Prerequisites

1. Real numbers: algebra essentials
2. Exponents and scientific notation
3. Radicals and rational expressions
4. Polynomials
5. Factoring polynomials
6. Rational expressions

Equations and inequalities

1. The rectangular coordinate systems and graphs
2. Linear equations in one variable
3. Models and applications
4. Complex numbers
5. Quadratic equations
6. Other types of equations
7. Linear inequalities and absolute value inequalities

Functions

1. Functions and function notation
2. Domain and range
3. Rates of change and behavior of graphs
4. Composition of functions
5. Transformation of functions
6. Absolute value functions
7. Inverse functions

Linear functions

1. Linear functions
2. Modeling with linear functions
3. Fitting linear models to data

Polynomial and rational functions

1. Quadratic functions
2. Power functions and polynomial functions
3. Graphs of polynomial functions
4. Dividing polynomials
5. Zeros of polynomial functions
6. Rational functions
7. Inverses and radical functions
8. Modeling using variation

Exponential and logarithmic functions

1. Exponential functions
2. Graphs of exponential functions
3. Logarithmic functions
4. Graphs of logarithmic functions
5. Logarithmic properties
6. Exponential and logarithmic equations
7. Exponential and logarithmic models
8. Fitting exponential models to data

Systems of equations and inequalities

1. Systems of linear equations: two variables
2. Systems of linear equations: three variables
3. Systems of nonlinear equations and inequalities: two variables
4. Partial fractions
5. Matrices and matrix operations
6. Solving systems with gaussian elimination
7. Solving systems with inverses
8. Solving systems with Cramer's rule

Analytic geometry

1. The ellipse
2. The hyperbola
3. The parabola
4. Rotation of axis
5. Conic sections in polar coordinates

Sequences, probability and counting theory

1. Sequences and their notations
2. Arithmetic sequences
3. Geometric sequences
4. Series and their notations
5. Counting principles
6. Binomial theorem
7. Probability