Mathematics RIT Score: 191-200

Number Sense and Operations

Whole Numbers

· Solve simple addition word problems
· Find and extend patterns
· Demonstrate the associative, commutative, and zero property of addition
· Identify the associative, commutative, identity and zero property of multiplication
· Solve one-step word problems involving multiplication
· Subtract multi-digit numbers with regrouping
· Round 4- and 5-digit numbers to the nearest hundred thousand, thousand, hundred or ten
· Multiply a 2-digit number by a 2-digit number with no regrouping
· Multiply a 2-digit number by a 2-digit number with regrouping
· Subtract multi-digit numbers without using a calculator
· Multiply a 3-digit number by a 2-digit number with regrouping
· Multiply a 3-digit number or 4-digit number by a 2-digit number or 3-digit number with zeros

Fractions

· Express 1 in many different ways (1/ 1, 2/ 2, 4/ 4)
· Write improper fractions from picture presentations
· Subtract fractions with like denominators
· Add fractions having unlike denominators, answer in lowest terms

Decimals

· Add whole numbers and decimals to the hundredths place (not the same number of digits)
· Subtract whole numbers and decimals to the hundredths place (not the same number of digits)
· Compute basic operations with monetary amounts up to and including $20.00
· Round decimals to the nearest whole number
· Add decimals to thousandths, vertically and horizontally, with and without regrouping
· Subtract decimals to thousandths, vertically and horizontally, with and without regrouping
· Multiply a decimal by a decimal, vertical form (tenths or hundredths)

Percents

· Find a percent of a number (6% of 30)

New Vocabulary in this range:

difference, not true, power of 10, rounded, thousands

New Signs and Symbols:

¢, %

Whole Numbers

· Order numerals through 9999
· Count and convert to dozens
· Round 4- and 5-digit numbers to the nearest hundred thousand, thousand, hundred or ten
· Identify numbers as prime or composite

· Apply rules of divisibility by 2's
· Complete a factor tree for a number (prime factorization)
· Understand and demonstrate that many whole numbers break down in different ways (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)
· Identify the least common multiple of two whole numbers

Fractions, Ratio and Proportion
· Write equivalent fractions using pictorial representation
· Find equivalent fractions using multiples and factors
· Write mixed numbers as improper fractions and improper fractions as mixed numbers
· Identify the least (lowest) common denominator of two fractions
· Express a fraction as a decimal and vice versa
· Solve proportions using the cross product method

Decimals
· Write a decimal for a shaded region (to tenths place)
· Identify and understand place value for decimals (tenths, hundredths, and thousandths)

Percents
· Model percents using a 10 x 10 grid
· Write a decimal or fraction as a percent and vice versa

Place Value, Expanded and Standard Notation
· Identify the number and written word for ordinal numbers
· Write numerals in expanded form through the hundred thousands
· Match word names to numerals through billions
· Identify place value using model to count
· Add whole numbers using place value

Ordering, Equalities and Inequalities
· Identify and understand the greater or lesser of two numerals (use the symbols < and > through 999,999)
· Compare and order fractions and mixed numbers

Exponents
· Exponential representation of 3 multiplied numbers (2x2x2)

New Vocabulary in this Range:
thirds, fourths, rounded, thousands, exponential form, mixed number, improper fraction, lowest common denominator, percent, expanded form, prime, factor, proportion

New Signs and Symbols:
use of dot as a multiplication symbol

Patterns, Functions, and Algebra

Patterns, Sequences, Functions
· Count and write by 4's

Solving Equations and Inequalities, Simplifying Expressions, Order of Operations

· Use symbols of inequality, < and > to write and complete number sentences

· Solve simple addition problems with "n" as an addend or sum

· Solve simple multiplication problems with "n" as a multiple or product

· Solve simple division problems with "n" as a quotient or divisor

· Identify the base and the exponent of a given numerical expression and calculate its value

