BLACKLINES

PRACTICE BOOK

BRIDGES IN MATHEMATICS 5

Martha Ruttle

The MATH LEARNING CENTER

B5PB-B

The pages in this Practice Book can be assigned in order to provide practice with key skills during each unit of the Bridges in Mathematics curriculum. The pages can also be used with other elementary math curricula. If you are using this Practice Book with another curriculum, use the tables of pages grouped by skill (iii–x) to assign pages based on the skills they address, rather than in order by page number.

Bridges in Mathematics Grade 5 Practice Book Blacklines

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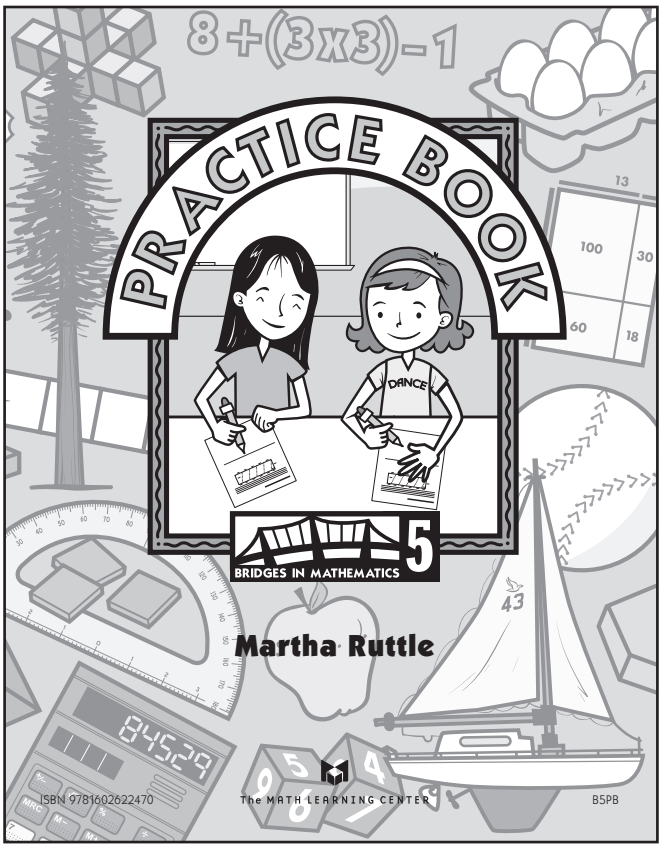
Bridges in Mathematics is a standards-based K–5 curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates the Number Corner, a collection of daily skill-building activities for students.

The Math Learning Center is a nonprofit organization serving the education community. Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based professional development, curriculum, materials, and resources to support learning and teaching. To find out more, visit us at www.mathlearningcenter.org.

Practice Books

The student blacklines in this packet are also available as a pre-printed student book.



Bridges Practice Books

Single Copy	B5PB
Pack of 10	B5PB10

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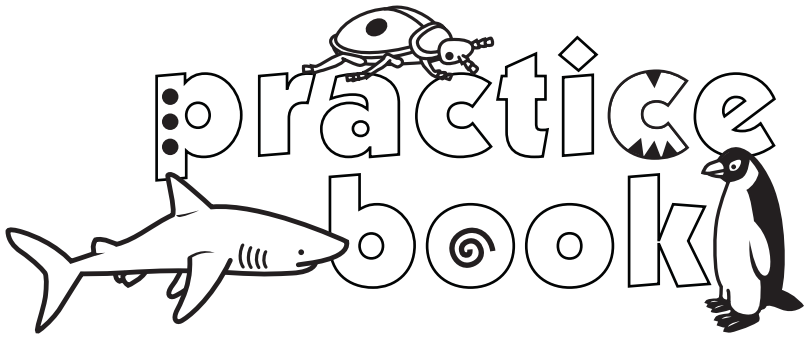

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Practice Pages Grouped by Skill iii
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Unit One: Connecting Mathematical Topics

Use anytime after Session 10
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Finding Factor Pairs 2
Prime & Composite Numbers 3
Multiplication Practice 4
Multiplication, Division & Secret Path Problems 5
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Multiples of 6 & 7 7
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Run for the Arts 10

