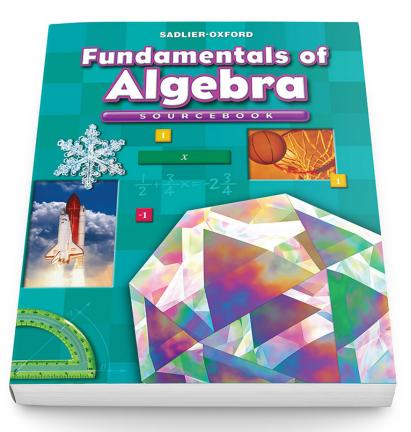
Sadlier School

SADLIER-OXFORD Fundamentals of Algebra

Correlation to the Minnesota Academic Standards in Mathematics for Grade 7



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Standard & Benchmark Description

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7.1.1 Read, write, represent and compare positive and negative rational numbers, expressed as integers, fractions and decimals.

7.1.1.1 Know that every rational number can be written as the ratio of two integers or as a terminating or repeating decimal. Recognize that π is not rational, but that it can be approximated by rational numbers such as $\frac{22}{7}$ and 3.14.	 Chapter 4 Rational Numbers: Decimals 4-1 Rational Numbers—TE pp. 72-73B; SB pp. 72-73 / PB pp. 83-84 Chapter 10 Two-Dimensional Geometry and Measurement Applications 10-4 Irrational Numbers (distinguish between rational and irrational numbers/use estimation to approximate an irrational number/pi)—TE pp. 278-279B; SB pp. 278-279 / PB pp. 313-314
7.1.1.2 Understand that division of two integers will always result in a rational number. Use this information to interpret the decimal result of a division problem when using a calculator. For example: $\frac{125}{30}$ gives 4.166666667 on a calculator. This answer is not exact. The exact answer can be expressed as 4 $\frac{1}{6}$, which is the same as 4.16. The calculator expression does not guarantee that the 6 is repeated, but that possibility should be anticipated.	 Chapter 1 Integers 1-6 Divide Integers—TE pp. 12-13B; SB pp. 12-13 / PB pp. 11-12 Chapter 4 Rational Numbers: Decimals 4-1 Rational Numbers—TE pp. 72-73B; SB pp. 72-73 / PB pp. 83-84
7.1.1.3 Locate positive and negative rational numbers on a number line, understand the concept of opposites, and plot pairs of positive and negative rational numbers on a coordinate grid.	 Chapter 1 Integers 1-1 Integers and Absolute Value (opposites)—TE pp. 2-3B; SB pp. 2-3 / PB pp. 1-2 1-4A Distance on a Number Line—Online 1-4B Understanding Integers (opposites)—Online 1-11 The Coordinate Plane—TE pp. 22-23B; SB pp. 22-23 / PB pp. 21-22 Chapter 4 Rational Numbers: Decimals 4-1 Rational Numbers (number line)—TE pp. 72-73B; SB pp. 72-73 / PB pp. 83-84 Chapter 5 Rational Numbers: Fractions 5-7A Rational Numbers on a Number Line—Online 5-12 Properties of Rational Numbers—TE pp. 130-131B; SB pp. 130-131 / PB pp. 145-146





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7.1.1 Read, write, represent and compare positive and negative rational numbers, expressed as integers, fractions and decimals.

7.1.1.4 Compare positive and negative rational numbers expressed in various forms using the symbols < , > , = , \leq , \geq . For example: $-\frac{1}{2}$ < -0.36.	 Chapter 4 Rational Numbers: Decimals 4-3 Compare and Order Decimals—TE pp. 76-77B; SB pp. 76-77 / PB pp. 87-8 Chapter 5 Rational Numbers: Fractions 5-5 Compare and Order Rational Numbers—TE pp. 116-117B; SB pp. 116-117 / PB pp. 131-132
7.1.1.5 Recognize and generate equivalent representations of positive and negative rational numbers, including equivalent fractions. For example: $-\frac{40}{12} = \frac{120}{36} = \frac{10}{3} = -3\overline{3}$	 Chapter 4 Rational Numbers: Decimals 4-2 Equivalent Rational Numbers (rename a fraction as an equivalent decimal)—TE pp. 74-75B; SB pp. 74-75 / PB pp. 85-86 Chapter 5 Rational Numbers: Fractions 5-2 Greatest Common Factor (form equivalent fractions)—TE pp. 110-111B; SB pp. 110-111 / PB pp. 125-126 5-5 Compare and Order Rational Numbers (generate equivalent fractions/equivalent decimals)—TE pp. 116-117B; SB pp. 116-117 / PB pp. 131-132

