Mathematics RIT Score: 201-210

Number Sense and Operations

Whole Numbers

· Understand the concept of division using pictorial representation
· Use front-end estimation strategy for multiplication and division
· Divide a 2-digit number by a 2-digit number with a remainder
· Subtract multi-digit numbers without using a calculator
· Multiply by multiples of 10 and 100 with an emphasis on mental math
· Divide a 3-digit number by a multiple of 10
· Divide a 3-digit number by a 2-digit number (no zeros)

Fractions

· Add mixed numbers with like denominators with regrouping
· Subtract mixed numbers with like denominators with regrouping
· Subtract mixed numbers with unlike denominators with regrouping
· Multiply a fraction by a fraction; answer in lowest terms
· Multiply mixed numbers

Decimals

· Add decimals to hundredths place using both horizontal and vertical format
· Subtract decimals to hundredths place
· Compute and count change greater than $20.00
· Subtract decimals through hundred-thousandths with a calculator

Percents

· Write a decimal or fraction as a percent; write a percent as a decimal or fraction

New Vocabulary in this range:

estimate, round, closest to, sum, of (used as in "½ of 36")

New Signs and Symbols:

square root symbol

Whole Numbers

· Round to the nearest millions and billions
· Apply rules of divisibility
· Identify the greatest common factor of two whole numbers each of which is less than 100
· Write the Roman numeral equivalent of Arabic numbers 1-2000 and vice versa

Fractions, Ratio and Proportion

· Change a fractional numeral to its simplest form (lowest terms)
· Write the missing number in two equivalent ratios
· Use a number line to identify a fractional point

Decimals

· Write a decimal for a shaded region (hundredths)

· Write a terminating decimal as a fraction or mixed number

· Round decimals to nearest whole number, tenth, hundredth, or thousandth

· Multiply a decimal by multiples of 10, 100, or 1000

Percents

· Find a percent of a number

· Write a decimal or fraction as a percent or vice versa

Place Value, Expanded and Standard Notation

· Understand and identify the place value and value of each digit in numerals through the billions

· Write the word name for a decimal and vice versa

· Write numerals in expanded form through the hundred billions

Ordering, Equalities and Inequalities

· Order numbers from least to greatest and greatest to least

· Compare and order numbers through the billions

· Order decimals and fractions to the hundred thousandths

· Identify the greater or lesser of 2 integers

· Ordering integers that include fractions and wholes

· Translate verbal statements into equations (all four operations; several operations)

· Ordering exponential values

Exponents and Scientific Notation

· Write whole number in exponential form and compute the power of a number

New Vocabulary in this Range:

missing number, pentagon, simplest fraction, biggest, hundredths, one less, decimal numeral, squared, divisible, inequality, expanded numeral, equivalent, point, standard numeral, sequence

New Signs and Symbols:

+ used as positive symbol, - used as negative symbol

Patterns, Functions, and Algebra

Patterns, Sequences, Functions

· Use of a function "machine" to determine input and output

Solving Equations and Inequalities, Simplifying Expressions, Order of Operations

· Evaluate an expression involving more than one operation (order of operations)

· Use the basic properties of multiplication to write an algebraic expression that is equivalent to a given algebraic expression

· Solve equations involving more than one operation

· Multiply and divide polynomials

· Solve equations involving rational numbers (addition and subtraction)

Properties

· Use strategies to develop computational fluency with multiplication: zero property, property of one, arrays, doubles, nine patterns

· Use the basic properties of addition to write an algebraic expression equivalent to a given algebraic expression

· Understand the properties of integers: commutative, associative, identity, zero property of multiplication, distributive property of multiplication over addition, and inverse property of addition

New Vocabulary in this Range:
input, output, table, associative, equation

New Signs and Symbols:
£, ³

Measurement

Length, Weight, Volume

· Find the volume of a figure using cubic units

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

· Select appropriate unit of measure for length and area

· Find the volume of rectangular solids using the formula

Area, Perimeter, Circumference

· Find the perimeter of a square or rectangle using the formula

· Solve practical word problems involving perimeter and area of a square, rectangle or triangle

· Calculate the area of a triangle

· Calculate the surface area of a rectangular prism

Time, Temperature

· Compute basic operations with units of time (include basic concept of time zones)

Angle Identification and Measure

· Identify angles according to their measure: right, obtuse, and acute

Money

· Compute and count change up to and including $5.00 (addition and subtraction only)

· Solve written word problems involving the addition or subtraction of monetary amounts

New Vocabulary in this Range:
right angle, circumference, minutes, decades, milligrams, gram, cubic feet, volume, liters, length, weight, kilometers, millimeters, mass

New Signs and Symbols:
ft for feet, mL = milliliters, right angle symbol, symbol for line segment, p

Geometry and Spatial Sense

Shapes and Figures, 2- and 3-dimensional

· Identify faces, edges, and corners (vertices) on solid figures

· Identify polygons: triangle, quadrilateral, pentagon, and octagon

· Identify quadrilaterals: square, rectangle, and parallelogram

· Identify, name, and analyze solid figures: cube, cylinder, triangular pyramid and square pyramid (faces, edges, and vertices)

Congruency and Similarity

· Identify congruent figures, angles and line segments

Symmetry and Transformations

· Identify mirror-images

Geometric Properties and Terminology

· Identify points, lines, line segments, rays, planes, and angles

· Identify the diameter of a circle

· Identify intersecting, parallel, and perpendicular lines

New Vocabulary in this Range:

intersection, quadrilaterals, octagon, parallelogram, pyramid, isosceles, right angle, diameter, right angle, geometric, perpendicular, plane

New Signs and Symbols:

D for triangle, angle symbol

Data Analysis, Statistics, and Probability

Probability and Prediction

· Compute simple probability outcomes

· Determine the probability of an outcome (multiple events)

· Use the counting principle to determine probability

Statistics

· Solve practical problems involving the mean (average) of a set of numbers

Graphing

· Solve problems using information from a picture graph (symbol may represent more than one)

· Interpret data given in percent form on a circle graph and broken line graph

New Vocabulary in this Range:

least often, how many ways, ordered pairs, coordinates, distance formula

New Signs and Symbols:

none

Problem Solving

· Estimate the answers to word problems

· Solve written word problems involving the addition or subtraction of monetary amounts

· List the prime and composite numbers less than 50 in a word problem

· Order integers on a number line

· Interpret data given in percent form on a circle graph and broken line graph

· Solve word problems involving customary and metric measurement

· Solve word problems involving distance, rate and time

· Use logic to solve problems

· Solve word problems using proportional reasoning

· Solve geometry problems by making a drawing or diagram

· Choose and use 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, Draw a diagram, Write an equation, or Logical Deduction

New Vocabulary in this Range:
quation, product, increased, number line, information not needed, division, estimate, odd, prime, cube, pattern, geometric patterns, extra information

New Signs and Symbols:
r x t = d