**Math**

\*Note: Skills not given specific questions are accomplished through the entirety of the test,

**Section 1: Quantitative Problem Solving with Rational Numbers**

* Order fractions and decimals, including on a number line
  + Questions 1-3 (easy, medium, hard)
* Apply number properties involving multiples and factors
  + Questions 4-6 (easy, hard, medium)
* Simplify numerical expressions with rational exponents at a satisfactory level
* 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
  + Questions 7-9 (hard, medium, easy)
* Compute with rational numbers at a satisfactory level
* Compute with squares and square roots of positive, rational numbers at a satisfactory level
  + Questions 10-12 (medium, easy, hard)
* Compute with cubes and cube roots of positive, rational numbers
* Determine when a numerical expression is undefined
  + Questions 13-15 (easy, hard, medium)
* Solve problems involving rational numbers at a satisfactory level
* Compute unit rates at a satisfactory level
  + Questions 16-17 (hard, easy)
* Use scale factors to determine the magnitude of a size change and convert between actual drawings and scale drawings
  + Questions 18-19 (easy, hard)
* Solve multistep problems involving ratios and proportions
  + Questions 20-21 (easy, hard)
* Solve two-step problems involving percents at a satisfactory level
  + Questions 22-23 (hard, easy)

**Section 2: Quantitative Problem Solving in Measurement**

* Compute the area and perimeter of triangles and rectangles at a satisfactory level
  + Questions 1-2 (easy, hard)
* Determine the height or side lengths of a triangle or rectangle at a satisfactory level, when given area or perimeter
  + Questions 3-4 (easy, hard)
* Compute the area and circumference of circles
  + Questions 5-6 (easy, hard)
* Determine the radius or diameter of a circle when given area or circumference
* Compute the area and perimeter of polygons
  + Questions 2 (hard), Question 7 (easy)
* Determine the side lengths of a polygon when given area or perimeter
  + Questions 8-9 (easy, hard)
* Compute the area and perimeter of composite two-dimensional figures
* Use the Pythagorean Theorem to determine unknown side lengths in a right triangle
  + Questions 10-11 (easy, hard)
* Compute the volume and surface area of rectangular prisms at a satisfactory level
  + Questions 12-13 (hard, easy)
* Solve for height or side lengths of rectangular prisms at a satisfactory level, when given volume or surface area
  + Questions 14-15 (easy, hard)
* Compute the volume and surface area of cylinders
  + Questions 16-17 (hard, easy)
* Solve for height, radius, or diameter of cylinders when given volume or surface area
  + Question 18
* Compute the volume and surface area of right prisms
  + Questions 19-20 (easy, hard)
* Solve for height or side lengths of right prisms when given volume or surface area
* Compute the volume and surface area of right pyramids and cones
  + Questions 21-22 (easy, hard)
* Solve for side lengths, height, radius, or diameter of right pyramids and cones when given volume or surface area
  + Question 24
* Compute the volume and surface area of spheres
  + Question 23
* Solve for radius or diameter of spheres when given volume or surface area
  + Question 25
* Compute the volume and surface area of composite three-dimensional figures
* Represent, display, and interpret categorical data in bar graphs or circle graphs, at a satisfactory level
  + Questions 26-27 (hard, easy)
* Represent, display, and interpret data involving one variable plots on the real number line including dot plots, histograms, and box plots
  + Questions 28-29(hard, easy)
* Represent, display, and interpret data involving two variables in tables and the coordinate plane including scatter plots and graphs, at a satisfactory level
  + Questions 30-31(easy, hard)
* Calculate the mean, median, mode, range, and weighted average, and calculate a missing data value, given the average and all the missing data values but one, at a satisfactory level
  + Questions 32-33 (hard, easy)
* Use counting techniques to solve problems and determine combinations and permutations
  + COMBINATION Questions 34-35 (hard, easy)
  + PERMUTATION Questions 36-37 (hard, easy)
* Determine the probability of simple and compound events
  + Questions 38-39 (easy, hard)

**Section 3: Algebraic Problem Solving with Expressions and Equations**

* Compute with and factor linear expressions
  + Questions 1-2 (easy, hard)
* Evaluate linear expressions at a satisfactory level
  + Questions 3-4 (hard, easy)
* Write linear expressions when given written descriptions, at a satisfactory level
  + Questions 5-6 (hard, easy)
* Compute with polynomials
  + Questions 7-8 (easy, hard)
* Evaluate polynomial expressions at a satisfactory level
* Factor polynomials
* Write polynomial expressions when given written descriptions
  + Questions 9-10 (easy, hard)
* Compute with rational expressions at a satisfactory level
  + Questions 11-12 (easy, hard)
* Evaluate rational expressions at a satisfactory level
* Write rational expressions when given written descriptions
  + Questions 13-14 (easy, hard)
* Solve one-variable linear equations at a satisfactory level
  + Questions 15-16 (easy, hard)
* Solve real-world problems involving linear equations at a satisfactory level
  + Questions 17-18 (easy, hard)
* Write one-variable and multi-variable linear equations to represent context
* Solve a system of two simultaneous linear equations and solve real-world problems leading to a system of linear equations, at a satisfactory level
* Solve one-variable linear inequalities
* Identify or graph the solution to a one variable linear inequality on a number line
  + Questions 19-20 (hard, easy)
* Write one-variable and multi-variable linear inequalities to represent context
  + Questions 21-22 (hard, easy)
* Solve real-world problems involving inequalities
* Solve quadratic equations in one variable with real solutions
  + Questions 23-24 (easy, hard)
* Write one-variable quadratic equations to represent context
  + Questions 25-26 (hard, easy)

**Section 4: Algebraic Problem Solving with Graphs and Functions**

* Locate points in the coordinate plane at a satisfactory level
  + Questions 1-2 (easy, hard)
* Determine the slope of a line from a graph, equation, or table
  + Questions 3-4 (easy, hard)
* Interpret unit rate as the slope in a proportional relationship
* Graph two-variable linear equations on the coordinate plane
  + Questions 5-6 (hard, easy)
* For a function that models a linear or nonlinear relationship, sketch graphs and interpret key features of graphs and tables in terms of quantities, at a satisfactory level
* Write the equation of a line with a given slope and a given point
  + Questions 7-8 (easy, hard)
* Write the equation of a line passing through two given distinct points
  + Questions 9-10 (hard, easy)
* Use slope to identify parallel and perpendicular lines and to solve geometric problems
  + Questions 11-12 (easy, hard)
* Compare two different proportional relationships, each represented in different ways, at a satisfactory level
* Represent or identify a function in a table or graph as having exactly one output for each input, at a satisfactory level
  + Questions 13-14 (easy, hard)
* Evaluate linear and quadratic functions at a satisfactory level
* Compare two linear or quadratic functions, each represented in different ways