Form A Placement Exam Topics

<table>
<thead>
<tr>
<th>Form A</th>
<th>Students who have completed one full year of Algebra 1</th>
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<tbody>
<tr>
<td>Form G</td>
<td>Students who have completed at least:</td>
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<tr>
<td></td>
<td>One full year of Algebra 1 and one full year of Geometry</td>
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To prepare, you may review the topics you were taught using the following list:

Note: The conceptual category of modeling is included in Algebra 1. Modeling expressions is covered under most major topics.

### Algebra
- Number Lines
- The Real Number System
- Rational and Irrational Numbers
- Order of Operations
- Bases, Exponents, and Powers
- Exponential Equations
- Operations with Monomials
- Adding and Subtracting Polynomials
- Solving Linear Equations
- Word Problems Leading to Linear Equations
- Multiplying Monomials and Polynomials
- Power of a Product
- Multiplying a Polynomial by a Monomial
- Multiplying Two Polynomials
- Dividing a Polynomial by a Monomial
- Solving linear equations, including literal ones
- Squaring Binomials/ Multiplying Binomials
- Factoring: Greatest Common Monomial Factor
- Factoring: Difference of Two Squares
- Factoring: Trinomials
- Factoring: Combining Several Methods
- Factoring Third Degree Polynomials by Grouping
- Roots of Quadratic Equations
- Solving Quadratic Equations by Factoring
- Solving Quadratic Equations: Verbal Problems
- Solving Quadratic Equations by completing the square and the formula
- Solving Systems of Linear-Quadratic Equations
- Solving Word Problems Using Systems of Equations
- Multiplying Rational Expressions
- Dividing Rational Expressions
- Simplifying Rational Expressions
- Adding and Subtracting Rational Expressions (Same and Different Denominator)
- Percentage Problems

### Algebra (continued)
- Solving Systems of Linear Equations (Elimination Method)
- Solving Systems of Linear Equations (Substitution Method)
- Solving Systems of Linear Equations (Mixed/Verbal Problems/graphically)
- Square Roots of Numbers and of Variable Expressions
- Absolute Value
- Multiplying and Dividing Radical Expressions
- Adding and Subtracting Radical Expressions
- Solving Radical Equations
- Solving Inequalities/Combined Inequalities
- Solving Inequalities: Verbal Problems
- Graphing Inequalities
- Graphing systems of linear equations

### Functions
- Function notation/Domain/Range
- Families of Functions
- Transformations with Functions
- Defining and comparing functions
- Identifying the equation of a graph
- Piecewise functions
- Absolute value functions
- Rate of change
- Graph of \( y = f(x) \): roots, intercepts
- Real solutions of \( f(x) = g(x) \)
- Applications of linear and quadratic functions
- Exponential Functions: \( f(x) = a \cdot b^x \) and word problems leading to exponential functions

Revised: Spring 2017
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<th><strong>Geometry</strong></th>
<th><strong>Transformations</strong></th>
<th><strong>Probability and Statistics</strong></th>
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<td>Geometric Figures: Parallelograms, Triangles, Trapezoids</td>
<td>Line Reflection and Line Symmetry</td>
<td>Counting Principle</td>
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<td>Complementary and Supplementary Angles</td>
<td>Point Reflection and Point Symmetry</td>
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<tr>
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<td>Translation</td>
<td>Event ( A \text{ and } B ), Event ( A \text{ or } B )</td>
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<tr>
<td>Angles/Parallel Lines/Perpendicular Lines</td>
<td>Dilation</td>
<td>Measures of Central Tendency: Mean/Median/Mode</td>
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<tr>
<td>Angles and the Triangle</td>
<td>Rotation</td>
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<td>Pythagorean Theorem</td>
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<tr>
<td>Perimeter, Area, Volume</td>
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<td>Analysis of data</td>
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<tr>
<td>Area including polygons, Circles and Cubes</td>
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<td>Circumference and Area of a Circle</td>
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<td>Ratio and Proportion</td>
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<td>The Parabola, the Nature of the Parabola, its Graph, ( y = a(x - h)^2 + k ) form</td>
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<tr>
<td>Identifying the vertex of a Quadratic given equation/graph</td>
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<td>Ordered Number Pairs and Points in a Plane</td>
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<td>Slope of a Line/ Midpoint of a Line Segment</td>
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<td>Points of Intersection</td>
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<td>Equation of a Line</td>
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<td>Graphing Lines/Graphing Linear Inequalities</td>
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<td>Systems of linear inequalities</td>
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