

# Algebra 1

Credits:1

Prerequisite:Pre-algebra

Recommended:8th, 9th

Course Description:Students will engage in real world and hands-on problem solving while using their developing skills in algebra. Students will learn new material through animations, videos, reading, and guided practice. The topics covered in this course include: real numbers, algebraic expressions, graphing to solve inequalities and absolute value, graphing to solve linear equations, systems of equations, factoring polynomial equations, relations and functions, quadratic equations, radical and rational expressions and equations, and probability. Students will also do timed PSAT practice questions.

Day 1 Intro to Algebra

Day 2 approaches to problems

Day 3 solving equations

Day 4 exponents and solving equations

Day 5 multi-step equations

Day 6 multi-step equations, radicals

Day 7 writing expressions and equations

Day 8 writing expressions and equations. Order of operations

Day 9 solving for a specific variable

Day 10 solving for a specific variable. properties of addition.

Day 11 absolute value

Day 12 absolute value. properties of multiplication

Day 13 solving absolute value equations

Day 14 solving absolute value equations. Statements of equality

Day 15-17 project, applying equations

Day 18-19 inductive patterns.

Day 20 representing patterns.

Day 21 representing patterns. radicals

Day 22 representing functions and relations.

Day 23 representing functions and relations. distributive property

Day 24 domain and range

Day 25 domain and range. Simplifying fractions.

Day 26 proportional functions.

Day 27 proportional functions. Equivalent fractions.

Day 28 linear functions

Day 29 linear functions. integers

Day 30 non-linear functions

Day 31 non-linear functions. Multiply and divide integers

Day 32 project, applying functions

Days 33-34-35-36 project, applying functions

Day 37-38 rate of change and slope

Day 39-40 intercepts of linear functions

Day 41 graphing equations slope-intercept form

Day 42 graphing equations.

Day 43 slope form and standard form

Day 44 solving for slope form and standard form. Combine like terms

Day 45 parallel lines

Day 46 parallel lines. Like terms

Day 47-48 perpendicular lines

Day 49 project, analyze graph linear equations, functions and relations

Day 50-51-52-53 project, applying equations/functions/relations

Day 54 project, applying graphing, relationships

Day 55 quiz, project graphing relationships

Day 56 project graphing relationships

Day 57-60 practice PSAT questions

Day 61-62 writing, solving and graphing inequalities in one variable

Day 63 solving and graphing absolute value inequalities

Day 64 solving and graphing absolute value inequalities. words into mathematical expressions

Day 65 writing and using inequalities

Day 66 writing and using inequalities.

Day 67 solving and graphing linear inequalities in two variables

Day 68 solving and graphing linear inequalities in two variables.

Day 69 applying inequalities

Day 70-71-72-73 project, applying inequalities

Day 74 solving systems of linear equations with graphing

Day 75 solving systems of linear equations with graphing. Quiz on solving absolute value equations.

Day 76 solving systems of equations with substitution

Day 77 solving systems of equations with substitution. slope quiz.

Day 78 solving systems of linear equations by elimination

Day 79 solving systems of linear equations by elimination. quiz on solving systems of equations using the elimination method.

Day 80-81 rate problems

Day 82-83 mixture problems

Day 84 applying mixture problems

Day 85-86-87-88 project, applying mixture problems

Day 89 review solving and graphing absolute value inequalities, solving for intercepts of linear functions, proportional functions

Day 90 review Non-linear functions, perpendicular lines, solving and graphing linear inequalities in two variables

Day 91-92 rules of exponents

Day 93-94 Scientific notation

Day 95-96 simplifying expressions with exponents

Day 97 Pythagorean Theorem, quiz

Day 98 applications of the Pythagorean theorem

Day 99 applications of the Pythagorean theorem

Day 100 simplifying radical expressions

Day 101 simplifying radical expressions, absolute value inequality problems

Day 102 solving radical equations

Day 103 solving radical equations, find the slope.

Day 104 applying radical equations

Day 105 applying radical equations, observing graphs

Day 106 fractional exponents

Day 107 fractional exponents, Pythagorean theory

Day 108 applying Pythagorean theory, calculating miles

Day 109 applying pythagorean theorem

Day 110-111 PSAT practice questions

Day 112 -113 Multiplying and dividing monomials

Day 114 applications of polynomials

Day 115 applications of polynomials, quiz solving absolute value inequalities

Day 116 adding and subtracting polynomials

Day 117 adding and subtracting polynomials, quiz radical expressions

Day 118 multiplying polynomials

Day 119 multiplying polynomials, exponent game

Day 120 special products of polynomials

Day 121 special products of polynomials, quiz solving radical equations

Day 122 roman numerals and polynomials

Day 123-124 factoring and the distributive property

Day 125 factoring trinomials by grouping

Day 126 factoring trinomials by grouping, simplifying radicals

Day 127 factoring trinomials by grouping

Day 128 factoring trinomials, simplifying radicals

Day 129 factoring by special products

Day 130 multiplying polynomials, multiplying binomials

Day 131-132 solving quadratic equations by factoring

Day 133 applying equations

Day 134 Review solving linear functions, applying radical equations, Pythagorean theorem

Day 135 Review solving slope form and standard form, rate problems, rules of exponents

Day 136 graphing quadratic equations

Day 137 graphing quadratic equations, find equation of a line

Day 138 solving quadratic equations by completing the square

Day 139 solving quadratic equations by completing the square, quiz on factoring differences of squares

Day 140 solving quadratic equations using quadratic formula

Day 141 solving quadratic equations using quadratic formula, quiz factoring trinomials

Day 142 applications of quadratic functions

Day 143 applications of quadratic functions, quiz factoring perfect square trinomials

Day 144 systems of non-linear equations

Day 145 systems of non-linear equations, quiz factoring trinomials

Day 146 applying trinomials

Day 147-148 simplifying rational expressions

Day 149 multiplying and dividing rational expressions

Day 150 multiplying and dividing rational expressions, quiz on quadratic formula

Day 151 adding and subtracting rational expressions

Day 152 adding and subtracting rational expressions, quiz on parabolas

Day 153 solving rational equations

Day 154 solving rational equations, quiz on completing the square

Day 155 applying rational expressions

Day 156 applying rational expressions, solve the radicals

Day 157 applying expressions  
Day 158-159 number sets  
Day 160-161 understanding logical statements  
Day 162 inductive reasoning  
Day 163 inductive reasoning, quiz on properties of numbers  
Day 164-165 deductive reasoning  
Day 166-167 events and outcomes  
Day 168-169 probability of independent events  
Day 170 permutations and combinations  
Day 171 permutations and combinations, study for final  
Day 172-173 probability of dependent events  
Day 174 probability applications  
Day 175 review of functions and relations  
Day 176-179 review for final  
Day 180 final exam