Use anytime after Session 21
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Use anytime after Session 10

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The Soccer Tournament & the Video Arcade 26
Metric Conversions 27
Riding the Bus & Reading for Fun 28
More Estimate & Check Problems 29
Race Car Problems 30

Use anytime after Session 20

Multiplication & Division Problems 31
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Snacks for the Field Trip 34
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Carla's Market & The Animal Shelter 36
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Use anytime after Session 12

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Length & Perimeter 48
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Use anytime after Session 22

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Use anytime after Session 10

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Division with Menus & Sketches 68
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Use anytime after Session 23

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Use anytime after Session 11

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Use anytime after Session 19

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Use anytime after Session 7

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Using the Greatest Common Factor to Simplify Fractions 102
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Using the Least Common Multiple to Compare Fractions 104
Finding Equivalent Fractions 105
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Use anytime after Session 19

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Use anytime after Session 16

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Use anytime during Bridges, Unit 8

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The Python Problem 138
Drawing Lines of Symmetry 139
Classifying Triangles Review 140

introduction

Bridges in Mathematics Grade 5 Practice Book Blacklines

There are 140 blacklines in this document, designed to be photocopied to provide fifth grade students with practice in key skill areas, including:

- multiplication and division facts
- factors and multiples, primes and composites
- multi-digit multiplication and division (computation and word problems)
- representing, comparing, and ordering fractions and decimals
- adding and subtracting fractions and decimals
- computational estimation
- patterns and equations
- geometry
- area and perimeter
- volume and surface area
- elapsed time and money
- graphing and data analysis
- problem solving

This set of blacklines also includes the following materials for the teacher:

- This introduction
- A complete listing of the student pages grouped by skill (see pages iii–x)
- Answer Keys (see pages xi–xxxii)

Note *These teacher materials are not included in the bound student version of the Practice Book, which is sold separately.*

While the Practice Book pages are not integral to the Bridges Grade 5 program, they may help you better address the needs of some or all of your students, as well as the grade-level expectations in your particular state. The Practice Book pages may be assigned as seatwork or homework after Bridges sessions that don't include Home Connections. These pages may also serve as:

- a source of skill review
- informal paper-and-pencil assessment
- preparation for standardized testing
- differentiated instruction

Every set of 10 pages has been written to follow the instruction in roughly half a Bridges unit. Practice pages 1–10 can be used any time after Unit One, Session 10; pages 11–20 can be used any time after Unit One, Session 21; and so on. (There are only 10 pages to accompany Units 7 and 8 because these are shorter units, usually taught toward the end of the school year.) Recommended timings are noted at the top of each page. If you are using this Practice Book with another curriculum, use the following lists to assign pages based on the skills they address.

Grade 5 Practice Book Introduction (cont.)

Many odd-numbered pages go naturally with the even-numbered pages that immediately follow them. Often, students will practice a skill or review key terms on the odd-numbered page and then apply that skill or those key terms to solve more open-ended problems on the following even-numbered page. (See pages 41–44, for example.) In these cases, you may find that it makes good sense to assign the two pages together. Before sending any page home, review it closely and then read over it with your students to address confusion and define unfamiliar terms in advance. Some of the problems on certain pages have been marked with a Challenge icon. These problems may not be appropriate for all the students in your classroom; consider assigning them selectively.

Grade 5 Practice Book Pages Grouped by Skill

MULTI-DIGIT ADDITION & SUBTRACTION		
Page Title	**Page Number**	**Recommended Timing**
Addition & Subtraction Review	9	Anytime after Bridges Unit 1, Session 10
Rounding & Estimation	16	Anytime after Bridges Unit 1, Session 21

