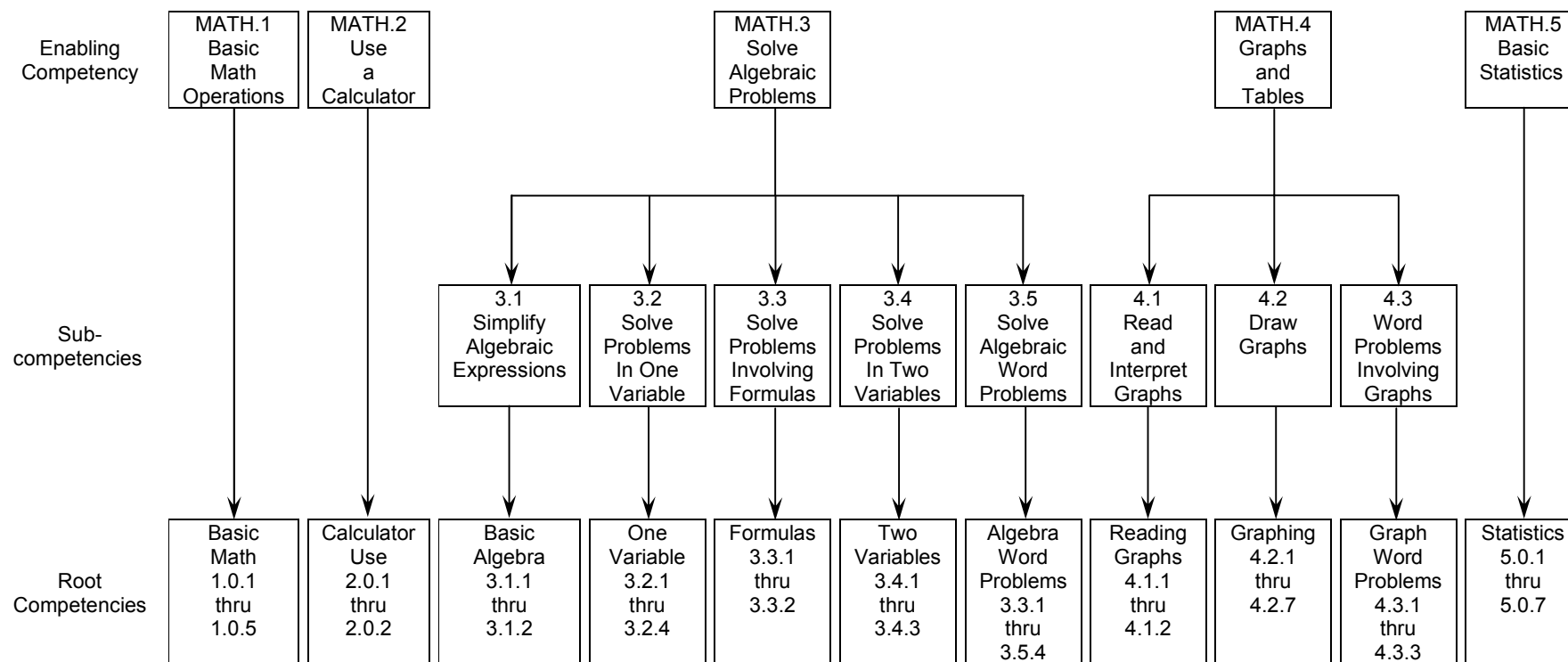




College Graduate Competency – GRAD-MATH-1 MATHEMATICS RUBRIC (Document 1 of 2)



Basic assessment will be at the enabling competency level. If students are not proficient in one or more of the enabling competencies, then sub-competencies and root competencies will be evaluated to determine the deficiency. Corrective action(s) for teaching that competency will be taken.

