

## **GRADE EIGHT MATHEMATICS KANSAS ASSESSED STANDARDS**

The student...

### **Knowledge Indicators**

8K.1.1.5: knows and explains what happens to the product or quotient when:

- a. a positive number is multiplied or divided by a rational number greater than zero and less than one;
- b. a positive number is multiplied or divided by a rational number greater than one;
- c. a nonzero real number is multiplied or divided by zero.

8K.1.2.2: identifies all the subsets of the real number system (natural counting numbers, whole numbers, integers, rational numbers, irrational numbers) to which a given number belongs. (For the purpose of assessment, irrational numbers will not be included.)

8K.1.4.2: performs and explains these computational procedures with rational numbers:

- a. **N** addition, subtraction, multiplication, and division of integers;
- b. **N** order of operations (evaluates within grouping symbols, evaluates powers to the second or third power, multiplies or divides in order from left to right, then adds or subtracts in order from left to right).

8K.2.2.3: solves:

- a. one- and two-step linear equations in one variable with rational number coefficients and constants intuitively and/or analytically.

8K.3.1.6: uses the Pythagorean theorem to:

- a. determine if a triangle is a right triangle;
- b. find a missing side of a right triangle where the length of all three sides are whole numbers.

8K.3.4.1: uses the coordinate plane to:

- a. list several ordered pairs on the graph of a line and finds the slope of the line;
- b. recognize that ordered pairs that lie on the graph of an equation are solutions to that equation;
- c. recognize that points that do not lie on the graph of an equation are not solutions to that equation;
- d. determine the length of a side of a figure drawn on a coordinate plane with vertices having the same x- or y- coordinates.

8K.4.1.3: finds the probability of a compound event composed of two independent events in an experiment, simulation, or situation.

8K.4.2.3: determines and explains the measures of central tendency (mode, median, mean) for a rational number data set.

## Application Indicators

8K.1.2.1: generates and/or solves real-world problems with rational numbers using the concepts of these properties to explain reasoning:

- a. commutative, associative, distributive, and substitution properties;
- b. identify and inverse properties of addition and multiplication;

8K.1.4.1: generates and/or solves one- and two-step real-world problems using computational procedures and mathematical concepts with :

- a. rational numbers;
- b. the irrational number  $\pi$  as an approximation;
- c. application of percents. (For the purpose of assessment, percents greater than or equal to 100% will be used.)

8K.2.2.1: represents real-world problems using;

- a. variables, symbols, expressions, one- or two-step equations with rational number coefficients and constants.

8K.2.3.3: translates between the numerical, tabular, graphical, and symbolic representations of linear relationships with integer coefficients and constants.

8K.2.4.2: determines if a given graphical, algebraic, or geometric model is an accurate representation of a given real-world situation.

8K.3.1.1: solves real-world problems by;

- a. using the properties of corresponding parts of similar and congruent figures.

8K.4.1.4: makes predictions based on the theoretical probability of:

- a. a simple event in an experiment or simulation.

N – Non-calculator

8K1.1.5 – Grade 8 Kansas Standard 1, Benchmark 1, Indicator 5