FACTORS & MULTIPLES, PRIMES & COMPOSITES		
Page Title	**Page Number**	**Recommended Timing**
Finding Factor Pairs	2	Anytime after Bridges Unit 1, Session 10
Prime & Composite Numbers	3	Anytime after Bridges Unit 1, Session 10
Multiples of 3 & 4	6	Anytime after Bridges Unit 1, Session 10
Multiples of 6 & 7	7	Anytime after Bridges Unit 1, Session 10
Multiplication & Multiples (challenge)	8	Anytime after Bridges Unit 1, Session 10
Prime Factorization	13	Anytime after Bridges Unit 1, Session 21
More Prime Factorization	15	Anytime after Bridges Unit 1, Session 21
Division, Multiplication & Prime Factorization (challenge)	19	Anytime after Bridges Unit 1, Session 21
Number Patterns	33	Anytime after Bridges Unit 2, Session 20
Prime Factorization Review	89	Anytime after Bridges Unit 5, Session 11
Using the Greatest Common Factor to Simplify Fractions	102	Anytime after Bridges Unit 6, Session 7
Using the Least Common Multiple to Compare Fractions	104	Anytime after Bridges Unit 6, Session 7
Rewriting & Comparing More Fractions	106	Anytime after Bridges Unit 6, Session 7

MULTIPLICATION & DIVISION FACTS		
Page Title	**Page Number**	**Recommended Timing**
Multiplication & Division Facts	1	Anytime after Bridges Unit 1, Session 10
Multiplication, Division & Secret Path Problems	5	Anytime after Bridges Unit 1, Session 10
Multiplication & Multiples	8	Anytime after Bridges Unit 1, Session 10
Division, Multiplication & Prime Factorization	19	Anytime after Bridges Unit 1, Session 21
Secret Paths & Multiplication Tables	21	Anytime after Bridges Unit 2, Session 10
Using Basic Facts to Solve Larger Problems	22	Anytime after Bridges Unit 2, Session 10
Multiplication & Division Problems	31	Anytime after Bridges Unit 2, Session 20
Rounding & Division Practice	37	Anytime after Bridges Unit 2, Session 20
Multiplication & Division Tables	61	Anytime after Bridges Unit 4, Session 10
Using Basic Fact Strategies to Multiply Larger Numbers	62	Anytime after Bridges Unit 4, Session 10
Multiplication Problems & Mazes	63	Anytime after Bridges Unit 4, Session 10
Multiplication & Division Review	81	Anytime after Bridges Unit 5, Session 11

Grade 5 Practice Book Pages Grouped by Skill (cont.)

MULTI-DIGIT MULTIPLICATION & DIVISION		
Page Title	**Page Number**	**Recommended Timing**
Multiplication Practice	4	Anytime after Bridges Unit 1, Session 10
Division, Multiplication & Prime Factorization	19	Anytime after Bridges Unit 1, Session 21
Using Basic Facts to Solve Larger Problems	22	Anytime after Bridges Unit 2, Session 10
Multiplication Estimate & Check	24	Anytime after Bridges Unit 2, Session 10
Using the Standard Multiplication Algorithm	25	Anytime after Bridges Unit 2, Session 10
More Estimate & Check Problems	29	Anytime after Bridges Unit 2, Session 10
Division on a Base-Ten Grid	35	Anytime after Bridges Unit 2, Session 20
Rounding & Division Practice	37	Anytime after Bridges Unit 2, Session 20
More Rounding & Estimation Practice	38	Anytime after Bridges Unit 2, Session 20
Using Basic Fact Strategies to Multiply Larger Numbers	62	Anytime after Bridges Unit 4, Session 10
Multiplication Problems & Mazes	63	Anytime after Bridges Unit 4, Session 10
Using Multiplication Menus to Solve Division Problems	66	Anytime after Bridges Unit 4, Session 10
Divisibility Rules	67	Anytime after Bridges Unit 4, Session 10
Division with Menus & Sketches	68	Anytime after Bridges Unit 4, Session 10
Division & Fraction Practice	79	Anytime after Bridges Unit 4, Session 23
Multiplication & Division Review	81	Anytime after Bridges Unit 5, Session 11
Thinking about Divisibility	82	Anytime after Bridges Unit 5, Session 11
Products & Secret Paths	83	Anytime after Bridges Unit 5, Session 11
Which Bag of Candy?	90	Anytime after Bridges Unit 5, Session 11
The Frozen Yogurt Problem	92	Anytime after Bridges Unit 5, Session 19
Division Estimate & Check	99	Anytime after Bridges Unit 5, Session 19
The Book Problem	100	Anytime after Bridges Unit 5, Session 19
Division Review	131	Anytime during Bridges Unit 8

