GED® Test: Mathematical Reasoning
Performance Level Descriptors
What Your Score Means: Level 1 — Below Passing

Test-takers who score at this level typically have a **limited but developing** proficiency in demonstrating skills in the following categories: number sense and computation, geometric measurement, data analysis and statistics, and algebraic expressions and functions.

Test-takers at the Below Passing level typically demonstrate the following skills:

**Quantitative Problem Solving with Rational Numbers**
- Apply number properties involving multiples and factors at a limited and inconsistent level
- Solve real-world problems using rational numbers at a limited and inconsistent level
- Compute unit rates at a limited and inconsistent level

**Quantitative Problem Solving in Measurement**
- Compute the area and perimeter of triangles and rectangles at a limited and inconsistent level
- Determine side lengths of triangles and rectangles when given area or perimeter at a limited and inconsistent level
- Represent, display, and interpret categorical data in circle and bar graphs
- Represent, display, and interpret categorical data in tables and scatter plots

**Algebraic Problem Solving with Expressions and Equations**
- Evaluate linear expressions
- Write linear expressions to represent context at a limited and inconsistent level
- Evaluate polynomial expressions at a limited and inconsistent level
- Write rational expressions to represent context at a limited and inconsistent level
- Solve real-world problems involving linear equations at a limited and inconsistent level
- Solve algebraic and real-world problems involving systems of equations

**Algebraic Problem Solving with Graphs and Functions**
- Locate and plot points in the coordinate plane
• Interpret unit rate as the slope in a proportional relationship at a limited and inconsistent level
• For a linear or nonlinear relationship, sketch graphs and interpret key features of graphs and tables in terms of quantities
• Compare two different proportional relationships, each represented in different ways, at a limited and inconsistent level
• Represent or identify a function in a table or graph as having exactly one output for each input at a limited and inconsistent level
• Evaluate linear and quadratic functions at a limited and inconsistent level

In order to progress to the Pass/High School Equivalency level, test-takers need to:

1) continue to strengthen the skills listed in the Below Pass level, including:

   - Apply number properties involving multiples and factors
   - Solve real-world problems using rational numbers
   - Compute unit rates
   - Compute the area and perimeter of triangles and rectangles
   - Determine side lengths of triangles and rectangles when given area or perimeter
   - Write linear expressions to represent context
   - Evaluate polynomial expressions
   - Write rational expressions to represent context
   - Solve real-world problems involving linear equations
   - Interpret unit rate as the slope in a proportional relationship
   - Compare two different proportional relationships, each represented in different ways
   - Represent or identify a function in a table or graph as having exactly one output for each input
   - Evaluate linear and quadratic functions

and

2) develop the following additional skills:

   - Order fractions and decimals, including on a number line
   - Simplify numerical expressions with rational exponents
   - Identify absolute value of a rational number as its distance from 0 on the number line and determine the distance between two rational numbers on the number line
   - Perform computations with rational numbers
   - Compute numerical expressions with squares and square roots of positive, rational numbers
   - Compute numerical expressions with cubes and cube roots of positive, rational numbers
   - Determine when a numerical expression is undefined
   - Use scale factors to determine the magnitude of a size change, and convert between actual drawings and scale drawings
   - Solve arithmetic and real-world problems involving ratios and proportions a satisfactory level
   - Solve multi-step arithmetic and real-world problems involving percents
   - Compute the area and circumference of circles
   - Determine the radius and diameter of circles when given area or circumference
   - Compute the area and perimeter of polygons
- Determine side lengths of polygons when given area or perimeter
- Compute the area and perimeter of composite figures
- Use the Pythagorean theorem to determine unknown side lengths in a right triangle
- Compute volume and surface area of rectangular prisms
- Determine side lengths and height of rectangular prisms when given volume or surface area
- Compute volume and surface area of cylinders
- Determine radius, diameter, and height of cylinders, when given volume or surface area
- Compute volume and surface area of right prisms
- Determine side lengths and height of right prisms when given volume or surface area
- Determine side lengths and height of right pyramids and cones when given volume or surface area
- Compute volume and surface area of spheres
- Determine radius and diameter of spheres when given volume or surface area
- Compute volume and surface area of composite figures
- Represent, display, and interpret categorical data in dot plots, histograms, and box plots
- Calculate the median, mode, and weighted average, and calculate a missing data value, given the average and all the missing data values but one
- Use counting techniques to solve problems and determine combinations and permutations
- Compute with linear expressions
- Write linear expressions to represent context
- Evaluate linear expressions
- Compute with polynomials
- Factor polynomial expressions
- Write polynomial expressions to represent context
- Evaluate rational expressions
- Solve linear equations in one variable
- Write linear equations to represent context
- Solve linear inequalities in one variable
- Identify or graph the solution to a one variable linear inequality on a number line
- Solve real-world problems involving inequalities
- Write linear equations to represent context
- Solve quadratic equations in one variable
- Write quadratic equations to represent context
- Determine the slope of a line from a graph, equation, or table
- Graph two-variable linear equations
- Write the equation of a line with a given slope through a given point
- Write the equation of a line passing through two given distinct points
- Use slope to identify parallel and perpendicular lines and to solve geometric problems
- Compare two different linear or quadratic functions, each represented in different ways