

ALGEBRA I

College Prep. B

COURSE OUTLINE

NUMBER: 303
LEVEL: College Prep. B
TEXTBOOK: ALGEBRA 1 CONCEPTS AND SKILLS, McDougal Littell Inc.,
2001
LENGTH: Full year
CREDITS: 5 Credits
REVISED: August 2008

PREREQUISITE

There are no prerequisite courses for Algebra 1 College Prep. B. Incoming freshman are scheduled for this course based on their scores on standardized tests and teacher recommendation. Upperclassmen may schedule this course with teacher recommendation.

COURSE DESCRIPTION

Algebra 1 College Prep. B is the first year of college preparatory mathematics at our CP B level. It is designed for students who are planning to continue their education beyond high school either at a college or a technical school, but have demonstrated that they would have difficulty in succeeding in mathematics at a CP A level. Students who meet the requirements should be encouraged to enroll in this course even if they are not planning to go to college at the present time. Due to the increasing technological nature of our society, every student needs knowledge of algebra. It is to the student's advantage to take algebra at the highest level he/she is capable of mastering.

Topics covered in this course are operations on real numbers, solutions of first degree equations and inequalities, graphing first degree equations and inequalities, systems of equations and inequalities, exponents, polynomials, factoring, radicals, functions, probability, percents, and data analysis. Problem solving and real life situations, which apply these concepts, are stressed throughout the course.

HSPA Review problems will also be integrated in the course through teacher prepared worksheets and/or transparencies. Similar problems will appear on quizzes and tests.

Scientific calculators are required for the course both for exploration and discovery and as an aid to computation in real life

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problems. The use of a calculator allows students to concentrate on problem solving strategies and enables us to use the types of numbers which occur in real life situations, but may be difficult to work with if a calculator is not available. Students will be given instructions on how to use the calculators efficiently. Estimation and reasonableness of answers will be stressed so that students can recognize calculator errors.

DESCRIPTION OF INSTRUCTION

Students are expected to be active participants in the learning process. The teacher will involve them in the introduction and development of material through questioning and class discussions. Understanding of concepts is stressed rather than rote memorization of skills. When appropriate, students are guided in discovering the concept themselves through a study of patterns and by relating the new work to their prior knowledge. Critical thinking is emphasized and students will be asked to draw, label, explain, justify, verify, and interpret as they apply the concepts to new situations.

Reading and interpreting mathematics will be emphasized. Students will be required to read all lessons in the textbook and questions on the reading will be assigned for homework. At the beginning of the course, parts of the assignments will be done in class to help students become accustomed to reading mathematics.

Cooperative learning activities will be used throughout the course, both informal activities such as discussing homework or solving a problem from the textbook and formal discovery and problem solving activities. Students will be encouraged to verbalize math concepts and share ideas with each other.

Homework will be given almost every day and is an important part of the course, providing students the opportunity to apply skills learned in class, strengthen their understanding of the concepts, and identify areas they don't understand. It is imperative that students do homework regularly and conscientiously. Homework will be reviewed in class and it is the students' responsibility during that time to ask questions about problems he/she doesn't understand, to identify specific mistakes, and to take notes on any further explanations concerning these problems. Students are responsible to make up any missed classwork (tests, quizzes, homework, and projects) in a timely manner and according to teacher-established policies, which will be discussed in class. It is the students' responsibility to obtain material (notes, homework) for any extended absence and meet with teacher upon return to class.

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Students are expected to bring their textbook, homework, and a writing implement to class. They are expected to take notes during class and to keep these notes, along with homework, quizzes, and tests, in an organized manner.

District Policy: ACADEMIC INTEGRITY

Pupils are expected to be honest in all of their academic work. This means that the students in this course will not engage in any of the following acts:

- Cheating on examinations or other school assignments, including but not limited to, the non-authorized use of books or notes, the use of crib sheets, copying from other students' papers, exchanging information with other students orally, in writing, or by signals, obtaining copies of the examination illegally and other similar activities. Cheating through the use of technology to exchange information on any school assignment, examination, etc. is prohibited. Technology is defined as, but not limited to, computers, telephones, text messaging, palm pilots, calculators, cameras or any other hand held device.
- Plagiarism is not permitted in term papers, themes, essays, reports, images, take-home examinations, and other academic work. Plagiarism is defined as stealing or use without acknowledgment of the ideas, words, formulas, textual materials, on-line services, computer programs, etc. of another person, or in any way presenting the work of another person as one's own.
- Falsifications, including forging signatures, altering answers after they have been graded, inserting answers after the fact, erasing of grader's markings, and other acts that allow for falsely taking credit.