MULTIPLICATION & DIVISION WORD PROBLEMS		
Page Title	**Page Number**	**Recommended Timing**
Run for the Arts	10	Anytime after Bridges Unit 1, Session 10
The Soccer Tournament & the Video Arcade	26	Anytime after Bridges Unit 2, Session 10
Riding the Bus & Reading for Fun	28	Anytime after Bridges Unit 2, Session 10
Race Car Problems	30	Anytime after Bridges Unit 2, Session 10
Multiplication & Division Problems	31	Anytime after Bridges Unit 2, Session 20
Baking Cookies & Drying Clothes	32	Anytime after Bridges Unit 2, Session 20
Snacks for the Field Trip	34	Anytime after Bridges Unit 2, Session 20
Carla's Market & The Animal Shelter	36	Anytime after Bridges Unit 2, Session 20
Estimating Money Amounts	39	Anytime after Bridges Unit 2, Session 20
More Division Story Problems	64	Anytime after Bridges Unit 4, Session 10
Money & Miles	70	Anytime after Bridges Unit 4, Session 10
Which Bag of Candy?	90	Anytime after Bridges Unit 5, Session 11
The Frozen Yogurt Problem	92	Anytime after Bridges Unit 5, Session 19
The Book Problem	100	Anytime after Bridges Unit 5, Session 19

Grade 5 Practice Book Pages Grouped by Skill (cont.)

REPRESENTING, COMPARING, ORDERING, ROUNDING & SIMPLIFYING FRACTIONS & DECIMALS		
Page Title	**Page Number**	**Recommended Timing**
Rounding Decimals	14	Anytime after Bridges Unit 1, Session 21
Fractions & Mixed Numbers	71	Anytime after Bridges Unit 4, Session 23
Comparing Fractions	75	Anytime after Bridges Unit 4, Session 23
Egg Carton Fractions	77	Anytime after Bridges Unit 4, Session 23
Coloring & Comparing Fractions	84	Anytime after Bridges Unit 5, Session 11
Simplifying Fractions	101	Anytime after Bridges Unit 6, Session 7
Using the Greatest Common Factor to Simplify Fractions	102	Anytime after Bridges Unit 6, Session 7
Rewriting & Comparing Fractions	103	Anytime after Bridges Unit 6, Session 7
Using the Least Common Multiple to Compare Fractions	104	Anytime after Bridges Unit 6, Session 7
Rewriting & Comparing More Fractions	106	Anytime after Bridges Unit 6, Session 7
Modeling Decimals	111	Anytime after Bridges Unit 6, Session 19
Finding the Common Denominator	117	Anytime after Bridges Unit 6, Session 19

EQUIVALENT FRACTIONS		
Page Title	**Page Number**	**Recommended Timing**
Equivalent Fractions on a Geoboard	73	Anytime after Bridges Unit 4, Session 23
Egg Carton Fractions	77	Anytime after Bridges Unit 4, Session 23
Using the Greatest Common Factor to Simplify Fractions	102	Anytime after Bridges Unit 6, Session 7
Rewriting & Comparing Fractions	103	Anytime after Bridges Unit 6, Session 7
Finding Equivalent Fractions	105	Anytime after Bridges Unit 6, Session 7

