

Prep for GED Mathematics (4th Edition – 2002 Test)

This course covers the topics shown below.

Students navigate learning paths based on their level of readiness.

Institutional users may customize the scope and sequence to meet curricular needs.

Curriculum (320 topics + 33 additional topics)

- Whole Numbers and Integers (60 topics)
 - ◆ Expanded Form and Numeral Translation (4 topics)
 - ◇ Whole number place value: Problem type 1
 - ◇ Whole number place value: Problem type 2
 - ◇ Numeral translation: Problem type 1
 - ◇ Numeral translation: Problem type 2
 - ◆ Addition and Subtraction (11 topics)
 - ◇ Adding a 2–digit number and a 1–digit number with regrouping
 - ◇ Adding 2–digit numbers without regrouping
 - ◇ Adding 2–digit numbers with regrouping a ten
 - ◇ Adding with regrouping a hundred
 - ◇ Addition of large numbers
 - ◇ Subtracting a 1–digit number from a 2–digit number
 - ◇ Subtraction of 2–digit numbers without regrouping
 - ◇ Subtraction of 2–digit numbers with regrouping
 - ◇ Subtraction and regrouping with zeros
 - ◇ Subtraction with multiple regrouping steps
 - ◇ Word problem with addition or subtraction of whole numbers
 - ◆ Multiplication and Division (15 topics)
 - ◇ One–digit multiplication
 - ◇ Multiplication by 10, 100, and 1000
 - ◇ Multiplying 2–digit and 1–digit numbers without regrouping
 - ◇ Multiplying with regrouping
 - ◇ Introduction to multiplication of large numbers
 - ◇ Multiplication of large numbers
 - ◇ Division facts
 - ◇ Division without regrouping
 - ◇ Division with regrouping
 - ◇ Quotient with remainder: 1–digit divisor, 2–digit dividend
 - ◇ Quotient with remainder: 1–digit divisor, 3–digit dividend
 - ◇ Quotient with remainder: 2–digit divisor, 3–digit dividend
 - ◇ Word problem with division of whole numbers and rounding: Problem type 2
 - ◇ Word problem with multiplication or division of whole numbers
 - ◇ Word problem with multiplication and addition or subtraction of whole numbers
 - ◆ Rounding, Ordering, and Order of Operations (13 topics)
 - ◇ Introduction to inequalities
 - ◇ Ordering large numbers
 - ◇ Rounding to tens or hundreds
 - ◇ Rounding to hundreds or thousands

- ◇ Rounding to thousands, ten thousands, or hundred thousands
- ◇ Estimating a sum of whole numbers: Problem type 2
- ◇ Estimating a difference of whole numbers: Problem type 2
- ◇ Estimating a product
- ◇ Estimating a quotient
- ◇ Introduction to parentheses
- ◇ Introduction to order of operations
- ◇ Order of operations with whole numbers
- ◇ Order of operations with whole numbers and grouping symbols
- ◆ Factors and Prime Numbers (6 topics)
 - ◇ Factors
 - ◇ Prime numbers
 - ◇ Prime factorization
 - ◇ Greatest common factor of 2 numbers
 - ◇ Least common multiple of 2 numbers
 - ◇ Word problem with common multiples
- ◆ Integers (11 topics)
 - ◇ Reading the temperature from a thermometer
 - ◇ Plotting integers on a number line
 - ◇ Absolute value of a number
 - ◇ Operations with absolute value: Problem type 2
 - ◇ Integer addition: Problem type 1
 - ◇ Integer addition: Problem type 2
 - ◇ Integer subtraction: Problem type 1
 - ◇ Integer subtraction: Problem type 2
 - ◇ Integer subtraction: Problem type 3
 - ◇ Integer multiplication and division
 - ◇ Order of operations with integers
- Rational Numbers (65 topics)
 - ◆ Equivalent Fractions, Place Value, Rounding, and Ordering (18 topics)
 - ◇ Introduction to fractions
 - ◇ Writing ratios for real-world situations
 - ◇ Understanding equivalent fractions
 - ◇ Equivalent fractions
 - ◇ Introduction to simplifying a fraction
 - ◇ Simplifying a fraction
 - ◇ Fractional position on a number line
 - ◇ Plotting fractions on a number line
 - ◇ Plotting rational numbers on a number line
 - ◇ Ordering fractions with the same denominator
 - ◇ Ordering fractions with the same numerator
 - ◇ Using a common denominator to order fractions
 - ◇ Decimal place value: Tenths and hundredths
 - ◇ Decimal place value: Hundreds to ten thousandths
 - ◇ Rounding decimals
 - ◇ Introduction to ordering decimals
 - ◇ Ordering decimals
 - ◇ Ordering fractions and decimals
 - ◆ Operations with Fractions (11 topics)
 - ◇ Addition or subtraction of fractions with the same denominator
 - ◇ Introduction to addition or subtraction of fractions with different denominators
 - ◇ Addition or subtraction of fractions with different denominators
 - ◇ Fractional part of a circle

