Mathematics RIT Score: 231-240

Number Sense and Operations

Whole Numbers
· Divide a 2-digit number or a 3-digit number by a 1-digit number with remainder
· Divide multi-digit numbers using a calculator

Fractions
· Add fractions having unlike denominators with answer reduced to lowest terms
· Subtract fractions having unlike denominators with answer reduced to lowest terms
· Add and subtract mixed numbers with like denominators with regrouping
· Add and subtract mixed numbers with unlike denominators with regrouping
· Add and subtract whole numbers, fractions, and mixed numbers
· Multiply a fraction by a fraction; answer in lowest terms
· Multiply mixed numbers
· Divide a fraction by a fraction
· Divide a mixed number by a whole number or a fraction
· Multiply three factors using fractions, mixed numbers, and whole numbers in any combination, answer in lowest terms
· Divide a whole number, fraction, or mixed number by a mixed number

Decimals
· Add whole numbers and decimals to the hundredths place (same number of digits)
· Subtract decimals to the hundredths place (not the same number of digits)
· Subtract decimals to thousandths, vertically and horizontally, with and without regrouping
· Subtract a decimal from a whole number
· Multiply a decimal by a decimal, factors to thousandths place
· Divide a decimal by a whole number and vice versa
· Divide a whole number (or decimal) by a decimal to thousandths place

Percents
· Find the percent one number is of another (8 is what % of 20?)
· Find a number from a percent (20 is 45% of what number?)

Integers
· Add integers with unlike signs
· Add several integers
· Multiply integers with like signs
· Divide integers with like signs

New Vocabulary in this range:
'Solve for n"

New Signs and Symbols:
none

Fractions, Ratio and Proportion
· Define ratio
· Write ratios in a variety of ways

Decimals
· Write a decimal or mixed decimal for a fraction
· Write a whole number or a decimal in scientific notation (negative exponents)

Place Value, Expanded and Standard Notation
· Write numerals in expanded form through the billions
· Understand and identify place value and value of each digit in numerals through the hundred billions

Exponents and Scientific Notation
· Evaluate expressions using the order of operations that include exponents
· Find products by applying rules for exponents

Square Roots
· Identify perfect squares in a list of numbers and calculate the positive square root of a perfect square

New Vocabulary in this Range:
none

New Signs and Symbols:
none

Patterns, Functions, and Algebra

Patterns, Sequences, Functions
· Using whole numbers, complete a function table based on a given rule
· Graph linear functions, noting that the vertical change (change in y-value) per unit of horizontal change (change in x-value) is constant
· Identify linear equation for a straight line

Solving Equations and Inequalities, Simplifying Expressions, Order of Operations
· Write an algebraic expression to model a situation
· Evaluate an algebraic expression for given values
· Explore equivalent ratios involving missing variables
· Use the correct order of operations to evaluate numeric and algebraic expressions
· Simplify and evaluate expressions that include positive and negative integral components
· Simplify polynomials by combining like terms
· Use the rules of exponents to multiply and divide monomials
· Solve simple linear equations and inequalities over the rational numbers

New Vocabulary in this Range:
inequality, if-then statement, term in sequence, square numbers, negative coefficient

New Signs and Symbols:
$I = p \times r \times t$

Measurement

Length, Weight, Volume
· Find the volume of a pyramid

Area, Perimeter, Circumference
· Find the perimeter of a square or rectangle using the formula
· Find the perimeter of polygons
· Calculate the area of a parallelogram and rectangle
· Calculate the area of a triangle
· Calculate the circumference of a circle using the formula

Time, Temperature
· Convert from Celsius to Fahrenheit
· Subtract Fahrenheit temperatures

Money
· Find commission and total pay
· Compute and count change greater than $20.00

New Vocabulary in this Range:
rectangular house, height and base, algebraic expression, rows and columns, checking account, car purchase, commission, simple interest

New Signs and Symbols:
$F = 9/5\ C + 32$, formula for finding volume of a pyramid

Geometry and Spatial Sense

Symmetry and Transformations
· Understand meaning and representation of a dilation

Geometric Properties and Terminology
· Classify triangles by sides (equilateral, isosceles, and scalene) and angles (acute, obtuse, and right)
· Classify polygons by sides and angles
· Identify and discriminate between regular and irregular polygons
· Find the missing angle measurement in a triangle when two angles are known
· Solve word problems involving similar polygons
· Identify the base angles of a triangle
· Know the definition of the hypotenuse of a triangle

New Vocabulary in this Range:
transformation, hypotenuse, edge, isosceles, scalene triangle, similar trapezoids, alternate interior angles, sum of angles in triangle

New Signs and Symbols:
none

Data Analysis, Statistics, and Probability

Statistics
· Calculate range, mode, median, and mean

Graphing
· Find location of coordinates on a number line

· Place numbers in correct order on a number line

· Locate the vertex on a coordinate grid

· Create a table of (x, y) values for the given linear equation and graph the function

New Vocabulary in this Range:
vertex, fractional part, amount of sales, translation, matrix, possibility, mean salary, coordinates of points

New Signs and Symbols:
none

Problem Solving

· Use logic to predict outcomes

· Work backwards to solve problems

· Solve multi-step problems involving computation

· Find correct mathematical expressions to represent word problems

· Find simple interest earned

· Find missing numbers in a diagram by using patterns

· Use map scales to solve problems

· Solve if-then logic problems

· Solve complex word problems involving ratio, percent, discount, sale price, rounding and estimation, averaging, length, volume, rate, calendars, probability, money, and time

· Given the answer to a problem, determine the question

· Formulate expressions and equations to model problem solving situation

New Vocabulary in this Range:
regression equation

New Signs and Symbols:
none