ADDING & SUBTRACTING FRACTIONS		
Page Title	**Page Number**	**Recommended Timing**
Adding Fractions	76	Anytime after Bridges Unit 4, Session 23
Fraction Story Problems	78	Anytime after Bridges Unit 4, Session 23
Division & Fraction Practice	79	Anytime after Bridges Unit 4, Session 23
More Fraction Story Problems	80	Anytime after Bridges Unit 4, Session 23
Adding Fractions	107	Anytime after Bridges Unit 6, Session 7
Adding Fractions & Mixed Numbers	108	Anytime after Bridges Unit 6, Session 7
Fraction Subtraction	109	Anytime after Bridges Unit 6, Session 7
More Fraction Subtraction	110	Anytime after Bridges Unit 6, Session 7
Fraction Estimate & Check	118	Anytime after Bridges Unit 6, Session 19
Lauren's Puppy	119	Anytime after Bridges Unit 6, Session 19
Adding Fractions with Different Denominators	127	Anytime after Bridges Unit 7, Session 8
Subtracting Fractions with Different Denominators	129	Anytime after Bridges Unit 7, Session 8
Fraction Addition & Subtraction Review	133	Anytime during Bridges Unit 8
More Fraction Problems	134	Anytime during Bridges Unit 8
Fraction Addition & Subtraction Story Problems	135	Anytime during Bridges Unit 8

Grade 5 Practice Book Pages Grouped by Skill (cont.)

ADDING & SUBTRACTING DECIMALS		
Page Title	**Page Number**	**Recommended Timing**
Decimal Sums & Differences	112	Anytime after Bridges Unit 6, Session 19
Using Models to Add & Subtract Decimals	113	Anytime after Bridges Unit 6, Session 19
Adding & Subtracting Decimals	114	Anytime after Bridges Unit 6, Session 19
Decimal Addition & Subtraction	115	Anytime after Bridges Unit 6, Session 19
Decimal Story Problems	116	Anytime after Bridges Unit 6, Session 19
Modeling, Adding & Subtracting Decimals	130	Anytime after Bridges Unit 7, Session 8
Decimal Addition & Subtraction Review	137	Anytime during Bridges Unit 8
The Python Problem	138	Anytime during Bridges Unit 8

FRACTION & DECIMAL WORD PROBLEMS		
Page Title	**Page Number**	**Recommended Timing**
Fraction Story Problems	78	Anytime after Bridges Unit 4, Session 23
More Fraction Story Problems	80	Anytime after Bridges Unit 4, Session 23
Decimal Story Problems	116	Anytime after Bridges Unit 6, Session 19
Lauren's Puppy	119	Anytime after Bridges Unit 6, Session 19
Fraction Addition & Subtraction Review	133	Anytime during Bridges Unit 8
Fraction Addition & Subtraction Story Problems	135	Anytime during Bridges Unit 8
The Python Problem	138	Anytime during Bridges Unit 8

COMPUTATIONAL ESTIMATION		
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Rounding Decimals	14	Anytime after Bridges Unit 1, Session 21
Rounding & Estimation	16	Anytime after Bridges Unit 1, Session 21
Multiplication Estimate & Check	24	Anytime after Bridges Unit 2, Session 10
More Estimate & Check Problems	29	Anytime after Bridges Unit 2, Session 10
Rounding & Division Practice	37	Anytime after Bridges Unit 2, Session 20
More Rounding & Estimation Practice	38	Anytime after Bridges Unit 2, Session 20
Estimating Money Amounts	39	Anytime after Bridges Unit 2, Session 20
Products & Secret Paths	83	Anytime after Bridges Unit 5, Session 11
Division Estimate & Check	99	Anytime after Bridges Unit 5, Session 19
Fraction Estimate & Check	118	Anytime after Bridges Unit 6, Session 19
Division Review	131	Anytime during Bridges Unit 8

WRITING & SOLVING EQUATIONS		
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Multiplication & Division Problems	31	Anytime after Bridges Unit 2, Session 20
Solving Equations & Pattern Problems	124	Anytime after Bridges Unit 7, Session 8
Variables & Expressions	125	Anytime after Bridges Unit 7, Session 8
Cheetahs & Muffins	126	Anytime after Bridges Unit 7, Session 8
Danny's Yard Work	128	Anytime after Bridges Unit 7, Session 8

Grade 5 Practice Book Pages Grouped by Skill (cont.)

