Math: The Real and Complex Number Systems: Ratios and Proportional Relationships

Students:	DesCartes Statements:

Students:	**RIT Above 260:** • Solves problems involving rate conversions (e.g., mi/hr to ft/sec) • Solves problems involving successive discounts

Students:	**RIT 251-260:** • Solves problems involving complex percent discounts (e.g., finding percent discount, regular price) • Solves problems involving rate conversions (e.g., mi/hr to ft/sec) • Solves problems involving successive discounts • Uses dimensional analysis for unit conversions (time)

Students:	**RIT 241-250:** • Apply dimensional analysis to simple real-world problems (length) • Calculates a percent of a rational number (e.g., 6% of 0.78) • Calculates commission/deductions and total pay • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Identifies the ratio from a given real-world situation • Solves multiple-step problems involving proportions • Solves problems involving a fractional increase • Solves problems involving complex percent discounts (e.g., finding percent discount, regular price) • Solves problems involving percents (analysis) • Solves problems involving rate conversions (e.g., mi/hr to ft/sec) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving successive discounts • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves real-world problems involving decimals (not money) using multiplication • Uses dimensional analysis for unit conversions (length) • Uses dimensional analysis for unit conversions (time)

Students:	**RIT 231-240:** • Apply dimensional analysis to simple real-world problems (capacity) • Apply dimensional analysis to simple real-world problems (length) • Calculates a percent of a number (e.g., 6% of 30) • Calculates commission/deductions and total pay • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Converts between grams and kilograms • Converts between millimeters, centimeters, meters, and kilometers • Converts between the customary and metric system given conversion ratios (2-step, length) • Converts within the metric system • Expresses a percent as a fraction and vice versa • Identifies the ratio from a given real-world situation • Interprets data given in circle graphs to solve complex problems (with percents) • Solves complex problems involving miles per gallon • Solves multiple-step problems involving proportions • Solves problems comparing unit prices • Solves problems involving capacity in the customary system and converts to larger or smaller units • Solves problems involving equivalent fractions (analysis) • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving percent increase and decrease • Solves problems involving percents • Solves problems involving percents (analysis) • Solves problems involving rates • Solves problems involving ratios • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving tax and tips • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves real-world problems involving decimals (not money) using multiplication • Uses dimensional analysis for unit conversions (length) • Uses estimation to solve problems involving proportional reasoning (decimals only) • Writes a ratio as a percent and vice versa

Students:	RIT 221-230:
	• Applies dimensional analysis to simple real-world problems (time)
	• Apply dimensional analysis to simple real-world problems (capacity)
	• Calculates a number from a percent (e.g., 4 is 9% of what)
	• Calculates a percent of a number (e.g., 6% of 30)
	• Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%)
	• Computes 2-step conversions between units of time
	• Converts between cups, pints, quarts, and gallons
	• Converts between inches, feet, and yards
	• Converts between millimeters, centimeters, meters, and kilometers
	• Converts between ounces and pounds
	• Converts between ounces, pounds, and tons
	• Converts within the metric system
	• Expresses a percent as a fraction and vice versa
	• Interprets data given in circle graphs to solve complex problems (with percents)
	• Solves 1-step problems involving proportions
	• Solves complex problems involving miles per gallon
	• Solves complex problems involving miles/kilometers per hour
	• Solves problems involving capacity in the customary system and converts to larger or smaller units
	• Solves problems involving length in the customary system and converts to larger or smaller units
	• Solves problems involving percents and problems involving ratios
	• Solves problems involving perimeter and converts to larger or smaller units
	• Solves problems involving rates
	• Solves problems involving tax and tips
	• Solves real-world problems involving decimals (not money) using multiplication
	• Uses concrete and pictorial models to represent ratios
	• Uses dimensional analysis for unit conversions (length)
	• Writes a ratio as a percent and vice versa
	• Writes the missing number in a proportion with numbers other than basic facts (e.g., 5/13=?/117)
Students:	**RIT 211-220:**
	• Applies dimensional analysis to simple real-world problems (time)
	• Apply dimensional analysis to simple real-world problems (capacity)
	• Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%)
	• Computes more difficult conversions among units of time
	• Converts between cups, pints, quarts, and gallons
	• Converts between inches and feet
	• Converts between inches, feet, and yards
	• Determines unit price
	• Expresses a percent as a fraction with 100 as the denominator and vice versa
	• Identifies the percent represented in a 2-D region
	• Recognizes and writes proportions
	• Solves 1-step problems involving proportions
	• Solves problems involving equivalent fractions
	• Solves problems involving rates
	• Solves simple problems involving measurement of length
	• Solves simple problems involving miles per gallon
	• Writes a basic percent as a fraction and vice versa (e.g., 10%, 25%, 50%, 100%)
Students:	**RIT 201-210:**
	• Applies dimensional analysis to simple real-world problems (time)
	• Computes more difficult conversions among units of time
	• Computes simple conversions among units of time (hours, days)
	• Converts between cups and pints
	• Converts between cups, pints, and quarts
	• Converts between inches and feet
	• Determines unit price
	• Estimates simple conversions involving length between the customary and metric system
	• Identifies the percent represented in a 2-D region
	• Solves simple problems involving measurement of length
	• Solves simple problems involving miles per gallon
	• Solves simple problems involving miles/kilometers per hour
	• Writes the missing number in a proportion using basic facts

Students:	RIT 191-200: • Computes simple conversions among units of time (minutes, hours) • Converts between cups and pints • Converts between cups, pints, and quarts • Solves problems involving basic percent concepts (e.g., 10%, 50%, 100%) • Solves simple problems involving miles/kilometers per hour • Writes the missing number in a proportion using basic facts
Students:	**RIT 181-190:** • Completes arithmetic growth patterns in number tables by identifying the missing elements • Computes simple conversions among units of time (days, weeks)
Students:	RIT 171-180: • Completes a growing arithmetic pattern by naming missing members • Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)
Students:	**RIT 161-170:** • Completes a growing arithmetic pattern by naming missing members