



## Topics Assessed on the Test for Placement into Geometry

Students will be asked to demonstrate that they are able...

- To write algebraic expressions.
- To simplify expressions involving exponents.
- To use the order of operations to evaluate expressions.
- To classify, graph, and compare real numbers.
- To find and estimate square roots.
- To operate on integers.
- To use the Distributive Property to simplify expressions.
- To solve equations in one variable.
- To solve equations and inequalities involving absolute values.
- To rewrite and use literal equations and formulas.
- To solve and apply proportions.
- To solve percent problems using proportions.
- To solve percent problems using percent equation.
- To write, graph, and identify solutions of inequalities.
- To solve inequalities.
- To determine whether a relationship is a function.
- To find domain and range and use function notation.
- To find slope.
- To write linear equations.
- To graph linear equations in two variables.
- To use linear inequalities when modeling real-world situations.
- To determine whether lines are parallel, perpendicular, or neither.
- To write equations of parallel lines and perpendicular lines.
- To solve systems of equations by graphing.
- To solve systems of equations.
- To solve systems of linear inequalities by graphing.
- To simplify expressions involving zero and negative exponents.
- To multiply powers with the same base.
- To raise a power to a power.
- To raise a product to a power.
- To divide powers with the same base.

- To raise a quotient to a power.
- To rewrite expressions involving radicals and rational expressions.
- To classify, add, and subtract polynomials.
- To multiply a monomial by a polynomial.
- To factor a monomial from a polynomial.
- To multiply two binomials or a binomial by a trinomial.
- To find the square of a binomial and to find the product of a sum and difference.
- To factor trinomials of the form  $x^2 + bx + c$ .
- To factor trinomials of the form  $ax^2 + bx + c$ .
- To factor perfect-square trinomials and the differences of two squares.
- To factor higher-degree polynomials by grouping.

The following topics should also be mastered prior to beginning Geometry but are not assessed on this test:

Students will be expected to be able...

- To graph quadratic functions of the form  $y = ax^2$  and  $y = ax^2 + c$ .
- To graph quadratic functions of the form  $y = ax^2 + bx + c$ .
- To solve quadratic equations by graphing and using square roots.
- To solve quadratic equations by factoring.
- To solve quadratic equations using the quadratic formula.
- To find the number of solutions of a quadratic equation.
- To choose a linear, quadratic, or exponential model for data.
- To simplify radicals involving products and quotients.
- To simplify sums and differences of radical expressions.
- To simplify products and quotients of radical expressions.
- To solve equations containing radicals.
- To identify extraneous solutions.
- To simplify rational expressions.
- To multiply and divide rational expressions.
- To simplify complex fractions.
- To add and subtract rational expressions.
- To solve rational equations and proportions.
- To make and interpret frequency tables and histograms.
- To find mean, median, mode, and range.
- To find permutations and combinations.
- To find theoretical and experimental probabilities.