· Evaluate numerical expressions using the order of operations

· Solve whole number equations with any operation

New Vocabulary in this Range:
if-then, product, sum

New Signs and Symbols:
variables, exponents

Measurement

Length, Weight, Volume

· Measure length to the nearest millimeter, centimeter, meter, and kilometer

· Select the appropriate metric and customary unit to measure an object or distance

· Perform conversions between linear units in the customary system; also as necessary in addition or subtraction problems

· Perform conversions between units of capacity in the customary system; also as necessary in addition or subtraction problems

Area, Perimeter, Circumference

· Estimate and verify the area of a figure using square units (counting)

· Find the area of irregular shapes; using square units

· Find the perimeter of polygons

Time, Temperature

· Identify time relationships: minutes in an hour, hours in a day, days in a week, weeks in a year

Money

· Combine and identify the value of a collection of coins and bills up to and including $10.00

· Compute simple addition or subtraction problems involving monetary amounts up to $10.00

· Compute and count change up to and including $100.00

· Compute and count change greater than $20.00

New Vocabulary in this Range:
height, width, parallelogram, square, rectangle, triangle, year, ton, seconds, kilogram, distance, miles, liter

New Signs and Symbols:
mm = millimeter, a.m. and p.m., hr = hours, min = minutes

Geometry and Spatial Sense

Shapes and Figures, 2- and 3-dimensional

· Recognize solid figures: sphere (ball)

· Identify and name solid figures: cube, cylinder, cone, rectangular prism, and sphere

· Identify characteristics of plane figures (sides and corners)

Symmetry and Transformations

· Identify figures with line symmetry and symmetrical parts

Geometric Properties and Terminology

· Identify position concepts: (over, under, inside, outside, in front, behind, top, middle, bottom)

· Describe and measure right angles

· Identify right angles

· Identify intersecting, parallel lines

· Identify the diagonal of a circle

New Vocabulary in this Range:

symmetrical, parallel, intersecting, diagonal, pair, angle, cylinder, outside, inside, sphere, faces, corresponding, point, intersect, outside, axis of symmetry, line segment, pentagon

New Signs and Symbols:

symbol for parallel lines

Data Analysis, Statistics, and Probability

Probability and Prediction

· Develop concept of chance and make predictions for events (ex. rolling a number dice)

Statistics

· Use tallies to record data

· Compute averages with a given set of data

Combinations and Permutations

· Solve problems involving combinations or permutations

Graphing

· Use a number line to write number sentences using subtraction

· Solve problems using information from a bar graph

· Solve multi-step word problems with pictographs, bar graphs, or line graphs

· Construct, and solve word problems involving line graphs

· Construct and solve word problems involving circle graphs

· Read and interpret dual bar graphs and dual broken-line graphs

New Vocabulary in this Range:

average, bar graph, percentage

New Signs and Symbols:

%

Problem Solving

- Identify the correct information to solve addition and subtraction word problems
- Solve one-step word problems involving multiplication and division, including money
- Estimate the answers to word problems
- Determine what operation is needed to solve a word problem (all four operations)
- Choose and apply an appropriate problem solving strategy: Draw a picture, Make a model, Guess and test, Make a list, Make a table, Find a pattern, Work backwards, Solve a simpler problem, or Draw a diagram
- Solve word problems involving any combination of basic operations on whole numbers (one-step problems)
- Write a number sentence to solve one-step word problems involving the operations of addition, subtraction, and multiplication of fractions and decimals
- Solve multi-step word problems involving any combination of basic operations
- Construct and solve word problems involving information from a table
- Understand the concept of ratio using concrete and pictorial models
- Solve one- and two-step word problems involving any combination of basic operations on whole numbers, decimals, and fractions

New Vocabulary in this Range:
terms, meter, millimeters, kilogram, feet, yards, unit of measurement, height, thousands, hundreds, tens, table, graph, length, width, rectangular, area, square inches, exactly, coins, numeral, even, change, average, opposite, percent, subtrahend, addend, formula, circle, diameter, operation, total, fact, fraction, surfaces, cube, temperature, first – fifth (ordinal names), difference, equivalent

New Signs and Symbols:
tally marks, =, - as an integer sign, %, °C, for answer