

TOPICS FOR QUALIFYING TEST IN ALGEBRA TO QUALIFY FOR GEOMETRY AS A FRESHMAN

Mathematics Department

WE ARE AWARE THAT STUDENTS MAY NOT HAVE COVERED ALL TOPICS. THE QUALIFYING GRADE IS 70% WHICH ALLOWS FOR SOME MISSED TOPICS. IT IS THE STUDENT'S RESPONSIBILITY TO MAKE SURE ALL ALGEBRA TOPICS ARE MASTERED BEFORE SEPTEMBER.

STUDENTS CAN CHOOSE TO STUDY TOPICS THEY HAVE NOT COVERED BEFORE THE EXAM. WE DO NOT RETEST.

I. Real Number System

- A. Numbers and Algebra
- B. Properties and Laws
- C. Sets/Operations on Sets
- D. Mathematical Systems
- E. Signed Numbers/Order of Operations
- F. Dimensional Analysis/Conversion Factors
- G. Error Measurement

II. Equations and Inequalities

- A. Linear Equations
- B. Linear Inequalities
- C. Solving Systems of Equations Algebraically
- D. Algebraic Expressions
 - 1. Exponents – Integral Exponents
 - 2. Scientific Notation
 - 3. Evaluating Algebraic Expressions and Formulas

III. Polynomials

- A. Operations on Monomials and Polynomials
- B. Factoring
 - 1. Difference of Two Squares
 - 2. Common Monomial
 - 3. Trinomials
 - 4. Complete Factoring
- C. Solving Quadratic Equations by Factoring

IV. Algebraic Fractions

- A. Determining When a Fraction is Undefined
- B. Simplifying/Reducing
- C. Multiplication and Division

- D. Addition and Subtraction
- E. Solving Equations Involving Fractional Expressions

V. Radicals

- A. Simplifying
- B. Multiplication and Division
- C. Addition and Subtraction

VI. Ratio and Proportion

- A. Simplifying Ratios
- B. Solving Proportions
- C. Direct Variation
- D. Percents – Increase, Decrease and Discounts

VII. Graphing on the Coordinate Plane

- A. Definitions and Terminology
- B. Linear Equations
 - 1. Slope a. As a Rate of Change b. Formula Using Two Points on a Line
 - 2. Intercepts
 - 3. Graphing a. Using Two Points b. Using Slope and Intercepts c. Using a Table of Values
- C. Graphing Linear Inequalities
- D. Solving Systems of Equations Graphically
- E. Graphing Systems of Linear Inequalities

VIII. Parallel and Perpendicular Lines Cut by Transversals

IX. Area and Perimeter of Geometric Figures

XX. Area and Circumference of Circles

All but Polynomials, Algebraic Fractions and some Graphing on the Coordinate Plane is covered in 7th and 8th grade so be sure to cover these topics.