## SADLIER-OXFORD

## Fundamentals of Algebra

Correlation to the Minnesota Academic Standards in Mathematics for Grade 7


## STRAND: NUMBER \& OPERATION

Standard \& Benchmark Description
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 $\pi$ 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

## 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

## 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

## STRAND: NUMBER \& OPERATION

Standard \& Benchmark Description
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: $-\frac{1}{2}<-0.36$.

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| 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

4-3 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

## 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 Calculate with positive and negative rational numbers, and rational numbers with whole number exponents, to solve real-world and mathematical problems.
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 $3^{4} x\left(\frac{1}{2}\right)^{2}=\frac{81}{4}$.

## 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
continued

## STRAND: NUMBER \& OPERATION

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

|  | Chapter 4 Rational Numbers: Decimals <br> 4-4 Estimate Decimal Sums and Differences-TE pp. <br> 78-79B; SB pp. 78-79 / PB pp. 89-90 <br> 4-5 Add and Subtract Decimals-TE pp. 80-81B; SB pp. 80-81 / PB pp. 91-92 <br> 4-6 Multiply Decimals-TE pp. 82-83B; SB pp. 82-83 / PB pp. 93-94 <br> 4-7 Estimate Decimal Products and Quotients-TE pp. 84-85B; SB pp. 84-85 / PB pp. 95-96 <br> 4-8 Divide Decimals-TE pp. 86-87B; SB pp. 86-87 / PB pp. 97-98 <br> Chapter 5 Rational Numbers: Fractions <br> 5-6 Add and Subtract Fractions-TE pp. 118-119B; SB pp. 118-119 / PB pp. 133-134 <br> 5-7 Add and Subtract Mixed Numbers-TE pp. 120121B; SB pp. 120-121 / PB pp. 135-136 <br> 5-8 Multiply Fractions-TE pp. 122-123B; SB pp. 122-123 / PB pp. 137-138 <br> 5-9 Multiply Mixed Numbers-TE pp. 124-125B; SB pp. 124-125 / PB pp. 139-140 <br> 5-10 Divide Fractions-TE pp. 126-127B; SB pp. 126-127 / PB pp. 141-142 <br> 5-11 Divide Mixed Numbers-TE pp. 128-129B; SB pp. 128-129 / PB pp. 143-144 |
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| 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. <br> 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 <br> 1-3 Add Integers-TE pp. 6-7B; SB pp. 6-7 / PB pp. 5-6 <br> 1-4 Subtract Integers-TE pp. 8-9B; SB pp. 8-9 / PB pp. 7-8 <br> 1-7 Properties: Inverse Property of Addition-TE pp. 14-15B; SB pp. 14-15 / PB pp. 13-14 <br> 1-10A Solve Real-World Problems with Operations and Properties-Online <br> Chapter 4 Rational Numbers: Decimals <br> 4-12 Addition and Subtraction Equations with Decimals-TE pp. 94-95B; SB pp. 94-95 / PB pp. 105-106 <br> Chapter 5 Rational Numbers: Fractions <br> 5-14 Addition and Subtraction Equations with Fractional Numbers-TE pp. 134-135B; SB pp. 134-135 / PB pp. 149-150 |

## STRAND: NUMBER \& OPERATION

Standard \& Benchmark Description
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

## 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. 120121B; SB pp. 120-121 / PB pp. 135-136
5-8 Multiply Fractions-TE pp. 122-123B; SB pp. 122-123 / PB pp. 137-138

## STRAND: NUMBER \& OPERATION

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

|  | 5-9 Multiply Mixed Numbers-TE pp. 124-125B; SB pp. 124-125 / PB pp. 139-140 <br> 5-10 Divide Fractions-TE pp. 126-127B; SB pp. 126-127 / PB pp. 141-142 <br> 5-11 Divide Mixed Numbers-TE pp. 128-129B; SB pp. 128-129 / PB pp. 143-144 <br> Chapter 7 Percent and Consumer Applications <br> 7-13 Simple Interest-TE pp. 198-199B; SB pp. 198-199 / PB pp. 221-222 <br> 7-14 Compound Interest-TE pp. 200-201B; SB pp. 200-201 / PB pp. 223-224 |
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| 7.1.2.5 Use proportional reasoning to solve problems involving ratios in various contexts. <br> 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 <br> 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. <br> 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 $\left\|3-\frac{9}{2}\right\|$ or $\frac{3}{2}$. | Chapter 1 Integers <br> 1-1 Integers and Absolute Value-TE pp. 2-3B; SB pp. 2-3 / PB pp. 1-2 <br> 1-2 Compare and Order Integers (absolute value)-TE pp. 4-5B; SB pp. 4-5 / PB pp. 3-4 <br> 1-3 Add Integers (absolute value)-TE pp. 6-7B; SB pp. 6-7 / PB pp. 5-6 <br> 1-4 Subtract Integers (absolute value)-TE pp. 8-9B; SB pp. 8-9 / PB pp. 7-8 <br> 1-4A Distance on a Number Line (absolute value)Online <br> 1-4B Understanding Integers-Online <br> 1-5 Multiply Integers (absolute value)-TE pp. 9-10B; SB pp. 10-11 / PB pp. 9-10 <br> Chapter 2 Expressions and Equations <br> 2-1 Mathematical Expressions-TE pp. 30-31B; SB pp. 30-31 / PB pp. 33-34 <br> 2-3 Equations-TE pp. 34-35B; SB pp. 34-35 / PB pp. 37-38 |