7.1.2.1 Add, subtract, multiply and divide positive
and negative rational numbers that are integers,
fractions and terminating decimals; use efficient
and generalizable procedures, including
standard algorithms; raise positive rational
numbers to whole-number exponents.
For example: If
$$3^4x \left(\frac{1}{2}\right)^2 = \frac{81}{4}$$
.
For example: If $3^4x \left(\frac{1}{2}\right)^2 = \frac{81}{4}$.
Chapter 1 Integers
1-3 Add Integers—TE pp. 6-7B; SB pp. 6-7 / PB pp.
5-6
1-4 Subtract Integers—TE pp. 8-9B; SB pp. 8-9 / PB
pp. 7-8
1-5 Multiply Integers—TE pp. 9-10B; SB pp. 10-11 / PB
pp. 9-10
1-6 Divide Integers—TE pp. 12-13B; SB pp. 12-13 / PB
pp. 11-12
1-7 Properties—TE pp. 14-15B; SB pp. 14-15 / PB pp.
13-14
1-9 Powers and Laws of Exponents—TE pp. 18-19B; SB
pp. 18-19 / PB pp. 17-18
1-10A Solve Real-World Problems with Operations and
Properties—Online
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	 Chapter 4 Rational Numbers: Decimals 4-4 Estimate Decimal Sums and Differences—TE pp. 78-79B; SB pp. 78-79 / PB pp. 89-90 4-5 Add and Subtract Decimals—TE pp. 80-81B; SB pp. 80-81 / PB pp. 91-92 4-6 Multiply Decimals—TE pp. 82-83B; SB pp. 82-83 / PB pp. 93-94 4-7 Estimate Decimal Products and Quotients—TE pp. 84-85B; SB pp. 84-85 / PB pp. 95-96 4-8 Divide Decimals—TE pp. 86-87B; SB pp. 86-87 / PB pp. 97-98 Chapter 5 Rational Numbers: Fractions 5-6 Add and Subtract Fractions—TE pp. 118-119B; SB pp. 118-119 / PB pp. 133-134 5-7 Add and Subtract Mixed Numbers—TE pp. 120- 121B; SB pp. 120-121 / PB pp. 135-136 5-8 Multiply Fractions—TE pp. 122-123B; SB pp. 122-123 / PB pp. 137-138 5-9 Multiply Mixed Numbers—TE pp. 124-125B; SB pp. 124-125 / PB pp. 139-140 5-10 Divide Fractions—TE pp. 126-127B; SB pp. 126-127 / PB pp. 141-142 5-11 Divide Mixed Numbers—TE pp. 128-129B; SB pp. 128-129 / PB pp. 143-144
 7.1.2.2 Use real-world contexts and the inverse relationship between addition and subtraction to explain why the procedures of arithmetic with negative rational numbers make sense. For example: Multiplying a distance by -1 can be thought of as representing that same distance in the opposite direction. Multiplying by -1 a second time reverses directions again, giving the distance in the original direction. 	 Chapter 1 Integers 1-3 Add Integers—TE pp. 6-7B; SB pp. 6-7 / PB pp. 5-6 1-4 Subtract Integers—TE pp. 8-9B; SB pp. 8-9 / PB pp. 7-8 1-7 Properties: Inverse Property of Addition—TE pp. 14-15B; SB pp. 14-15 / PB pp. 13-14 1-10A Solve Real-World Problems with Operations and Properties—Online Chapter 4 Rational Numbers: Decimals 4-12 Addition and Subtraction Equations with Decimals—TE pp. 94-95B; SB pp. 94-95 / PB pp. 105-106 Chapter 5 Rational Numbers: Fractions 5-14 Addition and Subtraction Equations with Fractional Numbers—TE pp. 134-135B; SB pp. 134-135 / PB pp. 149-150





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7.1.2 Calculate with positive and negative rational numbers, and rational numbers with whole number exponents, to solve real-world and mathematical problems.

 7.1.2.3 Understand that calculators and other computing technologies often truncate or round numbers. For example: A decimal that repeats or terminates after a large number of digits is truncated or rounded. 	 Related content Chapter 4 Rational Numbers: Decimals 4-4 Estimate Decimal Sums and Differences (rounded numbers)—TE pp. 78-79B; SB pp. 78-79 / PB pp. 89-90 4-7 Estimate Decimal Products and Quotients (rounded numbers)—TE pp. 84-85B; SB pp. 84-85 / PB pp. 95-96 Skills Update III. Round Whole Numbers and Decimals—SB p. 408
7.1.2.4 Solve problems in various contexts involving calculations with positive and negative rational numbers and positive integer exponents, including computing simple and compound interest.	 Chapter 1 Integers 1-3 Add Integers—TE pp. 6-7B; SB pp. 6-7 / PB pp. 5-6 1-4 Subtract Integers—TE pp. 8-9B; SB pp. 8-9 / PB pp. 7-8 1-7 Properties: Inverse Property of Addition—TE pp. 14-15B; SB pp. 14-15 / PB pp. 13-14 1-9 Powers and Laws of Exponents—TE pp. 18-19B; SB pp. 18-19 / PB pp. 17-18 1-10A Solve Real-World Problems with Operations and Properties—Online Chapter 4 Rational Numbers: Decimals 4-4 Estimate Decimal Sums and Differences—TE pp. 78-79B; SB pp. 78-79 / PB pp. 89-90 4-5 Add and Subtract Decimals—TE pp. 80-81B; SB pp. 80-81 / PB pp. 91-92 4-6 Multiply Decimals—TE pp. 82-83B; SB pp. 82-83 / PB pp. 93-94 4-7 Estimate Decimal Products and Quotients—TE pp. 84-85B; SB pp. 84-85 / PB pp. 95-96
	 4-8 Divide Decimals—TE pp. 86-87B; SB pp. 86-87 / PB pp. 97-98 Chapter 5 Rational Numbers: Fractions 5-6 Add and Subtract Fractions—TE pp. 118-119B; SB pp. 118-119 / PB pp. 133-134 5-7 Add and Subtract Mixed Numbers—TE pp. 120-121B; SB pp. 120-121 / PB pp. 135-136 5-8 Multiply Fractions—TE pp. 122-123B; SB pp. 122-123 / PB pp. 137-138 continued

