

Prior to taking the Algebra 1 Challenge Test, the student should be able to:

- Simplify expressions before solving linear equations in one variable
- Add, subtract, multiply and divide real numbers
- Use the concept of adding the opposite in order to subtract real numbers
- Use the concept of finding the reciprocal to divide real numbers
- Follow instructions to take a root and raise to a fractional power
- Use the rules of exponents
- Write an equation from a statement
- Solve multi-step equations, including word problems, with simplifying expressions, with variables on both sides.
- Solve literal equations for a variable
- Solve absolute value equations
- Solve one-step and multi-step inequalities and graph their solutions
- Solve compound inequalities and graph their solutions
- Write a compound inequality from a graph
- Solve absolute-value inequalities
- Find the domain and range of a relation
- Identify and evaluate functions
- Graph a function by selecting points
- Graph scatter plots from given data by hand and using technology
- Graph linear Equations
- Find the intercepts of a line
- Find slope from a graph
- Find slope by using the slope formula
- Find slope from an equation
- Write, solve, and graph direct variation equations
- Write linear equations in slope-intercept form
- Use slope-intercept, slope and a point form to graph
- Write linear equations in slope-intercept form
- Write equations of parallel and perpendicular lines
- Identify solutions of systems
- Solve a system of linear equations by graphing, substitution, and elimination methods
- Classify systems as consistent or inconsistent and/or dependent or independent
- Solve the special application problems of rate, mixture, and number-digit
- Identify solutions of linear inequalities
- Solve, write, and graph linear inequalities in two variables
- Identify solutions of systems of linear inequalities
- Solve and graph systems of inequalities
- Evaluate and simplify expressions with zero and negative exponents
- Find products and quotients of powers
- Find powers of powers
- Rewrite a base with a fractional power as a radical
- Simplify expressions with fractional exponents
- Use properties of exponents to simplify expressions

- Find the degree of a monomial
- Write polynomials in standard form, classify polynomials,
- Identify roots of polynomials
- Add, subtract, and multiply polynomials
- Write the prime factorization of whole numbers
- Find the GCF of numbers and monomials
- Factor a polynomial using GCF, grouping, special products
- Solve equations by factoring
- Identify and graph an inverse variation
- Identify excluded values, asymptotes and graph rational functions
- Simplify rational expressions using multiplication, division, addition, and subtraction
- Solve rational equations
- Apply rational equations to real life situations