# The Major Topics of School Algebra

The National Mathematics Advisory Panel Report identifies the major topics of school algebra.

## Selected Major Topics*

**Symbols and Expressions**
—Polynomial and rational expressions
—Arithmetic and finite geometric series

**Linear Equations**
—Real numbers as points on the number line
—Linear equations/inequalities and their graphs
—Systems of simultaneous linear equations

**Quadratic Equations**
—Factors/factoring of quadratic polynomials
—Completing the square in quadratic expressions
—Quadratic formula

**Functions**
—Linear, quadratic, and polynomial functions
—Nonlinear functions (e.g., square and cube root functions; absolute value; step functions)
—Exponential, logarithmic, and trigonometric functions

**Algebra of Polynomials**
—Roots and factorization of polynomials
—Complex numbers and operations
—Fundamental theorem of algebra

**Combinatorics and Finite Probability**
—Applications of the binomial theorem and Pascal's Triangle

## Topics of Algebra

—Teach for understanding of topics of school algebra

—Make linkages among topics

—Develop problem-solving skills

—Enhance teacher understanding

—Address misconceptions in learning algebra

## Multiple Paths

—Establish a course sequence to cover all topics of school algebra

—Provide multiple curricular pathways to ensure success

—Ensure that students are ready for algebra before enrolling them in algebra courses

—Provide opportunities for all students to learn school algebra

—Use the topics of school algebra to inform standards, instructional materials, and assessments

*For a complete list and the full report, please see: www.ed.gov/about/bdscomm/list/mathpanel/report/final-report.pdf

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