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	 5-9 Multiply Mixed Numbers—TE pp. 124-125B; SB pp. 124-125 / PB pp. 139-140 5-10 Divide Fractions—TE pp. 126-127B; SB pp. 126-127 / PB pp. 141-142 5-11 Divide Mixed Numbers—TE pp. 128-129B; SB pp. 128-129 / PB pp. 143-144 Chapter 7 Percent and Consumer Applications 7-13 Simple Interest—TE pp. 198-199B; SB pp. 198-199 / PB pp. 221-222 7-14 Compound Interest—TE pp. 200-201B; SB pp. 200-201 / PB pp. 223-224
 7.1.2.5 Use proportional reasoning to solve problems involving ratios in various contexts. For example: A recipe calls for milk, flour and sugar in a ratio of 4:6:3 (this is how recipes are often given in large institutions, such as hospitals). How much flour and milk would be needed with 1 cup of sugar? 	Chapter 6 Ratio and Proportion 6-1 Ratio—TE pp. 148-149B; SB pp. 148-149 / PB pp. 167-168
7.1.2.6 Demonstrate an understanding of the relationship between the absolute value of a rational number and distance on a number line. Use the symbol for absolute value. For example: $ -3 $ represents the distance from -3 to 0 on a number line or 3 units; the distance between 3 and $\frac{9}{2}$ on the number line is $ 3 - \frac{9}{2} $ or $\frac{3}{2}$.	 Chapter 1 Integers 1-1 Integers and Absolute Value—TE pp. 2-3B; SB pp. 2-3 / PB pp. 1-2 1-2 Compare and Order Integers (absolute value)—TE pp. 4-5B; SB pp. 4-5 / PB pp. 3-4 1-3 Add Integers (absolute value)—TE pp. 6-7B; SB pp. 6-7 / PB pp. 5-6 1-4 Subtract Integers (absolute value)—TE pp. 8-9B; SB pp. 8-9 / PB pp. 7-8 1-4A Distance on a Number Line (absolute value)—Online 1-4B Understanding Integers—Online 1-5 Multiply Integers (absolute value)—TE pp. 9-10B; SB pp. 10-11 / PB pp. 9-10 Chapter 2 Expressions and Equations 2-1 Mathematical Expressions—TE pp. 30-31B; SB pp. 30-31 / PB pp. 34-35B; SB pp. 34-35 / PB pp. 37-38 <i>continued</i>



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Chapter 4 Rational Numbers: Decimals 4-5 Add and Subtract Decimals—TE pp. 80-81B; SB pp. 80-81 / PB pp. 91-92
 Chapter 5 Rational Numbers: Fractions 5-4 Fraction Sense: Closest to -1, -1/2, 0, 1/2, or 1 (absolute values)—TE pp. 114-115B; SB pp. 114-115 / PB pp. 129-130 5-6 Add and Subtract Fractions—TE pp. 118-119B; SB pp. 118-119 / PB pp. 133-134 5-7A Rational Numbers on a Number Line (use absolute value)—Online





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7.2.1 Understand the concept of proportionality in real-world and mathematical situations, and distinguish between proportional and other relationships.

7.2.1.1 Understand that a relationship between two variables, x and y, is proportional if it can be expressed in the form $\frac{y}{x} = k$ or y = kx. Distinguish proportional relationships from other relationships, including inversely proportional relationships ($xy = k$ or $y = \frac{k}{x}$). For example: The radius and circumference of a circle are proportional, whereas the length x and the width y of a rectangle with area 12 are inversely proportional, since $xy = 12$ or equivalently, $y = 12$	 Chapter 6 Ratio and Proportion 6-2 Unit Rate and Unit Cost—TE pp. 150-151B; SB pp. 150-151 /PB pp. 169-170 6-3A Use Unit Rates—Online 6-3B Use Rational Numbers to Solve Problems (test for proportionality)—Online 6-4 Direct Proportion—TE pp. 154-155B; SB pp. 154-155 / PB pp. 173-174 6-6B Proportional Relationships and Equations—Online
7.2.1.2 Understand that the graph of a proportional relationship is a line through the origin whose slope is the unit rate (constant of proportionality). Know how to use graphing technology to examine what happens to a line when the unit rate is changed.	 Chapter 6 Ratio and Proportion 6-3B Use Rational Numbers to Solve Problems (graph of a proportional relationship is a straight line)— Online 6-6A Identify Unit Rate (identify constant of proportionality)—Online 6-6C Use Proportional Relationships and Equations to Solve Problems (graph the equation then interpret the coordinates of points on the line)—Online Chapter 13 Patterns, Relations, and Functions 13-7 Slope—TE pp. 364-365B; SB pp. 364-365 / PB pp. 411-412 13-8A Identify Constant of Proportionality—Online 13-8B Graph Proportional Relationships—Online

7.2.2 Recognize proportional relationships in real-world and mathematical situations; represent these and other relationships with tables, verbal descriptions, symbols and graphs; solve problems involving proportional relationships and explain results in the original context.

7.2.2.1 Represent proportional relationships with tables, verbal descriptions, symbols, equations and graphs; translate from one representation to another. Determine the unit rate (constant of proportionality or slope) given any of these representations.	 Chapter 6 Ratio and Proportion 6-2 Unit Rate and Unit Cost—TE pp. 150-151B; SB pp. 150-151 /PB pp. 169-170 6-3A Use Unit Rates—Online 6-3B Use Rational Numbers to Solve Problems— Online 6-6A Identify Unit Rate—Online
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7.2.2 Recognize proportional relationships in real-world and mathematical situations; represent these and other relationships with tables, verbal descriptions, symbols and graphs; solve problems involving proportional relationships and explain results in the original context.

