

# St. Francis High School

## Requirements for Waiving Algebra I

All members of the Class of 2013 who wish to take Geometry in Fall 2009, must first pass an Algebra I challenge test.

A more detailed explanation of content and sample test questions can be found at [www.stfrancishs.org](http://www.stfrancishs.org) under the Prospective Students link.

**Test Date:** March 9, 2009

**Time:** 4:00 PM – Approx. 5:30 PM

**Test Format:** Two parts:

- Part I is short answer
- Part II is multiple choice

### Test Content:

#### ➤ **Pre-algebra concepts:**

- Addition, subtraction, multiplication, and division of integers, fractions, and decimals
- Calculate using percents
- Basic geometric concepts such as perimeter and area of rectangles and triangles

#### ➤ **Algebra I content standards from California:**

- Identify and use the arithmetic properties for real numbers
  - Understand and use operations such as taking the opposite, finding the reciprocal, taking a root, raising to a fractional power, and use the rules of exponents
  - Solve linear equations and inequalities, absolute value equations, quadratic equations by factoring, and multistep problems including word problems
  - Graph linear equations using x- and y- intercepts and slope-intercept form
    - Also sketch the region defined by a linear inequality
  - Derive linear equations by using the point-slope formula and manipulate to standard or slope-intercept form
  - Understand the concepts of parallel lines and perpendicular lines and how those slopes are related
    - Find the equation of line parallel or perpendicular to a given line through a given point
  - Solve a system of two linear equations algebraically and graphically
    - Also solve a system of two linear inequalities and sketch the solution
  - Apply basic factoring techniques (greatest common factor, difference of squares, perfect square binomials) to second and simple third degree polynomials
  - Simplify polynomials expressions by adding, subtracting, multiplying, or dividing
    - Solve multistep problems, including word problems involving rate and percent-mixture..
  - Understand the concepts of a relation and a function and determine whether a relation is a function
    - Identify the domain and range of a function
  - Use and know simple aspects of a logical argument.
    - Use counterexamples to show that an assertion is false.
- #### ➤ **Content standards not being tested:**
- Solve quadratic equations by factoring, the quadratic formula, or completing the square.
    - Apply algebraic techniques to solve problems involving work and force of gravity.
  - Graph quadratic functions and know that their roots are x-intercepts
  - Simplify rational expressions by adding, subtracting, multiplying, or dividing
    - Solve multistep problems, including word problems.
  - Solve radical and rational equations and determine the validity of extraneous solutions.
  - It is assumed that all students approved for placement in Geometry will be competent in those standards not being tested by the time they enter St. Francis High School in the fall of 2009.

**Support Material:** No calculators are allowed.

**Passing Requirements:** Based on their Algebra I challenge test scores, students will be placed in one of the following classes: Geometry, Algebra XL, Algebra I, or Algebra IA.