## STRAND: NUMBER \& OPERATION

Standard \& Benchmark Description

## Sadlier-Oxford Fundamentals of Algebra

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

|  | Chapter 4 Rational Numbers: Decimals <br> 4-5 Add and Subtract Decimals-TE pp. 80-81B; SB pp. 80-81 / PB pp. 91-92 <br> Chapter 5 Rational Numbers: Fractions <br> 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 <br> 5-6 Add and Subtract Fractions-TE pp. 118-119B; SB pp. 118-119 / PB pp. 133-134 <br> 5-7A Rational Numbers on a Number Line (use absolute value)-Online |
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## STRAND: ALGEBRA

Standard \& Benchmark Description
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 $y=k x$. Distinguish proportional relationships from other relationships, including inversely proportional relationships ( $x y=k$ 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 $x y=12$ or equivalently, $\mathrm{y}=12$
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

6-2 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 EquationsOnline

## 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.
continued

## 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 ProblemsOnline
6-6A Identify Unit Rate-Online
continued

## STRAND: ALGEBRA

Standard \& Benchmark Description
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.

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 EquationsOnline
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
13-8B Graph Proportional Relationships—Online
13-9 Graph a Situation-TE pp. 368-369B; SB pp. 368-369 / PB pp. 415-416

## 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 (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
continued

## STRAND: ALGEBRA

Standard \& Benchmark Description
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.

|  | 7-11 Discount and Markup-TE pp. 194-195B; SB pp. <br> 194-195 / PB pp. 217-218 <br> 7-12 Commission-TE pp. 196-197B; SB pp. 196-197 / PB pp. 219-220 <br> 7-13 Simple Interest-TE pp. 198-199B; SB pp. 198-199 <br> / PB pp. 221-222 <br> 7-14 Compound Interest-TE pp. 200-201B; SB pp. <br> 200-201 / PB pp. 223-224 |
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| 7.2.2.3 Use knowledge of proportions to assess the reasonableness of solutions. <br> For example: Recognize that it would be unreasonable for a cashier to request $\$ 200$ if you purchase a $\$ 225$ item at $25 \%$ off. | Chapter 6 Ratio and Proportion <br> 6-3 Write and Solve Proportions-TE pp. 152-153B; SB pp. 152-153 / PB pp. 171-172 <br> 6-3A Use Unit Rates-Online <br> 6-4 Direct Proportion-TE pp. 154-155B; SB pp. <br> 154-155 / PB pp. 173-174 <br> 6-5 Proportion by Parts-TE pp. 156-157B; SB pp. <br> 156-157 / PB pp. 175-176 <br> 6-6 Scale Drawings and Models-TE pp. 158-159B; SB pp. 158-159 / PB pp. 177-178 <br> 6-6A Identify Unit Rate-Online <br> 6-6B Proportional Relationships and EquationsOnline <br> 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. <br> 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 $h \leq \frac{r}{2}$. <br> Another example: " $x$ is at least -3 and less than $5^{\prime \prime}$ can be represented as $-3 \leq x<5$, and also on a number line. | Chapter 2 Expressions and Equations <br> 2-3 Equations-TE pp. 34-35B; SB pp. 34-35 / PB pp. 37-38 <br> 2-4 Solve Addition Equations-TE pp. 36-37B; SB pp. 36-37 / PB pp. 39-40 <br> 2-5 Solve Subtraction Equations-TE pp. 38-39B; SB pp. 38-39 / PB pp. 41-42 <br> 2-6 Solve Multiplication Equations-TE pp. 40-41B; SB pp. 40-41 / PB pp. 43-44 <br> 2-7 Solve Division Equations-TE pp. 42-43B; SB pp. 42-43 / PB pp. 45-46 <br> 2-8 Solve Two-Step Equations-TE pp. 44-45B; SB pp. 44-45 / PB pp. 47-48 <br> 2-8A Solving Equations of the Form $a(x+b)=c$ Using Integers-Online |

## STRAND: ALGEBRA

Standard \& Benchmark Description
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.


