

# Mathematics RIT Score: 211-220

## Number Sense and Operations

### *Whole Numbers*

- Divide a 3-digit or 4-digit number by a 1-digit number
- Use multiplication as a check for division
- Multiply by multiples of 10 and 100 with an emphasis on mental math
- Divide a 4-digit number by a 2-digit number

### *Fractions*

- Change a fractional numeral to its simplest form (lowest terms)
- Add fractions with like denominators, answer in lowest terms
- Add mixed numbers with unlike denominators with regrouping
- Multiply a whole number by a fraction
- Divide a fraction by a fraction
- Divide a mixed number by a whole number or a fraction
- Compare and order fractions and mixed numbers

### *Decimals*

- Round decimals to nearest whole number, tenth, or hundredth
- Write a terminating decimal as a fraction or mixed number
- Round decimals to nearest whole number, tenth, hundredth, or thousandth
- Add decimals through hundred-thousandths with a calculator
- Multiply a decimal by a decimal, factors to thousandths
- Divide a decimal by a whole number and vice versa

### *Integers*

- Identify the greater or lesser of 2 integers
- Add integers with like signs
- Add integers with unlike signs
- Add several integers
- Multiply integers with unlike signs
- Divide integers with unlike signs

### *New Vocabulary in this range:*

smallest, tenth

### *New Signs and Symbols:*

- as a negative, + as a positive

### *Whole Numbers*

- Understand and use rules of divisibility
- Identify the greatest common factor of two whole numbers: list the factors or prime factorization
- Identify the greatest common factor and least common multiple of two whole numbers

### *Fractions, Ratio and Proportion*

- Write improper fractions from picture presentations
- Change a fractional numeral to its simplest form (lowest terms)

### *Decimals*

- Round monetary amounts to the nearest single coin or bill which could be used to pay for a purchase up to and including \$20.00
- Write the decimal equivalent of a fraction and label as repeating or terminating

### *Percents*

- Express a fraction as a decimal and as a percent

### *Ordering, Equalities and Inequalities*

- Compare and order fractions with the same denominator and with different denominators
- Order decimals to thousandths; identify the greater or lesser of two decimals to thousandths

### *Exponents and Scientific Notation*

- Order of "powers"
- Write a whole number or a decimal in scientific notation
- Write a number expressed in scientific notation in standard form

### *New Vocabulary in this Range:*

counting number, portion, fractional part, lowest terms, reciprocal, order, scientific notation, prime factorization, not prime, factor tree, common multiples, greatest common denominator, equivalent, nearest dollar

### *New Signs and Symbols:*

square root symbol

## **Patterns, Functions, and Algebra**

### *Patterns, Sequences, Functions*

- Use logic to solve a problem involving a function table

### *Solving Equations and Inequalities, Simplifying Expressions, Order of Operations*

- Solve decimal equations (one step, addition and subtraction)
- Solve integer equations (one step, multiplication and division)
- Evaluate expressions using the order of operations (may include parentheses or exponents)
- Solve quadratic equations

### *New Vocabulary in this Range:*

commutative, solve, square numbers, input, output, number sequence

### *New Signs and Symbols:*

none

## **Measurement**

### *Length, Weight, Volume*

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

### *Area, Perimeter, Circumference*

- Calculate the area of irregular shapes
- Understand the effects of changing dimensions on perimeter and area

### *Angle Measure*

- Measure angles using a protractor

### *Money*

- Compute basic operations with monetary amounts up to and including \$20.00

### *New Vocabulary in this Range:*

yards, measure of angle, degrees, protractor, centuries, below zero, Celsius, rectangular solid, rectangular prism, decades, ounces

### *New Signs and Symbols:*

" = inches, yd = yards, b = base, h = height, r = radius, s = side, angle symbol, - for negative, + for positive, d = distance, tsp = teaspoon, pt = pint, gal = gallon, qt = quart, c = cup

## **Geometry and Spatial Sense**

### *Shapes and Figures, 2- and 3-dimensional*

- Identify faces, edges, and corners (vertices) on solid figures
- Contrast open and closed figures
- Identify polygons: triangle, quadrilateral, pentagon, hexagon, and octagon
- Identify quadrilaterals: square, rectangle, parallelogram, trapezoid, rhombus
- Analyze solid figures: triangular pyramid and rectangular pyramid (faces, edges, and vertices)

### *Congruency and Similarity*

- Identify similar figures (same shape, may or may not be the same size)
- Identify congruent polygons and their corresponding sides and angles

### *Symmetry and Transformations*

- Identify types of transformations (rotation)

### *Geometric Properties and Terminology*

- Identify points, lines, line segments, rays, and angles
- Identify angles: right, obtuse, and acute
- Identify when two intersecting lines are perpendicular
- Identify properties of similar figures

### *New Vocabulary in this Range:*

symmetrical, perpendicular, ray, vertex, rotation, triangular prism, corresponding parts, supplementary, acute angle, transformation

### *New Signs and Symbols:*

@ - congruent symbol, « - double arrow symbol for similarity, p - pi symbol, DABC - to label triangle

## Data Analysis, Statistics, and Probability

### *Graphing*

- Identify and order decimal and fractional coordinates on a number line
- Order integers on a number line

*New Vocabulary in this Range:*  
dice, arranged, highest mean

*New Signs and Symbols:*  
none

## Problem Solving

- Compute word problems with time and calendars
- Investigate experimental probability of an event using a coin or spinner
- Solve practical word problems involving perimeter and area of a square, rectangle or triangle
- Understand and identify the place value and value of each digit in numerals through the billions
- Solve practical problems involving the mean (average) of a set of numbers
- Solve one- and two-step word problems involving any combination of basic operations on whole numbers, decimals, and fractions
- Determine the discount price and sale price
- 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, or Write an equation
- Solve problems involving arrangements
- Understand the properties of integers: commutative, associative, identity, zero property of multiplication, distributive property of multiplication over addition, and inverse property of addition
- Calculate the square of any number less than 100
- Calculate the cost of one item or the unit cost using a proportion

*New Vocabulary in this Range:*  
decimals, fractions, what shape, hour, minutes, gallons, average, probability, graph, squares

*New Signs and Symbols:*  
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