

Algebra 1

2011-2012 Ms. Gale

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Scope: Algebra is the abstract study of numbers and their relationship to each other. What this class offers and what you will gain through diligence is the ability to use problem-solving techniques to solve increasingly complex problems and to find the relevance of algebra through applications. The skills learned in Algebra 1 are basic to the study of Geometry and Intermediate Algebra as well as the quantitative aspects of any field you that may wish to pursue in the future.

Materials: Glenco Algebra 1 (California Edition) www.algebra1.com
Three-ring binder for notes, handouts homework and quizzes.
TI-84 Plus Graphing Calculator (TI-83 is acceptable)
Paper, graph paper, ruler with inches and centimeters, pencil, eraser

Sequence:

Semester 1

The Language of Algebra
Real Numbers
Linear Equations
Relations and Functions
Analyzing Linear Function
Probability and Odds

Semester 2

Linear Inequalities
Systems of Equations & Inequalities
Polynomials
Factoring & Quadratic Equations
Radical Expressions & Equations
Principles of Counting

Grading Policy:

70% of each semester grade will be based on a percentage of total points of tests (100 points each), quizzes (30-50 points each), assignments and class participation (10%).

30% of each semester grade will be based on a comprehensive final exam.

Office Hours:

If you need to talk with me *for any reason* (mathematical, practical, personal etc....), you can send me an email or you can drop in at the beginning of break or lunch, or after school. If possible we can take care of business at that time or, if necessary, we can make an appointment. If you are having difficulties with a topic, you should see me IMMEDIATELY. Do not wait for the morning of a test!

Webpage:

Check my webpage for assignments and test dates. Use Hotmath.com for extra help on homework problems. The password is... **xe63070de**

General Expectations

Learning: Everyone is capable of learning the mathematics taught in this course, though perhaps to a different depth. Learning takes time, patience, practice and willingness to learn from mistakes. For this class, effort and perseverance will be as important as talent.

Attendance: Regular attendance is critical for success in mathematics as the classwork supplements the material presented in the textbook and vice versa. If an absence is unavoidable, I expect the student to get the notes from another students and make an effort to complete the assignment(s). If you have questions, bring the notes to office hours/appointment for clarification as soon as possible.

Tardiness: The student is expected to be on time to class. A student is on time when she is in her seat with her binder out when class begins. It is important that students get in the habit of arriving to school on time. For first period, the third tardy (and every tardy thereafter) per semester results in a detention. At the fifth tardy, the student is suspended from class without provision for make-up work.

Homework: In addition to “ponder and review the day’s lesson,” written homework is given regularly and reading the relevant section of the textbook will occasionally be necessary to complete the assignment. Although individual homework assignments will not be collected or graded, we will spend the beginning of each class reviewing the homework and answering questions. During this time I will often check to see that this work has been done. Students will receive a homework grade based on this sample. (Note: Work must be shown with nearly every problem - a list of answers does not constitute complete homework.)

Hotmath.com has solutions (not just the answers) to odd-numbered problems in our textbook. This is a great resource to use when stuck on a homework exercise because the solution is suggested a line at a time.

The website associated with the text, www.algebra1.com, has resources such as Extra Examples, Self check Quizzes and a Parent and Student Study Guide.

Participation: Students are expected to be participants in the learning process. Your contribution to the environment - positive or negative - will be considered when the semester grade is calculated. Participation includes, but is not limited to, asking and answering questions, making relevant observations, remaining on task, having grade sheet and binder up-to-date, being civil and helpful, attending regularly and being on time.

Make-Ups: Generally, students with extended absence for illness have as many days to make up an exam. Quizzes that have been graded and returned cannot be made-up, and a student who misses a quiz will be given a blank copy for study purposes without penalty.

- A student who is absent the day before a test, but present when the test was scheduled, should be prepared to take the test with the class.
- A student who is absent on the test day only should be prepared to take the test on the day she returns.
- Any extenuating circumstances must be discussed with me PRIOR to the beginning of class. Feel free to contact me by e-mail but follow-up with me in person.

Gradesheet: Students are required to keep track of her grade with a grade-sheet. Anytime the cumulative percent falls below 70 she should consider it cause for serious concern. Most chapters will consist of at least 1 quiz (30 - 50 points) and 1 exam (100 points). Standard percentages are used to convert to letter grade: (Last pages.)

A : 94 – 100%	B ⁺ : 87 – 89%	C ⁺ : 77 – 79%	D ⁺ : 67 – 69%	F: < 59%
A–: 90 – 93%	B : 83 – 86%	C : 73 – 76%	D : 63 – 66%	
	B–: 80 – 82%	C–: 70 – 72%	D–: 60 – 62%	

Algebra 1 Benchmarks

- Students identify and use the arithmetic properties of subsets of integers and ration, irrational, and real numbers, including the closure properties for the four basic arithmetic operations.
- Students use properties of numbers to demonstrate whether assertions are true or false.
- Students understand and use such operations as taking the opposite, finding the reciprocal, raising to a power and taking a root. They understand and use the rules of exponents.
- Students solve equations and inequalities involving absolute value.
- Students simplify expressions before solving linear equations and inequalities in one variable.
- Students solve multi-step problems, including word problems, involving linear equations and inequalities in one variable and provide justification for each step.
- Students graph a linear equation and compute x- and y-intercepts. They are able to sketch the region defined by linear inequality.
- Students verify that a point lies on a line, given the equation of the line. Students can derive linear equations using the point-slope formula.
- Students understand the concepts of parallel and perpendicular lines and how those slopes are related. Students are able to write the equation of a line perpendicular to a given line that passes through a given point.
- Students solve a system of two linear equations in two variables algebraically and are able to interpret the answer graphically. Students are able to solve a system of two linear inequalities in two variables and to sketch the solution set.
- Students add, subtract, multiply and divide monomials and polynomials. Students solve multi-step problems using these techniques.
- Students apply basic factoring techniques to second- and simple third-degree polynomials. These techniques include finding a common factor for all terms of a polynomial, recognizing the difference of two squares and recognizing perfect square trinomials.
- Students solve quadratic equations by factoring.
- Students apply algebraic techniques to solve rate and mixture problems.
- Students understand the concepts of function and relation, determine whether a given relation defines a function, and give pertinent information about given relations and functions.
- Students determine the domain of independent variables and the range of dependent variables defined by a graph, a set of ordered pairs or a symbolic expression.
- Students determine whether a relation defined by a graph, a set of ordered pairs or a symbolic expression is a function and justify the conclusion.
- Students use the properties of the number system to judge the validity of results, to justify each step in a procedure, and to prove or disprove results.
- Students judge the validity of an argument according to whether the properties of real numbers and the order of operations have been applied correctly at each step.
- Given a specific algebraic statement involving linear, quadratic, or absolute value expressions or equations or inequalities, student determine whether the statement is true *sometimes*, *always* or *never*.
- Students understand and use the Fundamental Counting Principle and how it is applied to count permutations and combinations.
- Students understand and compute basic experimental and theoretical probabilities.