- ◇ The reciprocal of a number
- ◇ Product of a unit fraction and a whole number
- ◇ Product of a fraction and a whole number: Problem type 1
- ◇ Introduction to fraction multiplication
- ◇ Fraction multiplication
- ◇ Multi–step word problem involving fractions and multiplication
- ◇ Fraction division
- ◆ Mixed Numbers (10 topics)
 - ◇ Writing a mixed number and an improper fraction for a shaded region
 - ◇ Writing an improper fraction as a mixed number
 - ◇ Writing a mixed number as an improper fraction
 - ◇ Addition or subtraction of mixed numbers with the same denominator
 - ◇ Addition of mixed numbers with the same denominator and carry
 - ◇ Mixed number subtraction with the same denominator and renaming
 - ◇ Addition or subtraction of mixed numbers with different denominators
 - ◇ Mixed number multiplication: Problem type 1
 - ◇ Mixed number multiplication: Problem type 2
 - ◇ Mixed number division
- ◆ Conversion between Fractions and Decimals (6 topics)
 - ◇ Converting a decimal to a proper fraction in simplest form: Advanced
 - ◇ Converting a fraction with a denominator of 10, 100, or 1000 to a decimal
 - ◇ Converting a fraction to a terminating decimal
 - ◇ Converting a fraction to a repeating decimal
 - ◇ Converting a decimal to a mixed number
 - ◇ Converting a mixed number to a decimal
- ◆ Operations with Decimals (16 topics)
 - ◇ Addition of aligned decimals
 - ◇ Decimal addition with 3 numbers
 - ◇ Subtraction of aligned decimals
 - ◇ Word problem with one decimal operation: Problem type 1
 - ◇ Word problem with one decimal operation: Problem type 2
 - ◇ Estimating a decimal sum or difference
 - ◇ Multiplication of a decimal by a power of ten
 - ◇ Multiplying a decimal by a whole number
 - ◇ Decimal multiplication: Problem type 1
 - ◇ Decimal multiplication: Problem type 2
 - ◇ Word problem with powers of ten
 - ◇ Word problem with multiple decimal operations: Problem type 1
 - ◇ Division of a decimal by a power of ten
 - ◇ Division of a decimal by a whole number
 - ◇ Division of a decimal by a 2–digit decimal
 - ◇ Word problem with multiple decimal operations: Problem type 2
- ◆ Signed Numbers (4 topics)
 - ◇ Signed fraction addition or subtraction: Basic
 - ◇ Signed fraction multiplication: Advanced
 - ◇ Signed decimal addition and subtraction
 - ◇ Signed decimal addition and subtraction with 3 numbers
- Measurement, Proportion, Percents, and Probability (45 topics)
 - ◆ Measurement (18 topics)
 - ◇ Measuring length to the nearest inch
 - ◇ Measuring length to the nearest quarter or half inch
 - ◇ U.S. Customary unit conversion with whole number values
 - ◇ U.S. Customary unit conversion with whole number values: Two–step conversion

