Grade 6 | Sweet Home Math Power Standards

Ratio and Proportional Relationships

Understand ratio concepts and use ratio reasoning to solve problems

6.RP.3—Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.
b. Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*
c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.
d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

The Number System

Apply and extend previous understanding of multiplication and division to divide fractions by fractions

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6.NS.1 – Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc) How much chocolate will each person get if 3 people share ½ lb of chocolate equally? How many ¾ cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length ¾ mile and are ½ square mile?

Compute fluently with multi-digit numbers and find common factors and multiples

6.NS.3—Fluently add, subtract, multiply and divide multi-digit decimals using the standard algorithm for each operation.

Apply and extend previous understandings of numbers to the system of rational numbers

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Expressions and Equations

Apply and extend previous understandings of arithmetic to algebraic expressions

6.EE.2—Write, read, and evaluate expressions in which letters stand for numbers.

a. Write expressions that record operations with numbers and with letters standing for numbers. *For example, express the calculation "Subtract y from 5" as 5 – y.*

b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. *For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 +7) as both a single entity and a sum of two terms.*

c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are not parentheses to specify a particular order (Order of Operations). *For example, use the formulas $V= s^2$ and $A – 6 s^3$ to find the volume and surface area of a cube with sides of lengths s=1/2.*

Reason about and solve one-variable equations and inequalities

Represent and analyze quantitative relationships between dependent and independent variables

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Geometry

Solve real-world and mathematical problems involving area, surface area, and volume

Statistics and Probability

Develop understanding of statistical variability

Summarize and describe distributions

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