## STRAND: ALGEBRA

Standard \& Benchmark Description
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 $3 x-7 x+1=$ $(3-7) x+1=4 x+1$.

## 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. 33-34
2-2 Simplify and Evaluate Algebraic Expressions-TE pp. 32-33B; SB 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

## 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

## Chapter 1 Integers

1-4B Understanding Integers (rewrite using grouping symbols)—Online

## STRAND: ALGEBRA

Standard \& Benchmark Description
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.

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

## STRAND: ALGEBRA

Standard \& Benchmark Description
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 $w$ in the equation $P=2 w+$ $2 /$ when $P=3.5$ and $/=0.4$

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 ProblemSolving 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

## Chapter 5 Rational Numbers: Fractions

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 Fractions-Online

## STRAND: ALGEBRA

Standard \& Benchmark Description
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 <br> 10-2 Perimeter-TE pp. 274-275B; SB pp. 274-275 / PB pp. 309-310 <br> 10-6 Area of Parallelograms-TE pp. 282-283B; SB pp. 282-283 / PB pp. 317-318 <br> 10-7 Area of Triangles and Trapezoids-TE pp. 284285B; SB pp. 284-285 / PB pp. 319-320 <br> 10-8 Circumference and Area of a Circle-TE pp. 286-287B; SB pp. 286-287 / PB pp. 321-322 <br> 10-9 Area of Complex Figures-TE pp. 288-289B; SB pp. 288-289 / PB pp. 323-324 <br> Chapter 11 Three-Dimensional Geometry <br> 11-3 Surface Area of Prisms-TE pp. 306-307B; SB pp. 306-307 / PB pp. 345-346 <br> 11-4 Surface Area of Pyramids-TE pp. 308-309B; SB pp. 308-309 / PB pp. 347-348 <br> 11-7 Volume of Prisms-TE pp. 314-315B; SB pp. 314-315 / PB pp. 353-354 <br> 11-8 Volume of Pyramids-TE pp. 316-317B; SB pp. 316-317 / PB pp. 355-356 <br> 11-9 Volume of Cylinders and Cones-TE pp. 318-319B; SB pp. 318-319 / PB pp. 357-358 <br> 11-10 Surface Area and Volume of Complex ThreeDimensional Figures-TE pp. 320-321B; SB pp. 320-321 / PB pp. 359-360 |
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| 7.2.4.2 Solve equations resulting from proportional relationships in various contexts. <br> 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. <br> Another example: Determine the price of 12 yards of ribbon if 5 yards of ribbon cost $\$ 1.85$. | Chapter 6 Ratio and Proportion <br> 6-2 Unit Rate and Unit Cost-TE pp. 150-151B; SB pp. 150-151 / PB pp. 169-170 <br> 6-3 Write and Solve Proportions-TE pp. 152-153B; SB pp. 152-153 / PB pp. 171-172 <br> 6-3A Use Unit Rates-Online <br> 6-4 Direct Proportion-TE pp. 154-155B; SB pp. <br> 154-155 / PB pp. 173-174 <br> 6-5 Proportion by Parts-TE pp. 156-157B; SB pp. <br> 156-157 / PB pp. 175-176 <br> 6-6 Scale Drawings and Models-TE pp. 158-159B; SB pp. 158-159 / PB pp. 177-178 <br> 6-6B Proportional Relationships and EquationsOnline |

## STRAND: ALGEBRA

Standard \& Benchmark Description
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.


## STRAND: GEOMETRY \& MEASUREMENT

Standard \& Benchmark Description
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 $\pi$. Calculate the circumference and area of circles and sectors of circles to solve problems in various contexts.
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 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 Applications10-8 Circumference and Area of a Circle-TE pp. 286287B; SB pp. 286-287 / PB pp. 321-322

## 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 ThreeDimensional 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

## STRAND: GEOMETRY \& MEASUREMENT

Standard \& Benchmark Description

### 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. 284285B; 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. 361-362
Chapter 11 Enrichment: Three-Dimensional Figures and the Ratio of Similarity-TE pp. 326-327B; SB pp. 326-327 / PB pp. 365-366
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, $\frac{1}{2}$ inch represents 25 miles.
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 $y$-axis.

## 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

## 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

## STRAND: DATA ANALYSIS \& PROBABILITY

Standard \& Benchmark Description
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.
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

8-1A 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

## 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. 230231B; 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. 232-233B; SB pp. 232-233 / PB pp. 259-260

## 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

### 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

## 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. 344345 / PB pp. 387-388

## 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