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For example: Larry drives 114 miles and uses 5 gallons of gasoline. Sue drives 300 miles and uses 11.5 gallons of gasoline. Use equations and graphs to compare fuel efficiency and to determine the costs of various trips.	 6-6B Proportional Relationships and Equations— Online 6-6C Use Proportional Relationships and Equations to Solve Problems—Online 6-10 Dimensional Analysis—TE pp. 166-167B; SB pp. 166-167 / PB pp. 185-186 Chapter 13 Patterns, Relations, and Functions 13-7 Slope—TE pp. 364-365B; SB pp. 364-365 / PB pp. 411-412 13-8A Identify Constant of Proportionality—Online 13-9 Graph a Situation—TE pp. 368-369B; SB pp. 368-369 / PB pp. 415-416
7.2.2.2 Solve multi-step problems involving	Chapter 6 Ratio and Proportion
 proportional relationships in numerous contexts. For example: Distance-time, percent increase or decrease, discounts, tips, unit pricing, lengths in similar geometric figures, and unit conversion when a conversion factor is given, including conversion between different measurement systems. Another example: How many kilometers are there in 26.2 miles? 	 6-2 Unit Rate and Unit Cost—TE pp. 150-151B; SB pp. 150-151 /PB pp. 169-170 6-3A Use Unit Rates (compare unit prices and other unit rates)—Online 6-6B Proportional Relationships and Equations (solve multi-step problems)—Online 6-6C Use Proportional Relationships and Equations to Solve Problems (solve multi-step problems)—Online 6-10 Dimensional Analysis (conversion factor)—TE pp. 166-167B; SB pp. 166-167 / PB pp. 185-186
	Chapter 7 Percent and Consumer Applications
	7-1 Percents—TE pp. 174-175B; SB pp. 174-175 / PB pp. 197-198
	7-2 Fractions, Decimals, Percents—TE pp. 176-177B; SB pp. 176-177 / PB pp. 199-200
	7-4 Find a Percentage of a Number—TE pp. 180-181B; SB pp. 180-181 / PB pp. 203-204
	7-5 Find a Percent—TE pp. 182-183B; SB pp. 182-183 / PB pp. 205-206
	7-8 Percent Increase—TE pp. 188-189B; SB pp. 188-189 / PB pp. 211-212
	7-9 Percent Decrease—TE pp. 190–191B; SB pp. 190–191 / PB pp. 213–214
	7-9A Percent Error—Online
	7-10 Sales Tax and Tips—TE pp. 192-193B; SB pp. 192-193 / PB pp. 215-216
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7.2.2 Recognize proportional relationships in real-world and mathematical situations; represent these and other relationships with tables, verbal descriptions, symbols and graphs; solve problems involving proportional relationships and explain results in the original context.

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7.2.2.3 Use knowledge of proportions to assess the reasonableness of solutions. For example: Recognize that it would be unreasonable for a cashier to request \$200 if you purchase a \$225 item at 25% off.	 7-11 Discount and Markup—TE pp. 194-195B; SB pp. 194-195 / PB pp. 217-218 7-12 Commission—TE pp. 196-197B; SB pp. 196-197 / PB pp. 219-220 7-13 Simple Interest—TE pp. 198-199B; SB pp. 198-199 / PB pp. 221-222 7-14 Compound Interest—TE pp. 200-201B; SB pp. 200-201 / PB pp. 223-224 Chapter 6 Ratio and Proportion 6-3 Write and Solve Proportions—TE pp. 152-153B; SB pp. 152-153 / PB pp. 171-172 6-3A Use Unit Rates—Online 6-4 Direct Proportion—TE pp. 154-155B; SB pp. 154-155 / PB pp. 173-174 6-5 Proportion by Parts—TE pp. 156-157B; SB pp. 156-157 / PB pp. 175-176 6-6 Scale Drawings and Models—TE pp. 158-159B; SB pp. 158-159 / PB pp. 177-178 6-6A Identify Unit Rate—Online 6-6B Proportional Relationships and Equations— Online 6-6C Use Proportional Relationships and Equations to Solve Problems (check reasonableness of answers)—Online
7.2.2.4 Represent real-world or mathematical situations using equations and inequalities involving variables and positive and negative rational numbers. For example: "Four-fifths is three greater than the opposite of a number" can be represented as $\frac{4}{5} = n + 3$, and "height no bigger than half the 5 radius" can be represented as $h \le \frac{r}{2}$. Another example: "x is at least -3 and less than 5" can be represented as $-3 \le x < 5$, and also on a number line.	 Chapter 2 Expressions and Equations 2-3 Equations—TE pp. 34-35B; SB pp. 34-35 / PB pp. 37-38 2-4 Solve Addition Equations—TE pp. 36-37B; SB pp. 36-37 / PB pp. 39-40 2-5 Solve Subtraction Equations—TE pp. 38-39B; SB pp. 38-39 / PB pp. 41-42 2-6 Solve Multiplication Equations—TE pp. 40-41B; SB pp. 40-41 / PB pp. 43-44 2-7 Solve Division Equations—TE pp. 42-43B; SB pp. 42-43 / PB pp. 45-46 2-8 Solve Two-Step Equations—TE pp. 44-45B; SB pp. 44-45 / PB pp. 47-48 2-8A Solving Equations of the Form a(x + b) = c Using Integers—Online

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7.2.2 Recognize proportional relationships in real-world and mathematical situations; represent these and other relationships with tables, verbal descriptions, symbols and graphs; solve problems involving proportional relationships and explain results in the original context.

2-9 Formulas—TE pp. 46-47B; SB pp. 46-47 / PB pp. 49-50
Chapter 3 Inequalities
3-1 Inequalities—TE pp. 54-55B; SB pp. 54-55 / PB pp. 61-62
3-4 Solve Inequalities Using Addition and Subtraction—TE pp. 60-61B; SB pp. 60-61 / PB pp. 67-68
3-5 Solve Inequalities Using Multiplication—TE pp. 62-63B; SB pp. 62-63 / PB pp. 69-70
3-6 Solve Inequalities Using Division—TE pp. 64-65B; SB pp. 64-65 / PB pp. 71-72
3-6A Solve Two-Step Inequalities—Online
Chapter 4 Rational Numbers: Decimals
4-12 Addition and Subtraction Equations with Decimals—TE pp. 94-95B; SB pp. 94-95 / PB pp. 105-106
4-13 Multiplication and Division Equations with Decimals—TE pp. 96-97B; SB pp. 96-97 / PB pp. 107-108
 4-14 Solve Two-Step Equations with Decimals—TE pp. 98-99B; SB pp. 98-99 / PB pp. 109-110 4-14A Solving Equations of the Form a(x + b) = c Using Decimals—Online
Chapter 5 Rational Numbers: Fractions
5-14 Addition and Subtraction Equations with Fractional Numbers—TE pp. 134-135B; SB pp. 134-135 / PB pp. 149-150
5-15 Multiplication and Division Equations with Fractional Numbers—TE pp. 136-137B; SB pp. 136-137 / PB pp. 151-152
5-16 Solve Two-Step Equations with Fractions—TE pp. 138-139B; SB pp. 138-139 / PB pp. 153-154
5-16A Solving Equations of the Form a(x + b) = c Using Fractions—Online



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7.2.3 Apply understanding of order of operations and algebraic properties to generate equivalent numerical and algebraic expressions containing positive and negative rational numbers and grouping symbols; evaluate such expressions.