NUMBER PROPERTIES		
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Understanding & Using Number Properties	12	Anytime after Bridges Unit 1, Session 21
Reviewing Three Number Properties	122	Anytime after Bridges Unit 7, Session 8

ORDER OF OPERATIONS		
Page Title	**Page Number**	**Recommended Timing**
Order of Operations	11	Anytime after Bridges Unit 1, Session 21
Order of Operations Review	121	Anytime after Bridges Unit 7, Session 8

NUMBER PATTERNS		
Page Title	**Page Number**	**Recommended Timing**
Number Patterns	33	Anytime after Bridges Unit 2, Session 20
Finding Patterns & Solving Problems	123	Anytime after Bridges Unit 7, Session 8
Solving Equations & Pattern Problems (challenge)	124	Anytime after Bridges Unit 7, Session 8

COORDINATE GRIDS		
Page Title	**Page Number**	**Recommended Timing**
Rita's Robot	55	Anytime after Bridges Unit 3, Session 22
The Robot's Path	98	Anytime after Bridges Unit 5, Session 19

GEOMETRY		
Page Title	**Page Number**	**Recommended Timing**
Classifying Quadrilaterals	41	Anytime after Bridges Unit 3, Session 12
Drawing Quadrilaterals	42	Anytime after Bridges Unit 3, Session 12
Classifying Triangles	43	Anytime after Bridges Unit 3, Session 12
Identifying & Drawing Triangles	44	Anytime after Bridges Unit 3, Session 12
Naming Transformations	49	Anytime after Bridges Unit 3, Session 12
Which Two Transformations?	50	Anytime after Bridges Unit 3, Session 12
Faces, Edges & Vertices	56	Anytime after Bridges Unit 3, Session 22
Classifying Triangles & Quadrilaterals	97	Anytime after Bridges Unit 5, Session 19
Drawing Lines of Symmetry	139	Anytime during Bridges Unit 8
Classifying Triangles Review	140	Anytime during Bridges Unit 8

Grade 5 Practice Book Pages Grouped by Skill (cont.)

AREA & PERIMETER		
Page Title	**Page Number**	**Recommended Timing**
Chin's Vegetable Patch	20	Anytime after Bridges Unit 1, Session 21
Kasey's Blueberry Bushes	40	Anytime after Bridges Unit 2, Session 20
Drawing Quadrilaterals (challenge)	42	Anytime after Bridges Unit 3, Session 12
Finding the Areas of Rectangles, Triangles & Parallelograms	45	Anytime after Bridges Unit 3, Session 12
Area Story Problems	46	Anytime after Bridges Unit 3, Session 12
Finding the Areas of Quadrilaterals	47	Anytime after Bridges Unit 3, Session 12
Length & Perimeter	48	Anytime after Bridges Unit 3, Session 12
Finding the Areas of Parallelograms	51	Anytime after Bridges Unit 3, Session 22
The Bulletin Board Problem	52	Anytime after Bridges Unit 3, Session 22
Finding the Area of a Triangle	53	Anytime after Bridges Unit 3, Session 22
More Area Problems	54	Anytime after Bridges Unit 3, Session 22
Measuring to Find the Area	58	Anytime after Bridges Unit 3, Session 22
Triangles & Tents	72	Anytime after Bridges Unit 4, Session 23
Metric Length, Area & Volume	74	Anytime after Bridges Unit 4, Session 23
The Garage Roof & The Parking Lot	85	Anytime after Bridges Unit 5, Session 11
Square Inches, Square Feet & Square Yards	91	Anytime after Bridges Unit 5, Session 19
More Fraction Problems	134	Anytime during Bridges Unit 8

SURFACE AREA & VOLUME		
Page Title	**Page Number**	**Recommended Timing**
Surface Area & Volume	57	Anytime after Bridges Unit 3, Session 22
Volume & Surface Area of Rectangular & Triangular Prisms	59	Anytime after Bridges Unit 3, Session 22
Surface Area & Volume Story Problems	60	Anytime after Bridges Unit 3, Session 22
Which Box Holds the Most?	65	Anytime after Bridges Unit 4, Session 10
Francine's Piece of Wood	69	Anytime after Bridges Unit 4, Session 10