- ◇ U.S. Customary unit conversion with mixed number values: One–step conversion
- ◇ U.S. Customary unit conversion with mixed number values: Two–step conversion
- ◇ Conversions involving measurements in feet and inches
- ◇ Adding measurements in feet and inches
- ◇ Measuring length to the nearest centimeter
- ◇ Measuring length to the nearest millimeter
- ◇ Metric distance conversion with whole number values
- ◇ Metric mass or volume conversion with whole number values
- ◇ Metric distance conversion with decimal values
- ◇ Metric conversion with decimal values: Two–step problem
- ◇ Converting between metric and U.S. Customary unit systems
- ◇ Time unit conversion with whole number values
- ◇ Adding time
- ◇ Elapsed time
- ◆ Proportions (6 topics)
 - ◇ Word problem on unit rates associated with ratios of whole numbers: Decimal answers
 - ◇ Solving a word problem involving rates and time conversion
 - ◇ Solving a proportion of the form $x/a = b/c$
 - ◇ Solving a word problem on proportions using a unit rate
 - ◇ Word problem on proportions: Problem type 1
 - ◇ Word problem on proportions: Problem type 2
- ◆ Percents (15 topics)
 - ◇ Finding the percentage of a grid that is shaded
 - ◇ Converting between percentages and decimals
 - ◇ Converting a percentage to a fraction in simplest form
 - ◇ Converting a fraction to a percentage: Denominator of 20, 25, or 50
 - ◇ Finding a percentage of a whole number without a calculator: Basic
 - ◇ Writing a ratio as a percentage without a calculator
 - ◇ Finding the sale price without a calculator given the original price and percent discount
 - ◇ Finding the original price given the sale price and percent discount
 - ◇ Finding the percentage increase or decrease: Advanced
 - ◇ Finding simple interest without a calculator
 - ◇ Computing a percentage from a table of values
 - ◇ Making a reasonable inference based on proportion statistics
 - ◇ Interpreting a circle graph or pie chart
 - ◇ Computations from a circle graph
 - ◇ Angle measure in a circle graph
- ◆ Probability (6 topics)
 - ◇ Outcomes and event probability
 - ◇ Introduction to the probability of an event
 - ◇ Probability of an event
 - ◇ Probability of independent events
 - ◇ Probability of dependent events
 - ◇ Probabilities involving two dice
- Variable Expressions and Equations (58 topics)
 - ◆ Properties of Numbers and Variables Expressions (12 topics)
 - ◇ Introduction to properties of addition
 - ◇ Introduction to properties of multiplication
 - ◇ Understanding the distributive property
 - ◇ Distributive property: Whole number coefficients
 - ◇ Distributive property: Integer coefficients
 - ◇ Combining like terms: Integer coefficients
 - ◇ Combining like terms: Advanced

- ◇ Combining like terms in a quadratic expression
- ◇ Evaluating an algebraic expression: Whole numbers with two operations
- ◇ Evaluating a linear expression: Integer multiplication with addition or subtraction
- ◇ Writing a one-step expression for a real-world situation
- ◇ Writing a one-step variable expression for a real-world situation
- ◆ Linear Equations (11 topics)
 - ◇ Additive property of equality with whole numbers
 - ◇ Additive property of equality with decimals
 - ◇ Additive property of equality with fractions and mixed numbers
 - ◇ Additive property of equality with integers
 - ◇ Additive property of equality with a negative coefficient
 - ◇ Multiplicative property of equality with whole numbers
 - ◇ Multiplicative property of equality with signed fractions
 - ◇ Solving a two-step equation with integers
 - ◇ Solving a two-step equation with signed fractions
 - ◇ Solving a linear equation with several occurrences of the variable: Variables on the same side and distribution
 - ◇ Solving a linear equation with several occurrences of the variable: Variables on both sides and distribution
- ◆ Applications of Linear Equations (8 topics)
 - ◇ Introduction to algebraic symbol manipulation
 - ◇ Translating a sentence into a one-step equation
 - ◇ Writing a multi-step equation for a real-world situation
 - ◇ Solving a fraction word problem using a linear equation of the form $Ax = B$
 - ◇ Solving a word problem with two unknowns using a linear equation
 - ◇ Solving a decimal word problem using a linear equation with the variable on both sides
 - ◇ Solving a decimal word problem using a linear equation of the form $Ax + B = C$
 - ◇ Solving a fraction word problem using a linear equation with the variable on both sides
- ◆ Inequalities (3 topics)
 - ◇ Solving a linear inequality: Problem type 1
 - ◇ Solving a linear inequality: Problem type 2
 - ◇ Solving a linear inequality: Problem type 3
- ◆ Exponents and Polynomials (24 topics)
 - ◇ Introduction to exponents
 - ◇ Power of 10: Positive exponent
 - ◇ Power of 10: Negative exponent
 - ◇ Scientific notation with positive exponent
 - ◇ Scientific notation with negative exponent
 - ◇ Evaluating expressions with exponents: Problem type 1
 - ◇ Order of operations with integers and exponents
 - ◇ Square root of a perfect square
 - ◇ Estimating a square root
 - ◇ Simplifying the square root of a whole number less than 100
 - ◇ Cube root of an integer
 - ◇ Introduction to the product rule of exponents
 - ◇ Ordering numbers with positive exponents
 - ◇ Product rule with positive exponents: Multivariate
 - ◇ Quotient of expressions involving exponents
 - ◇ Power rules with positive exponents
 - ◇ Evaluating a quadratic expression: Integers
 - ◇ Simplifying a sum or difference of three univariate polynomials
 - ◇ Multiplying binomials with leading coefficients of 1
 - ◇ Greatest common factor of two multivariate monomials