7.2.3.1 Use properties of algebra to generate equivalent numerical and algebraic expressions containing rational numbers, grouping symbols and whole number exponents. Properties of algebra include associative, commutative and distributive laws. For example: Combine like terms (use the distributive law) to write $3x - 7x + 1 =$ (3 - 7)x + 1 = 4x + 1.	 Chapter 1 Integers 1-7 Properties—TE pp. 14–15B; SB pp. 14–15 / PB pp. 13–14 1-8 Closure Property—TE pp. 16–17B; SB pp. 16–17 / PB pp. 15–16 1-9 Powers and Laws of Exponents—TE pp. 18–19B; SB pp. 18–19 / PB pp. 17–18 1-10A Solve Real-World Problems with Operations and Properties—Online Chapter 2 Expressions and Equations 2-1 Mathematical Expressions—TE pp. 30–31B; SB pp. 30–31 / PB pp. 32–33 / PB pp. 35–36 Chapter 3 Inequalities 3-3 Model Properties of Inequality—TE pp. 58–59B; SB pp. 58–59 / PB pp. 65–66 Chapter 5 Rational Numbers: Fractions 5-12 Properties of Rational Numbers—TE pp. 130–131B; SB pp. 130–131 / PB pp. 145–146 Chapter 7 Percent and Consumer Application 7-11A Equivalent Expressions for Percents—Online
	Chapter 11 Three-Dimensional Geometry 11-10A Write Expressions in Different Ways—Online
7.2.3.2 Evaluate algebraic expressions containing rational numbers and whole number exponents at specified values of their variables. For example: Evaluate the expression $\frac{1}{3}(2 \times -5)^2$ at x = 5.	 Chapter 1 Integers 1-9 Powers and Laws of Exponents—TE pp. 18-19B; SB pp. 18-19 / PB pp. 17-18 Chapter 2 Expressions and Equations 2-1 Mathematical Expressions—TE pp. 30-31B; SB pp. 30-31 / PB pp. 33-34 2-2 Simplify and Evaluate Algebraic Expressions—TE pp. 32-33B; SB pp. 32-33 / PB pp. 35-36
7.2.3.3 Apply understanding of order of operations and grouping symbols when using calculators and other technologies.	Chapter 1 Integers 1-4B Understanding Integers (rewrite using grouping symbols)—Online <i>continued</i>



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7.2.3 Apply understanding of order of operations and algebraic properties to generate equivalent numerical and algebraic expressions containing positive and negative rational numbers and grouping symbols; evaluate such expressions.

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For example: Recognize the conventions of using a caret (^ raise to a power) and asterisk (* multiply); pay careful attention to the use of nested parentheses.	 1-10 Order of Operations—TE pp. 20-21B; SB pp. 20-21 / PB pp. 19-20 1-10A Solve Real-World Problems with Operations and Properties (use order of operations)—Online
	Chapter 2 Expressions and Equations 2-2 Simplify and Evaluate Algebraic Expressions (follow the order of operations)—TE pp. 32-33B; SB pp. 32-33 / PB pp. 35-36
	Chapter 4 Rational Numbers: Decimals 4-5 Add and Subtract Decimals (follow the order of operations)—TE pp. 80-81B; SB pp. 80-81 / PB pp. 91-92
	4-8 Divide Decimals (follow the order of operations)— TE pp. 86-87B; SB pp. 86-87 / PB pp. 97-98
	Chapter 5 Rational Numbers: Fractions 5-7A Rational Numbers on a Number Line—Online 5-13 Order of Operations with Rational Numbers—TE pp. 132–133B; SB pp. 132–133 / PB pp. 147–148
	Chapter 8 Data Analysis and Statistics 8-8B Mean Absolute Deviation (absolute value symbol as a grouping symbol/order of operations)—Online
	Chapter 11 Three-Dimensional Geometry 11-10A Write Expressions in Different Ways (follow the order of operations)—Online



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7.2.4 Represent real-world and mathematical situations using equations with variables. Solve equations symbolically, using the properties of equality. Also solve equations graphically and numerically. Interpret solutions in the original context.

 7.2.4.1 Represent relationships in various contexts with equations involving variables and positive and negative rational numbers. Use the properties of equality to solve for the value of a variable. Interpret the solution in the original context. For example: Solve for <i>w</i> in the equation <i>P</i> = 2<i>w</i> + 2<i>l</i> when <i>P</i> = 3.5 and <i>l</i> = 0.4 Another example: To post an Internet website, Mary must pay \$300 for initial set up and a monthly fee of \$12. She has \$842 in savings, how long can she sustain her website? 	Chapter 2 Expressions and Equations 2-4 Solve Addition Equations—TE pp. 36-37B; SB pp. 36-37 / PB pp. 39-40 2-5 Solve Subtraction Equations—TE pp. 38-39B; SB pp. 38-39 / PB pp. 41-42 2-6 Solve Multiplication Equations—TE pp. 40-41B; SB pp. 40-41 / PB pp. 43-44 2-7 Solve Division Equations—TE pp. 42-43B; SB pp. 42-43 / PB pp. 45-46 2-8 Solve Two-Step Equations—TE pp. 44-45B; SB pp. 44-45 / PB pp. 47-48 2-8A Solving Equations of the Form a(x + b) = c Using Integers—Online 2-9 Formulas—TE pp. 46-47B; SB pp. 46-47 / PB pp. 49-50 2-9A Compare Arithmetic and Algebraic Problem- Solving Methods—Online Chapter 4 Rational Numbers: Decimals 4-12 Addition and Subtraction Equations with Decimals—TE pp. 94-95B; SB pp. 94-95 / PB pp. 105-106 4-13 Multiplication and Division Equations with Decimals—TE pp. 96-97B; SB pp. 96-97 / PB pp. 107-108 4-14 Solve Two-Step Equations with Decimals—TE pp. 98-99B; SB pp. 98-99 / PB pp. 109-110 4-14A Solving Equations of the Form a(x + b) = c Using Decimals—Online 5-11A Different Ways to Solve Problems with Rational Numbers—Online 5-14 Addition and Subtraction Equations with Fractional Numbers—TE pp. 134-135B; SB pp. 134-135 / PB pp. 149-150 5-15 Multiplication and Division Equations with Fractional Numbers—TE pp. 136-137B; SB pp. 136-137 / PB pp. 151-152 5-16 Solve Two-Step Equations with Fractions—TE pp. 138-139B; SB pp. 138-139 / PB pp. 153-154 5-16A Solving Equations of the Form a(x + b) = c Using Decimals—OFE PD PB pp. 153-154 5-16A Solving Equations of the Form a(x + b) = c Using Particular PB pp. 138-139 / PB pp. 153-154 5-16A Solving Equations of the Form a(x + b) = c Using Fractional Numbers—TE pp. 136-137B; SB pp. 138-139B; SB pp. 138-139 / PB pp. 153-154 5-16A Solving Equations of the Form a(x + b) = c Using Fractional Particular PB pp. 153-154 5-16A Solving Equations of the Form a(x + b) = c Using Fractional PA PB pp. 189-189
	Using Fractions—Online continued



