Reporting Categories and Performance Level Indicators for the *Gateway* Mathematics Operational Test

Reporting Category, Objective, and Subskill
A. Number Sense and Number Theory **Number Sense and Number Theory** 1.1.A Select the best estimate for the coordinate of a given point on a number line (only rational) 1.1.B Identify the opposite of a rational number 1.1.C Determine the square root of perfect square less than 169 1.2.A Order a given set of rational numbers (both fraction and decimal notations) 1.2.B Identify the reciprocal of a rational number 1.2.C Select ratios and proportions to represent real-world problems (e.g., scale drawings, sampling, etc.) **Estimation, Measurement and Computation** 2.1.A Apply order of operations when computing with integers using no more than two sets of grouping symbols and exponents 1 and 2 2.1.C Select a reasonable solution for a real-world division problem in which the remainder must be considered 2.2.C Use estimation to determine a reasonable solution for a tedious arithmetic computation
B. Algebraic Expressions **Number Sense and Number Theory** 1.1.D Use exponents to simplify a monomial written in expanded form **Estimation, Measurement and Computation** 2.2.A Add and subtract algebraic expressions 2.2.B Multiply two polynomials with each factor having no more than two terms 2.3.A Select the area representation for a given product of two one-variable binomials with positive constants and coefficients **Patterns, Functions, and Algebraic Thinking** 3.1.B Extend a numerical pattern 3.1.C Translate a verbal expression into an algebraic expression 3.1.D Evaluate a first degree algebraic expression given values for one or more variables 3.2.I Evaluate an algebraic expression given values for one or more variables using grouping symbols and/or exponents less than four

Table 3 (continued)
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Reporting Category, Objective, and Subskill
C. Equations and Inequalities
Patterns, Functions, and Algebraic Thinking
3.1.E Solve one- and 2-step linear equations using integers (with integral coefficients and constants)
3.2.A Select the algebraic notation which generalizes the pattern represented by data in a given table
3.2.B Translate a verbal sentence into an algebraic equation
3.2.D Solve multi-step linear equations (more than two steps, variables on only one side of the equation)
3.2.E Solve multi-step linear equations (more than two steps, with variables on both sides of the equation)
3.2.F Solve multi-step linear equations (more than two steps, with one set of parentheses on each side of the equation)
3.2.L Select the appropriate graphical representation of a given linear inequality
3.2.N Identify the graphical representation of the solution to a one variable inequality on a number line
D. Real World Problems
Number Sense and Number Theory
1.3.A Apply the concept of slope to represent rate of change in a real-world situation
Estimation, Measurement and Computation
2.1.B Calculate rates involving cost per unit to determine the best buy (no more than three samples)
Patterns, Functions, and Algebraic Thinking
3.2.K Apply the concept of rate of change to solve real-world problems
3.3.A Solve multi-step linear inequalities in real-world situations
Statistics and Probability
4.1.B Determine the mean (average) of a given set of real-world data (no more than five two-digit numbers)
4.1.C Interpret bar graphs representing real-world data
4.1.D Interpret circle graphs (pie charts) representing real-world data
4.2.C Determine the median for a given set of real-world data (even number of data)
4.3.A Apply counting principles of permutations or combinations in real-world situations

Table 3 (concluded)
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Reporting Category, Objective, and Subskill
E. Graphs and Graphing **Patterns, Functions, and Algebraic Thinking** 3.2.C Select the graph that represents a given linear function expressed in slope-intercept form 3.2.G Select the linear graph that models the given real-world situation described in a narrative (no data set given) 3.2.H Select the linear graph that models the given real-world situation described in a tabular set of data 3.2.J Determine the slope from the graph of a linear equation (no labeled points) 3.2.M Select the non-linear graph that models the given real-world situation or vice versa 3.3.B Recognize the graphical transformation that occurs when coefficients and/or constants of the corresponding linear equations are changed 3.3.C Determine the domain and/or range of a function represented by the graph of real-world situations **Statistics and Probability** 4.1.A Identify ordered pairs in the coordinate plane 4.2.A Choose the matching linear graph given a set of ordered pairs 4.2.B Make a prediction from the graph of a real-world linear data set
F. Spatial Sense and Geometric Concepts **Patterns, Functions, and Algebraic Thinking** 3.1.A Extend a geometric pattern **Spatial Sense and Geometric Concepts** 5.1.A Estimate the area of irregular geometric figures on a grid 5.1.B Apply the given formula to determine the area or perimeter of a rectangle 5.2.A Apply the given formula to find the area of a circle, the circumference of circle, or the volume of a rectangular solid 5.2.B Apply the given Pythagorean theorem to a real-life problem illustrated by a diagram (no radicals in answer) 5.2.C Apply proportion and the concepts of similar triangles to find the length of a missing side of a triangle 5.3.A Calculate the distance between two points given the Pythagorean theorem and the distance formula