- ◇ Factoring a quadratic with leading coefficient 1
- ◇ Factoring a difference of squares
- ◇ Solving an equation written in factored form
- ◇ Finding the roots of a quadratic equation with leading coefficient 1
- Functions and Graphs (29 topics)
 - ◆ Data and Graphs (7 topics)
 - ◇ Interpreting a bar graph
 - ◇ Interpreting a double bar graph
 - ◇ Interpreting a line graph
 - ◇ Mode of a data set
 - ◇ Mean and median of a data set
 - ◇ Finding the value for a new score that will yield a given mean
 - ◇ Finding if a question can be answered by the data
 - ◆ Functions and Sequences (6 topics)
 - ◇ Writing a function rule given a table of ordered pairs: One–step rules
 - ◇ Function tables with two–step rules
 - ◇ Reading a point in the coordinate plane
 - ◇ Plotting a point in the coordinate plane
 - ◇ Finding the next terms of a sequence with whole numbers
 - ◇ Describing an increasing or decreasing pattern from a table of values
 - ◆ Graphing Equations (16 topics)
 - ◇ Finding a solution to a linear equation in two variables
 - ◇ Determining whether given points lie on one, both, or neither of 2 lines given equations
 - ◇ Graphing a line given its equation in slope–intercept form
 - ◇ Graphing a line given its x– and y–intercepts
 - ◇ Graphing a line through a given point with a given slope
 - ◇ Graphing a vertical or horizontal line
 - ◇ Finding slope given the graph of a line on a grid
 - ◇ Finding slope given two points on the line
 - ◇ Finding the slope of a line given its equation
 - ◇ Finding the y–intercept of a line given its equation
 - ◇ Finding x– and y–intercepts of a line given the equation: Advanced
 - ◇ Writing an equation and drawing its graph to model a real–world situation: Advanced
 - ◇ Interpreting the graphs of two functions
 - ◇ Distance between two points in the plane: Exact answers
 - ◇ Midpoint of a line segment in the plane
 - ◇ Graphing a parabola of the form $y = ax^2$
- Geometry (63 topics)
 - ◆ Lines and Angles (9 topics)
 - ◇ Naming segments, rays, and lines
 - ◇ Identifying parallel and perpendicular lines
 - ◇ Measuring an angle with the protractor
 - ◇ Acute, obtuse, and right angles
 - ◇ Finding supplementary and complementary angles
 - ◇ Identifying corresponding and alternate angles
 - ◇ Identifying supplementary and vertical angles
 - ◇ Solving equations involving vertical angles
 - ◇ Solving equations involving angles and a pair of parallel lines
 - ◆ Triangles (12 topics)
 - ◇ Acute, obtuse, and right triangles
 - ◇ Classifying scalene, isosceles, and equilateral triangles by side lengths or angles
 - ◇ Identifying and naming congruent triangles
 - ◇ Area of a triangle