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7.2.4 Represent real-world and mathematical situations using equations with variables. Solve equations symbolically, using the properties of equality. Also solve equations graphically and numerically. Interpret solutions in the original context.

	 Chapter 10 Two-Dimensional Geometry and Measurement Applications 10-2 Perimeter—TE pp. 274-275B; SB pp. 274-275 / PB pp. 309-310 10-6 Area of Parallelograms—TE pp. 282-283B; SB pp. 282-283 / PB pp. 317-318 10-7 Area of Triangles and Trapezoids—TE pp. 284- 285B; SB pp. 284-285 / PB pp. 319-320 10-8 Circumference and Area of a Circle—TE pp. 286-287B; SB pp. 286-287 / PB pp. 321-322 10-9 Area of Complex Figures—TE pp. 288-289B; SB
	pp. 288-289 / PB pp. 323-324 Chapter 11 Three-Dimensional Geometry 11-3 Surface Area of Prisms—TE pp. 306-307B; SB pp. 306-307 / PB pp. 345-346 11-4 Surface Area of Pyramids—TE pp. 308-309B; SB pp. 308-309 / PB pp. 347-348 11-7 Volume of Prisms—TE pp. 314-315B; SB pp. 314-315 / PB pp. 353-354 11-8 Volume of Pyramids—TE pp. 316-317B; SB pp. 316-317 / PB pp. 355-356 11-9 Volume of Cylinders and Cones—TE pp. 318-319B; SB pp. 318-319 / PB pp. 357-358 11-10 Surface Area and Volume of Complex Three- Dimensional Figures—TE pp. 320-321B; SB pp. 320-321 / PB pp. 359-360
 7.2.4.2 Solve equations resulting from proportional relationships in various contexts. For example: Given the side lengths of one triangle and one side length of a second triangle that is similar to the first, find the remaining side lengths of the second triangle. Another example: Determine the price of 12 yards of ribbon if 5 yards of ribbon cost \$1.85. 	 Chapter 6 Ratio and Proportion 6-2 Unit Rate and Unit Cost—TE pp. 150–151B; SB pp. 150–151 / PB pp. 169–170 6-3 Write and Solve Proportions—TE pp. 152–153B; SB pp. 152–153 / PB pp. 171–172 6-3A Use Unit Rates—Online 6-4 Direct Proportion—TE pp. 154–155B; SB pp. 154–155 / PB pp. 173–174 6-5 Proportion by Parts—TE pp. 156–157B; SB pp. 156–157 / PB pp. 175–176 6-6 Scale Drawings and Models—TE pp. 158–159B; SB pp. 158–159 / PB pp. 177–178 6-6B Proportional Relationships and Equations—Online

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Standard & Benchmark Description

Sadlier-Oxford Fundamentals of Algebra

7.2.4 Represent real-world and mathematical situations using equations with variables. Solve equations symbolically, using the properties of equality. Also solve equations graphically and numerically. Interpret solutions in the original context.

6-6C Use Proportional Relationships and Equations to Solve Problems—Online
6-8 Indirect Measurement—TE pp. 162-163B; SB pp. 162-163 / PB pp. 181-182
6-9 Inverse Proportion—TE pp. 164-165B; SB pp. 164-165 / PB pp. 183-184
6-10 Dimensional Analysis—TE pp. 166-167B; SB pp. 166-167 / PB pp. 185-186
Ch. 6 Enrichment: Bicycle-Gear Math—TE pp. 170– 170A; SB p. 170 / PB p. 189
Chapter 7 Percent and Consumer Applications 7-1 Percents—TE pp. 174-175B; SB pp. 174-175 / PB pp. 197-198
7-2 Fractions, Decimals, Percents—TE pp. 176-177B; SB pp. 176-177 / PB pp. 199-200
7-4 Find a Percentage of a Number—TE pp. 180-181B; SB pp. 180-181 / PB pp. 203-204
7-5 Find a Percent—TE pp. 182-183B; SB pp. 182-183 / PB pp. 205-206
7-8 Percent Increase—TE pp. 188-189B; SB pp. 188-189 / PB pp. 211-212
7-9 Percent Decrease—TE pp. 190-191B; SB pp. 190-191 / PB pp. 213-214
7-10 Sales Tax and Tips—TE pp. 192-193B; SB pp. 192-193 / PB pp. 215-216
7-11 Discount and Markup—TE pp. 194-195B; SB pp. 194-195 / PB pp. 217-218
7-12 Commission—TE pp. 196-197B; SB pp. 196-197 / PB pp. 219-220
7-13 Simple Interest—TE pp. 198-199B; SB pp. 198-199 / PB pp. 221-222
7-14 Compound Interest—TE pp. 200-201B; SB pp. 200-201 / PB pp. 223-224
7-15 Problem Solving Strategy: Reason Logically—TE pp. 202-203B; SB pp. 202-203 / PB pp. 225-226
Ch. 7 Enrichment: Successive Discounts and Increases—TE pp. 204-204A; SB p. 204 / PB p. 227
Chanton 11 Throo-Dimonsional Coomatur
Chapter 11 Three-Dimensional Geometry
11-11 Changing Dimensions of Three-Dimensional Figures—TE pp. 322-323B; SB pp. 322-323 / PB pp. 361-362