Graduate Mathematics Enabling, Sub, and Root Competencies

Solve problems using mathematics

MATH.1 Solve problems using basic mathematical operations

- 1.0.1 Solve mathematical problems involving addition, subtraction, multiplication, division, and powers of real (signed) numbers.
- 1.0.2 Solve mathematical problems involving addition, subtraction, multiplication, division, and powers of fractions.
- 1.0.3 Solve mathematical problems involving addition, subtraction, multiplication, division, and powers decimal numbers.
- 1.0.4 Solve mathematical problems that contain parenthesis.
- 1.0.5 Solve mathematical problems that require the proper application of the order of operations.

MATH.2 Use a calculator or computer to perform mathematical calculations

- 2.0.1 Use a calculator to solve problems containing a combination of addition, subtraction, multiplication, and division.
- 2.0.2 Use a calculator to solve problems containing powers and roots.

MATH.3 Solve algebraic equations.

3.1 Simplify algebraic expressions.

- 3.1.1 Simplify algebraic expressions by combining terms.
- 3.1.2 Use the distributive property to simplify algebraic expressions.

3.2 Solve algebraic problems in one variable.

- 3.2.1 Use the addition property to solve linear equations containing whole numbers, fractions, and/or decimals in one variable.
- 3.2.2 Use the multiplication property to solve linear equations containing whole numbers, fractions, and/or decimals in one variable.
- 3.2.3 Use a combination of the addition and multiplication properties to solve linear equations containing whole numbers, fractions, and/or decimals in one variable.
- 3.2.4 Use the substitution to verify the correct solution of a linear equation.

3.3 Solve problems involving formulas.

- 3.3.1 Solve formulas by substituting numerical values for variables.
- 3.3.2 Use the addition and /or multiplication property to solve formulas for a given variable.

3.4 Solve algebraic problems in two variables.

- 3.4.1 Solve a system of two linear equations by graphing.
- 3.4.2 Solve a system of two linear equations by the substitution method.
- 3.4.3 Solve a system of two linear equations by the addition method.

3.5 Solve word problems involving algebra.

- 3.5.1 Translate words into an algebraic expression and simplify.
- 3.5.2 Translate words into a linear equation in one variable and solve.
- 3.5.3 Solve word problems that can be modeled using linear equation in one variable. Problems may involve calculating percents, rates, mixtures, and interest.
- 3.5.4 Solve word problems that can be modeled using a system of two linear equations. Problems may involve calculating percents, rates, mixtures, and interest.

MATH.4 Create and interpret tables, graphs, and charts.

4.1 Read and interpret graphs and charts.

- 4.1.1 Read and interpret data from a bar graph.
- 4.1.2 Read and interpret data from a line graph or chart.

4.2 Draw graphs.

- 4.2.1 Give one value of an ordered pair, find the other value.
- 4.2.2 Graph a linear equation using a table of values (ordered pairs).
- 4.2.3 Graph a linear equation by finding the x- and y-intercepts.
- 4.2.4 Calculate the slope (rate of change) of a line given two points.

- 4.2.5 Rewrite an equation in the slope-intercept form and identify the slope and y-intercept.
- 4.2.6 Graph a linear equation given only the slope and y-intercept.
- 4.2.7 Write the equation of a line given the slope and a point on the line using the point-slope equation.

4.3 Solve word problems involving graphs, tables, and graphing.

- 4.3.1 Draw and interpret data from a graph that was created from a word problem containing a linear equation.
- 4.3.2 Draw and interpret data from a graph that was created from a word problem containing slope-intercept data.
- 4.3.3 Draw and interpret data from a graph that was created from a word problem containing data points.

MATH.5 Demonstrate knowledge of basic statistical concepts.

- 5.0.1 Given a set of numbers, calculate the mean.
- 5.0.2 Given a set of numbers, calculate the median.
- 5.0.3 Given a set of numbers, calculate the mode.
- 5.0.4 Given a set of grades, calculate the weighted mean.
- 5.0.5 Calculate the possible outcomes of an experiment.
- 5.0.6 Draw a tree diagram for an experiment.
- 5.0.7 Find the probability of an event.