A pupil found guilty of academic dishonesty may be subjected to a full range of penalties including, but not limited to reprimand and loss of credit for all of the work that is plagiarized. Disciplinary action may also be a consequence of such behavior. Additional consequences may apply as defined in specific department policies and guidelines.

A teacher who believes that a pupil has been academically dishonest in his/her class should resolve the matter in the following manner:

- Reprimand the student orally and/or in writing. The teacher is also authorized to withhold credit in the work due to academic dishonesty.
- If warranted, the teacher shall file a written complaint against the student with the Administration, requesting a more stringent form of discipline. The complaint must describe in detail the academic dishonesty that is alleged to have taken place, and must request that the matter be reviewed by the Administration.
- The Administration will determine if further discipline of the pupil is appropriate, and will determine the nature of the discipline on a case-by-case basis.

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- If the pupil is not in agreement with the disciplinary action of the Administration, he/she may appeal the action first to the Principal and secondly to the Superintendent. If the pupil is dissatisfied with the Superintendent's disposition of the case, he/she may grieve the action in accordance with Policy No. 5710, Pupil Grievance.

District Policy: Equal Opportunity

High Point Regional High School's curriculum and instruction are aligned to the State's Core Curriculum Content Standards and address the elimination of discrimination by narrowing the achievement gap, by providing equity in educational programs and by providing opportunities for students to interact positively with others regardless of race, creed, color, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, religion, disability or socio-economic status.

STUDENT EVALUATION

Quizzes, based on the course proficiencies, will be given about once a week with a major test, based on the proficiencies, given at the end of each unit. Pop quizzes may also be given at the instructor's discretion. An exam, covering the semester's work, will be given at the end of each semester.

Homework will be checked daily. It may be graded, but will be considered satisfactory if the work shown indicates the student has made a conscientious effort to complete the assignment. Sometimes an assignment given for homework may be collected and graded as a quiz. This will occur only when the concepts have been thoroughly reviewed.

Grades will be calculated accordingly to the school grading policy and the following guidelines.

A. Marking Period

- | | |
|----------------------------|-----|
| 1. Tests and Quizzes | 75% |
| 2. Homework and Class work | 25% |
- (Each teacher will explain his/her policy to the class.)

B. Semester Grade

- | | |
|------------------------|-----|
| 1. Each Marking Period | 40% |
| 2. Exam | 20% |

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COURSE PROFICIENCIES

Students will be able to:

1. Identify subsets of the real number system and add, subtract, multiply and divide them.
2. Use vectors to add and subtract numbers on the number line.
3. Evaluate expressions containing positive and negative integral exponents, roots and factorials.
4. Solve problems using numbers in scientific notation.
5. Use primes, factors and multiples to solve problems.
6. Demonstrate an understanding of the correct algebraic order of operations.
7. Solve problems using given formulas.
8. Demonstrate an understanding of properties of equality and properties of operations.
9. Solve linear equations and apply them to real life problems.
10. Solve proportions and apply them to real life problems.
11. Apply percents to real life problems.
12. Graph linear functions and apply to real life problems.
13. Construct and interpret graphs of real life situations.
14. Represent relations and functions as tables of data, ordered pairs, graphs and equations.
15. Identify and graph non-linear functions and use them to solve problems,
16. Demonstrate an understanding of reflections, rotations, translations and dilations.

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17. Analyze and describe sequences and patterns and apply to problem solving situations.
18. Find measures of central tendency and determine the one which is most appropriate for a given problem.
19. Collect, interpret and display data in a variety of formats.
20. Determine and compare experimental and theoretical probability.
21. Solve systems of linear equations and apply to real life problems.
22. Solve linear inequalities in one variable.
23. Graph linear inequalities in two variables.
24. Perform operations with polynomials
25. Use rules of exponents.
26. Factor polynomials and use to solve quadratic equations.

RESOURCES:

Resource Book and Practice Workbook in addition to the text. Internet support is available for students at www.mcdougallittell.com with student access code: **MCDHJ4CRQDPE7**.

NEW JERSEY CORE CURRICULUM CONTENT STANDARDS (CCCS)

STANDARD 4.1 (Number and Numerical Operations)

All students will develop number sense and will perform standard numerical operations and estimation on all types of numbers in a variety of ways.

STANDARD 4.3 (Patterns and Algebra)

All students will represent and analyze relationships among variable quantities and solve problems involving patterns, functions, and algebraic concepts and processes.

STANDARD 4.4 (Data Analysis, Probability, and Discrete Mathematics)

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All students will develop an understanding of the concepts and techniques of data analysis, probability, and discrete mathematics, and will use them to model situations, solve problems, and analyze and draw appropriate inferences from data.

STANDARD 4.5 (Mathematical Processes)

All students will represent and analyze relationships among variable quantities and solve problems involving patterns, functions, and algebraic concepts and processes.