MEASUREMENT & CONVERSIONS (LENGTH, WEIGHT, CAPACITY, AREA)		
Page Title	**Page Number**	**Recommended Timing**
Metric Conversions	27	Anytime after Bridges Unit 2, Session 10
Length & Perimeter	48	Anytime after Bridges Unit 3, Session 12
More Area Problems	54	Anytime after Bridges Unit 3, Session 22
Measuring to Find the Area	58	Anytime after Bridges Unit 3, Session 22
Metric Length, Area & Volume	74	Anytime after Bridges Unit 4, Session 23
Square Inches, Square Feet & Square Yards (challenge)	91	Anytime after Bridges Unit 5, Session 19

Grade 5 Practice Book Pages Grouped by Skill (cont.)

MONEY		
Page Title	**Page Number**	**Recommended Timing**
Roberta's Time & Money Problem	18	Anytime after Bridges Unit 1, Session 21
Riding the Bus & Reading for Fun	28	Anytime after Bridges Unit 2, Session 10
Estimating Money Amounts	39	Anytime after Bridges Unit 2, Session 20
Money & Miles	70	Anytime after Bridges Unit 4, Session 10
Rachel & Dimitri's Trip to the Store	120	Anytime after Bridges Unit 6, Session 19

ELAPSED TIME		
Page Title	**Page Number**	**Recommended Timing**
Time Calculations	17	Anytime after Bridges Unit 1, Session 21
Roberta's Time & Money Problem	18	Anytime after Bridges Unit 1, Session 21
Riding the Bus & Reading for Fun	28	Anytime after Bridges Unit 2, Session 10
Time Problems	86	Anytime after Bridges Unit 5, Session 11

GRAPHING, PROBABILITY & DATA ANALYSIS		
Page Title	**Page Number**	**Recommended Timing**
Amanda's Height Graph	87	Anytime after Bridges Unit 5, Session 11
Kurt's Height Graph	88	Anytime after Bridges Unit 5, Session 11
The Homework Survey	93	Anytime after Bridges Unit 5, Session 19
The Fifth-Grade Reading Survey	94	Anytime after Bridges Unit 5, Session 19
Reading & Interpreting a Circle Graph	95	Anytime after Bridges Unit 5, Session 19
Constructing & Interpreting a Circle Graph	96	Anytime after Bridges Unit 5, Session 19
Reading & Interpreting a Double Bar Graph	136	Anytime during Bridges Unit 8

Grade 5 Practice Book Pages Grouped by Skill (cont.)

