Pennsylvania Mathematics

# Algebra 1 - Module 1

## Operations with Real Numbers and Expressions

**A1.1.1.1 A1.1.1.1 Represent and/or use numbers in equivalent forms (e.g., integers, fractions, decimals, percents, square roots, and exponents).**

- A Compare and/or order any real numbers. A1.1.1.1.1
- B Simplify square roots A1.1.1.1.2

**A1.1.1.2 Apply number theory concepts to show relationships between real numbers in problem- solving settings.**

- A Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials. A1.1.1.2.1

**A1.1.1.3 Use exponents, roots, and/or absolute values to solve problems.**

- A Simplify/evaluate expressions involving properties/laws of exponents, roots, and/or absolute values to solve problems. A1.1.1.3.1

**A1.1.1.4 Use estimation strategies in problem-solving situations.**

- A Use estimation to solve problems. A1.1.1.4.1

**A1.1.1.5 Simplify expressions involving polynomials.**

- A Add, subtract, and/or multiply polynomial expressions (express answers in simplest form). A1.1.1.5.1
- B Factor algebraic expressions, including difference of squares and trinomials. A1.1.1.5.2
- C Simplify/reduce a rational algebraic expression. A1.1.1.5.3

## Linear Equations

**A1.1.2.1 Write, solve, and/or graph linear equations using various methods.**

- A Write, solve, and/or apply a linear equation (including problem situations). A1.1.2.1.1
- B Use and/or identify an algebraic property to justify any step in an equation-solving process. A1.1.2.1.2
- C Interpret solutions to problems in the context of the problem situation. A1.1.2.1.3

**A1.1.2.2 Write, solve, and/or graph systems of linear equations using various methods.**

- A Write and/or solve a system of linear equations (including problem situations) using graphing, substitution, and/or elimination. A1.1.2.2.1

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B Interpret solutions to problems in the context of the problem situation. A1.1.2.2.2

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**Linear Inequalities**

**A1.1.3.1 Write, solve, and/or graph linear inequalities using various methods.**

A Write or solve compound inequalities and/or graph their solution sets on a number line (may include absolute value inequalities). A1.1.3.1.1

B Identify or graph the solution set to a linear inequality on a number line. A1.1.3.1.2

C Interpret solutions to problems in the context of the problem situation. A1.1.3.1.3

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**A1.1.3.2 Write, solve, and/or graph systems of linear inequalities using various methods.**

A Write and/or solve a system of linear inequalities using graphing. A1.1.3.2.1

B Interpret solutions to problems in the context of the problem situation. A1.1.3.2.2