Sadlier-Oxford *Fundamentals of Algebra* Correlation to the Minnesota Academic Standards in Mathematics for Grade 7

Sadlier School

STRAND: GEOMETRY & MEASUREMENT

Standard & Benchmark Description

Sadlier-Oxford Fundamentals of Algebra

7.3.1 Use reasoning with proportions and ratios to determine measurements, justify formulas and solve real-world and mathematical problems involving circles and related geometric figures.

7.3.1.1 Demonstrate an understanding of the proportional relationship between the diameter and circumference of a circle and that the unit rate (constant of proportionality) is π . Calculate the circumference and area of circles and sectors of circles to solve problems in various contexts.	 Chapter 9 Two-Dimensional Geometry 9-12 Circles—TE pp. 262-263B; SB pp. 262-263 / PB pp. 293-294 Chapter 10 Two-Dimensional Geometry and Measurement Applications 10-8 Circumference and Area of a Circle—TE pp. 286-287B; SB pp. 286-287 / PB pp. 321-322
7.3.1.2 Calculate the volume and surface area of cylinders and justify the formulas used. For example: Justify the formula for the surface area of a cylinder by decomposing the surface into two circles and a rectangle.	 Chapter 11 Three-Dimensional Geometry 11-3 Surface Area of Prisms—TE pp. 306-307B; SB pp. 306-307 / PB pp. 345-346 11-4 Surface Area of Pyramids—TE pp. 308-309B; SB pp. 308-309 / PB pp. 347-348 11-5 Surface Area of Cylinders and Cones—TE pp. 310-311B; SB pp. 310-311 / PB pp. 349-350 11-6 Estimate Surface Area—TE pp. 312-313B; SB pp. 312-313 / PB pp. 351-352 11-7 Volume of Prisms—TE pp. 314-315B; SB pp. 314-315 / PB pp. 353-354 11-8 Volume of Pyramids—TE pp. 316-317B; SB pp. 316-317 / PB pp. 355-356 11-9 Volume of Cylinders and Cones—TE pp. 318-319B; SB pp. 318-319 / PB pp. 357-358 11-10 Surface Area and Volume of Complex Three-Dimensional Figures—TE pp. 320-321B; SB pp. 320-321 / PB pp. 359-360

7.3.2 Analyze the effect of change of scale, translations and reflections on the attributes of twodimensional figures.

 7.3.2.1 Describe the properties of similarity, compare geometric figures for similarity, and determine scale factors. For example: Corresponding angles in similar geometric figures have the same measure. 	 Chapter 6 Ratio and Proportion 6-6 Scale Drawings and Models (scale factor)—TE pp. 158-159B; SB pp. 158-159 / PB pp. 177-178 6-7 Similarity—TE pp. 160-161B; SB pp. 160-161 / PB pp. 179-180 6-8 Indirect Measurement (using similar right triangles)—TE pp. 162-163B; SB pp. 162-163 / PB pp. 181-182
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STRAND: GEOMETRY & MEASUREMENT

Standard & Benchmark Description

Sadlier-Oxford Fundamentals of Algebra

7.3.2 Analyze the effect of change of scale, translations and reflections on the attributes of twodimensional figures.

7.3.2.2 Apply scale factors, length ratios and area ratios to determine side lengths and areas of similar geometric figures.For example: If two similar rectangles have heights of 3 and 5, and the first rectangle has a base of length 7, the base of the second rectangle has length $\frac{35}{3}$.	 Chapter 6 Ratio and Proportion 6-6 Scale Drawings and Models—TE pp. 158-159B; SB pp. 158-159 / PB pp. 177-178 6-7 Similarity (find missing dimensions)—TE pp. 160-161B; SB pp. 160-161 / PB pp. 179-180 6-8 Indirect Measurement (using similar right triangles)—TE pp. 162-163B; SB pp. 162-163 / PB pp. 181-182 Chapter 10 Two-Dimensional Geometry and Measurement Applications 10-2 Perimeter (find missing dimensions)—TE pp. 274-275B; SB pp. 274-275 / PB pp. 309-310 10-6 Area of Parallelograms—TE pp. 282-283B; SB pp. 282-283 / PB pp. 317-318 10-7 Area of Triangles and Trapezoids—TE pp. 284-285B; SB pp. 284-285 / PB pp. 319-320 10-8 Circumference and Area of a Circle—TE pp. 286-287B; SB pp. 286-287 / PB pp. 321-322 Related content Chapter 11 Three-Dimensional Geometry 11-11 Changing Dimensions of Three-Dimensional Figures—TE pp. 322-323B; SB pp. 322-323 / PB pp. 326-327 / PB pp. 326-327B; SB pp. 326-327 / PB pp. 326-327B; SB pp. 326-327 / PB pp. 326-327B; SB pp. 326-327 / PB pp. 326
 7.3.2.3 Use proportions and ratios to solve problems involving scale drawings and conversions of measurement units. For example: 1 square foot equals 144 square inches. Another example: In a map where 1 inch represents 50 miles, ¹/₂ inch represents 25 miles. 	 Chapter 6 Ratio and Proportion 6-6 Scale Drawings and Models—TE pp. 158-159B; SB pp. 158-159 / PB pp. 177-178 6-10 Dimensional Analysis (use unit ratios to convert currency, time, and Customary Units of length, capacity, and weight)—TE pp. 166-167B; SB pp. 166-167 / PB pp. 185-186
 7.3.2.4 Graph and describe translations and reflections of figures on a coordinate grid and determine the coordinates of the vertices of the figure after the transformation. For example: The point (1, 2) moves to (-1, 2) after reflection about <i>y</i>-axis. 	 Chapter 13 Patterns, Relations, and Functions 13-10 Graph Translations and Reflections—TE pp. 370-371B; SB pp. 370-371 / PB pp. 417-418 13-11 Graph Rotations—TE pp. 372-373B; SB pp. 372-373 / PB pp. 419-420 13-12 Graph Dilations—TE pp. 374-375B; SB pp. 374-375 / PB pp. 421-422

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Sadlier School

STRAND: DATA ANALYSIS & PROBABILITY

Standard & Benchmark Description

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7.4.1 Use mean, median and range to draw conclusions about data and make predictions.

