exponential equations with integer exponents.  
  ii) Tasks have a real-world context.

Cluster Heading: A. Understand solving equations as a process of reasoning and explain the reasoning.

**A1.A.REI.A.1** Explain each step in solving an equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.

* Tasks are limited to linear, quadratic, and absolute value equations with integer exponents.

Cluster Heading: C. Solve systems of equations.

**A1.A.REI.C.4** Write and solve a system of linear equations in context.

* Solve systems both algebraically and graphically. Systems are limited to at most two equations in two variables.

Cluster Heading: D. Represent and solve equations and inequalities graphically.

**A1.A.REI.D.5** Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line)

* Entire assessment assessed
* Cluster Heading: D. Represent and solve equations and inequalities graphically.

**A1.A.REI.D.7** Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

* Entire assessment assessed