- ◇ Finding an angle measure of a triangle given two angles
- ◇ Finding angle measures of a right or isosceles triangle given angles with variables
- ◇ Finding an angle measure for a triangle with an extended side
- ◇ Pythagorean Theorem
- ◇ Relationship between angle measures and side lengths in a triangle
- ◇ Sine, cosine, and tangent ratios: Variables for side lengths
- ◇ Using a trigonometric ratio to find a side length in a right triangle
- ◇ Using trigonometry to find a length in a word problem with one right triangle
- ◆ Quadrilaterals and Other Polygons (18 topics)
 - ◇ Identifying parallelograms, rectangles, and squares
 - ◇ Perimeter of a square or a rectangle
 - ◇ Perimeter of a polygon
 - ◇ Sides of polygons having the same perimeter
 - ◇ Finding the missing length in a figure
 - ◇ Perimeter of a piecewise rectangular figure
 - ◇ Area of a square or a rectangle
 - ◇ Distinguishing between the area and perimeter of a rectangle
 - ◇ Areas of rectangles with the same perimeter
 - ◇ Finding the side length of a rectangle given its perimeter or area
 - ◇ Finding a side length given the perimeter and side lengths with variables
 - ◇ Area of a parallelogram
 - ◇ Area of a trapezoid
 - ◇ Area of a piecewise rectangular figure
 - ◇ Word problem involving the area between two rectangles
 - ◇ Area involving rectangles and triangles
 - ◇ Finding the perimeter or area of a rectangle given one of these values
 - ◇ Area of quadrilaterals in the coordinate plane
- ◆ Circles (7 topics)
 - ◇ Introduction to a circle: Diameter, radius, and chord
 - ◇ Circumference of a circle
 - ◇ Perimeter involving rectangles and circles
 - ◇ Circumference and area of a circle
 - ◇ Word problem involving the area between two concentric circles
 - ◇ Area involving rectangles and circles
 - ◇ Area involving inscribed figures
- ◆ Volume and Surface Area (11 topics)
 - ◇ Classifying solids
 - ◇ Volume of a rectangular prism made of unit cubes
 - ◇ Volume of a rectangular prism
 - ◇ Volume of a piecewise rectangular prism
 - ◇ Volume of a pyramid
 - ◇ Volume of a cylinder
 - ◇ Volume of a cone: Exact answers in terms of pi
 - ◇ Word problem involving the rate of filling or emptying a cylinder
 - ◇ Vertices, edges, and faces of a solid
 - ◇ Nets of solids
 - ◇ Surface area of a cube or a rectangular prism
- ◆ Similarity and Transformations (6 topics)
 - ◇ Identifying congruent shapes on a grid
 - ◇ Identifying similar or congruent shapes on a grid
 - ◇ Similar polygons
 - ◇ Similar right triangles
 - ◇ Indirect measurement

◇ Computing ratios of side lengths, surface areas, and volumes for similar solids

• Other Topics Available(*) (33 additional topics)

◆ Whole Numbers and Integers (3 topics)

- ◇ Expanded form
- ◇ Divisibility rules for 2, 5, and 10
- ◇ Divisibility rules for 3 and 9

◆ Rational Numbers (2 topics)

- ◇ Signed fraction addition or subtraction: Advanced
- ◇ Computing distances between decimals on the number line

◆ Measurement, Proportion, Percents, and Probability (5 topics)

- ◇ U.S. Customary area unit conversion with whole number values
- ◇ Metric area unit conversion with decimal values
- ◇ Converting between compound units: Basic
- ◇ Converting between compound units: Advanced
- ◇ Area as probability

◆ Variable Expressions and Equations (10 topics)

- ◇ Solving a proportion of the form $a/(x+b) = c/x$
- ◇ Translating a sentence by using an inequality symbol
- ◇ Graphing a linear inequality on the number line
- ◇ Multiplying and dividing numbers written in scientific notation
- ◇ Evaluating expressions with exponents: Problem type 2
- ◇ Square root of a rational perfect square
- ◇ Least common multiple of two monomials
- ◇ Factoring a quadratic with leading coefficient greater than 1
- ◇ Finding the roots of a quadratic equation with leading coefficient greater than 1
- ◇ Solving a radical equation that simplifies to a linear equation: One radical, basic

◆ Functions and Graphs (6 topics)

- ◇ Constructing a bar graph for non–numerical data
- ◇ How changing a value affects the mean and median
- ◇ Writing a function rule given a table of ordered pairs: Two–step rules
- ◇ Graphing a line given its equation in standard form
- ◇ Writing an equation of a line given the y –intercept and another point
- ◇ Writing the equation of a line given the slope and a point on the line

◆ Geometry (7 topics)

- ◇ Drawing an angle with the protractor
- ◇ Finding an angle measure for a triangle sharing a side with another triangle
- ◇ Naming polygons
- ◇ Properties of quadrilaterals
- ◇ Finding the radius or the diameter of a circle given its circumference
- ◇ Circumference ratios
- ◇ Volume of a triangular prism

Other Topics Available *By default, these topics are NOT included in the course, but can be added using the content editor in the Teacher Module.*