 7.4.1.1 Design simple experiments and collect data. Determine mean, median and range for quantitative data and from data represented in a display. Use these quantities to draw conclusions about the data, compare different data sets, and make predictions. For example: By looking at data from the past, Sandy calculated that the mean gas mileage for her car was 28 miles per gallon. She expects to travel 400 miles during the next week. Predict the approximate number of gallons that she will use. 	 Chapter 8 Data Analysis and Statistics 8-1A Use Samples to Make Predictions (compare predictions with results)—Online 8-2 Measures of Central Tendency and Range—TE pp. 210-211B; SB pp. 210-211 / PB pp. 237-238 8-3 Interpret Data—TE pp. 212-213B; SB pp. 212-213 / PB pp. 239-240 8-8A Variability—Online 8-8C Comparing Data Sets—Online Chapter 12 Probability 12-4 Experimental Probability—TE pp. 336-337B; SB pp. 336-337 / PB pp. 379-380 12-6A Design a Simulation—Online
 7.4.1.2 Describe the impact that inserting or deleting a data point has on the mean and the median of a data set. Know how to create data displays using a spreadsheet to examine this impact. For example: How does dropping the lowest test score affect a student's mean test score? 	 Chapter 8 Data Analysis and Statistics 8-2 Measures of Central Tendency and Range—TE pp. 210-211B; SB pp. 210-211 / PB pp. 237-238 8-3 Interpret Data—TE pp. 212-213B; SB pp. 212-213 / PB pp. 239-240 8-12 Misleading Statistics and Graphs—TE pp. 230-231B; SB pp. 230-231 / PB pp. 257-258

7.4.2 Display and interpret data in a variety of ways, including circle graphs and histograms.

7.4.2.1 Use reasoning with proportions to display and interpret data in circle graphs (pie charts) and histograms. Choose the appropriate data display and know how to create the display using a spreadsheet or other graphing technology.	 Chapter 8 Data Analysis and Statistics 8-3 Interpret Data—TE pp. 212-213B; SB pp. 212-213 / PB pp. 239-240 8-4 Choose an Appropriate Graph (circle graph)—TE pp. 214-215B; SB pp. 214-215 / PB pp. 241-242 8-6 Histograms—TE pp. 218-219B; SB pp. 218-219 / PB pp. 245-246 8-13 Technology: Create Graphs (circle graph)—TE pp.
	Chapter 9 Two-Dimensional Geometry
	9-13 Make a Circle Graph—TE pp. 264-265B; SB pp. 264-265 / PB pp. 295-296



STRAND: DATA ANALYSIS & PROBABILITY

Standard & Benchmark Description

Sadlier-Oxford Fundamentals of Algebra

7.4.3 Calculate probabilities and reason about probabilities using proportions to solve real-world and mathematical problems.

 7.4.3.1 Use random numbers generated by a calculator or a spreadsheet or taken from a table to simulate situations involving randomness, make a histogram to display the results, and compare the results to known probabilities. For example: Use a spreadsheet function such as RANDBETWEEN(1, 10) to generate random whole numbers from 1 to 10, and display the results in a histogram. 	 Chapter 8 Data Analysis and Statistics 8-6 Histograms—TE pp. 218-219B; SB pp. 218-219 / PB pp. 245-246 Chapter 12 Probability 12-3 Theoretical Probability—TE pp. 334-335B; SB pp. 334-335 / PB pp. 377-378 12-6A Design a Simulation (generate random numbers)—Online
 7.4.3.2 Calculate probability as a fraction of sample space or as a fraction of area. Express probabilities as percents, decimals and fractions. For example: Determine probabilities for different outcomes in game spinners by finding fractions of the area of the spinner. 	 Chapter 12 Probability 12-1 Sample Space—TE pp. 330-331B; SB pp. 330-331 / PB pp. 373-374 12-3 Theoretical Probability (represent probabilities as fractions, decimals, and percents on a number line from 0 to 1)—TE pp. 334-335B; SB pp. 334-335 / PB pp. 377-378 12-4 Experimental Probability—TE pp. 336-337B; SB pp. 336-337 / PB pp. 379-380 Related content 12-5 Odds and Fairness—TE pp. 338-339B; SB pp. 338-339 / PB pp. 381-382 12-6 Compound Events—TE pp. 340-341B; SB pp. 340-341 / PB pp. 383-384 12-7 Permutations—TE pp. 342-343B; SB pp. 342-343 / PB pp. 385-386 12-8 Combinations—TE pp. 344-345B; SB pp. 344-345 / PB pp. 387-388
 7.4.3.3 Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on probabilities. For example: When rolling a number cube 600 times, one would predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times. 	 Chapter 8 Data Analysis and Statistics 8-1A Use Samples to Make Predictions—Online Chapter 12 Probability 12-1 Sample Space—TE pp. 330-331B; SB pp. 330-331 / PB pp. 373-374 12-3 Theoretical Probability—TE pp. 334-335B; SB pp. 334-335 / PB pp. 377-378 12-4 Experimental Probability (predict outcomes)—TE pp. 336-337B; SB pp. 336-337 / PB pp. 379-380

