

Dover-Sherborn High School
Mathematics Curriculum
Algebra I Level 2B

A. DESCRIPTION

This course is designed as a follow-up to the level 2A course. It will provide students with

1. an extension of their fundamental algebraic skills and present them with the other more
2. advanced Algebra I topics such as systems of linear equations, quadratic equations and
3. word problems of a more complex nature.

B. OBJECTIVES

The student should be able to:

1. extend his/her knowledge of the topics covered in Algebra I level 2A;
2. factor monomials and most polynomials;
3. simplify and combine rational expressions;
4. solve fractional equations;
5. graph linear equations in the coordinate plane;
6. solve systems of linear equations by graphing, substitution and linear combination,
7. and solve word problems involving both one and two variables.

C. OUTLINE

1. Review and extension of Algebra I Level 2A topics [AI.N.4]; [AI.P.4]; [AI.P.5]
 - a. Operations on rational numbers and order of operations [AI.N. 1];
 - b. Properties of real numbers [AI.N. 1]
 - c. Operations on monomials and polynomials [AI.P.7]
 - d. Evaluation of algebraic expressions and formulas [AI.N.2]
 - e. Solution of linear equations, linear inequalities and absolute value equations AI.P.1]; [AI.P.2]; [AI.P.10]
 - f. Word problems [AI.P. 11]
 - 1) number
 - 2) consecutive integer
 - 3) age
 - g. Relations and functions [AI.P.3]
 - h. Line of best fit [AI.D.2]
2. Factoring [AI.P.I]; [AI.P.8]; [AI.P.9]
 - a. Techniques of factoring
 - b. Solutions of factorable quadratic equations
 - c. Roots/Estimating roots [AI.N.3]
3. Rational Expressions [AI.P.8]
 - a. Definition
 - b. Simplification
 - c. Operations
 - d. Complex fractions

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4. Fractional equations [ALP. 11]; [A.I.P. 12]
 - a. Solution of fractional equations
 - b. Solution of decimal equations
 - c. Applicable word problems
 - 1) work
 - 2) percent and ratio
5. Systems of Equations [A.I.P.5]; [A.I.P.6]; [A.I.P. II]; [A.I.P. 12]
 - a. Graphing linear equations in two variables
 - 1) definitions
 - 2) determining equations of lines given two points, or a point and a slope
 - b. Solving systems of equations in two variables
 - 1) by graphing
 - 2) by substitution
 - 3) by linear combination
 - 4) using matrices
 - c. Word problems
 - 1) coin, stamp, mixture
 - 2) geometric
6. Irrational numbers and radicals [A.I.N.1]; [A.I.N.4]
 - a. Definitions and symbols
 - b. Simplification
 - c. Operations
7. Statistics [A.I.D. 1]
 - a. Select, create, interpret graphical representation of a set of data [A.I.D.1]
 - b. Use mean, median, mode, range and other appropriate statistics to communicate information
 - c. Line of best fit [A.I.D.2]
 - d. Sample size/populations to assess validity of predictions. [A.I.D.3]

D. TEXT

Algebra I, Larson, McDougal-Littell, 2001
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E. RESOURCE MATERIALS

1. Worksheets prepared by teacher
2. Graphical Calculators
3. Mathematics Teacher
4. Websites chosen by teacher