

Algebra I

Text:	Larson, Boswell, Kanold, & Stiff (2001) <i>Algebra I</i> , Houghton Mifflin Company: Evanston, Illinois.
Supplemental Materials:	TI – 83 or above Graphing Calculator.
Course Description:	The purpose of this course is to develop in students the skills and concepts necessary for the solving of basic algebraic equations and to show the application of these skills in practical word problems. Students should be skilled in operations with fractions, decimals, and percents. They should develop a thorough understanding of linear equations, their graphs and their real world applications.
Methods of Evaluation:	Students can be evaluated through tests, quizzes, worksheet sets, homework problem sets, technology grades, semester exams and/or any other form of evaluation instrument the instructor finds applicable to the course.
Pace of Instruction:	First Semester: Chapters 1 - 6 Second Semester: Chapters 7 - 12
Course Objectives:	At the end of this course students should be able to: <ol style="list-style-type: none">1. Evaluate a variable expression and write a variable expression that models a real-life situation.2. Evaluate expressions containing exponents.3. Use the order of operations to evaluate algebraic expressions4. Check solutions and solve equations using mental math.5. Translate verbal phrases into algebraic expressions6. Use tables of organized data.7. Identify a function and make an input-output table for a function.8. Graph and compare real numbers using a number line.9. Add real numbers using a number line or addition rules.10. Subtract real numbers using the subtraction rule.11. Organize data in a matrix and add and subtract two matrices.12. Multiply real numbers using properties of multiplication.13. Use the distributive property and simplify expressions by combining like terms.14. Find the probability of an event and find the odds of an event.15. Solve linear equations using addition and subtraction16. Use two or more transformations to solve an equation.17. Collect variables on one side of an equation.18. Find exact and approximate solutions of equations that contain decimals.19. Solve a formula or literal equation for one of its variables.

20. Identify and use inductive and deductive reasoning.
21. Plot points in a coordinate plane.
22. Graph a linear equation using a table or a list of values.
23. Find the intercepts of the graph of a linear equation.
24. Find the slope of a line using two of its points.
25. Write linear equations that represent direct variation.
26. Graph a linear equation in slope-intercept form.
27. Solve a linear equation graphically.
28. Identify when a relation is a function.
29. Use the slope intercept form to write the equation of a line.
30. Use slope and any point on a line to write an equation of the line.
31. Write an equation of a line given two points on the line.
32. Find a linear equation that approximates a set of data points.
33. Use the point-slope form to write an equation of a line.
34. Write a linear equation in standard form.
35. Graph linear inequalities in one variable
36. Solve one-step linear inequalities.
37. Solve multi-step linear inequalities.
38. Write, solve, and graph compound inequalities.
39. Solve absolute-value equations.
40. Graph a linear inequality in two variables.
41. Make and use a stem and leaf plot to put data in order.
42. Draw a box and whisker plot to organize real life data
43. Solve a system of linear equations by graphing.
44. Use substitution to solve a linear system.
45. Use linear combinations to solve a system of linear equations.
46. Choose the best method to solve a system of linear equations.
47. Solve a system of linear inequalities by graphing.
48. Use properties of exponents to multiply exponential expressions
49. Evaluate powers that have zero and negative exponents.
50. Use the division properties of exponents to evaluate powers and simplify expressions.
51. Write and use models for exponential growth.
52. Evaluate and approximate square roots.
53. Use properties of radicals to simplify radicals.
54. Sketch the graph of a quadratic function.
55. Solve a quadratic equation graphically
56. Use the quadratic formula to solve a quadratic equation.
57. Use the discriminant to find the number of solutions of a quadratic equation.
58. Add and subtract polynomials.
59. Multiply and divide polynomials.
60. Factor a quadratic expression.
61. Use special product patterns to factor quadratic polynomials.
62. Solve proportions
63. Use equations to solve percent problems.
64. Use direct and inverse variation.
65. Simplify a rational expression.
66. Multiply and divide rational expressions.

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| | <ol style="list-style-type: none">67. Add and subtract rational expressions that have like denominators.68. Solve rational equations.69. Evaluate and graph a square root function.70. Add, subtract, multiply and divide radical expressions.71. Solve a radical equation.72. Solve a quadratic equation by completing the square.73. Find the distance between two points in a coordinate plane.74. Use the sine, cosine, and tangent of an angle. |
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