PROBLEM SOLVING		
Page Title	**Page Number**	**Recommended Timing**
Multiples of 3 & 4	6	Anytime after Bridges Unit 1, Session 10
Multiples of 6 & 7	7	Anytime after Bridges Unit 1, Session 10
Multiplication & Multiples (challenge)	8	Anytime after Bridges Unit 1, Session 10
Run for the Arts	10	Anytime after Bridges Unit 1, Session 10
Time Calculations	17	Anytime after Bridges Unit 1, Session 21
Roberta's Time & Money Problem	18	Anytime after Bridges Unit 1, Session 21
Division, Multiplication & Prime Factorization (challenge)	19	Anytime after Bridges Unit 1, Session 21
Chin's Vegetable Patch	20	Anytime after Bridges Unit 1, Session 21
The Soccer Tournament & the Video Arcade	26	Anytime after Bridges Unit 2, Session 10
Riding the Bus & Reading for Fun	28	Anytime after Bridges Unit 2, Session 10
Race Car Problems	30	Anytime after Bridges Unit 2, Session 10
Multiplication & Division Problems	31	Anytime after Bridges Unit 2, Session 20
Baking Cookies & Drying Clothes	32	Anytime after Bridges Unit 2, Session 20
Snacks for the Field Trip	34	Anytime after Bridges Unit 2, Session 20
Carla's Market & The Animal Shelter	36	Anytime after Bridges Unit 2, Session 20
More Rounding & Estimation Practice	38	Anytime after Bridges Unit 2, Session 20
Estimating Money Amounts	39	Anytime after Bridges Unit 2, Session 20
Kasey's Blueberry Bushes	40	Anytime after Bridges Unit 2, Session 20
Identifying & Drawing Quadrilaterals (challenge)	44	Anytime after Bridges Unit 3, Session 12
Area Story Problems	46	Anytime after Bridges Unit 3, Session 12
Length & Perimeter (challenge)	48	Anytime after Bridges Unit 3, Session 12
The Bulletin Board Problem	52	Anytime after Bridges Unit 3, Session 22
Surface Area & Volume Story Problems	60	Anytime after Bridges Unit 3, Session 22
More Division Story Problems	64	Anytime after Bridges Unit 4, Session 10
Which Box Holds the Most?	65	Anytime after Bridges Unit 4, Session 10
Money & Miles	70	Anytime after Bridges Unit 4, Session 10
Fraction Story Problems	78	Anytime after Bridges Unit 4, Session 23
More Fraction Story Problems	80	Anytime after Bridges Unit 4, Session 23
Time Problems	86	Anytime after Bridges Unit 5, Session 11
Which Bag of Candy?	90	Anytime after Bridges Unit 5, Session 11
The Frozen Yogurt Problem	92	Anytime after Bridges Unit 5, Session 19
The Book Problem	100	Anytime after Bridges Unit 5, Session 19
Decimal Story Problems	116	Anytime after Bridges Unit 6, Session 19
Lauren's Puppy	119	Anytime after Bridges Unit 6, Session 19
Rachel & Dimitri's Trip to the Store	120	Anytime after Bridges Unit 6, Session 19
Cheetahs & Muffins	126	Anytime after Bridges Unit 7, Session 8
Danny's Yard Work	128	Anytime after Bridges Unit 7, Session 8
Jorge & Maribel's Present	132	Anytime during Bridges Unit 8
Fraction Addition & Subtraction Review	133	Anytime during Bridges Unit 8
More Fraction Problems	134	Anytime during Bridges Unit 8
Fraction Addition & Subtraction Story Problems	135	Anytime during Bridges Unit 8
The Python Problem	138	Anytime during Bridges Unit 8
Classifying Triangles Review	140	Anytime during Bridges Unit 8

Grade 5 Practice Book

ANSWER KEY

Use after Unit One, Session 10

Page 1, Multiplication & Division Facts

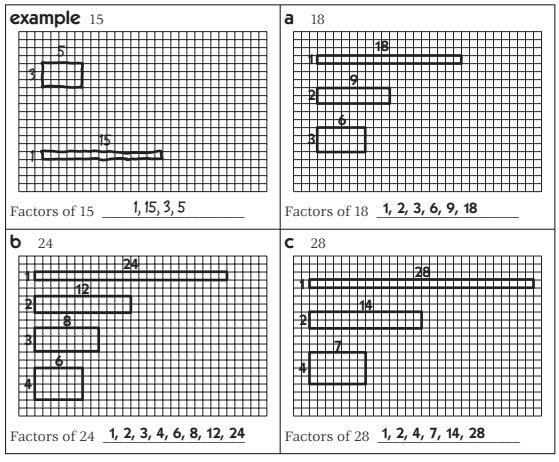
1 0, 28, 48, 12, 36, 18, 56,
16, 48, 49, 32, 9, 21, 30,
40, 25, 64, 27, 36, 35, 42

2 7, 9, 8
7, 7, 7

3 **a** $2 \times 24 > 2 \times 16$
b $400 \div 80 < 400 \div 10$
c $77 - 20 > 67 - 20$
d $36 + 23 < 46 + 16$
e $458 - 129 = 358 - 29$
f (challenge) $3 \times 360 < 40 \times 30$
g (challenge) $50 \times 400 = 400 \times 50$
h (challenge) $2{,}500 \div 10 > 1{,}000 \div 5$
i (challenge) $24{,}000 \div 6 = 48{,}000 \div 12$

Page 2, Finding Factor Pairs

1



2 (challenge) 1, 2, 4, 5, 10, 20, 25, 50, 100

Page 3, Prime & Composite Numbers

1

a 5	(prime) composite	1, 5
b 16	prime (composite)	1, 2, 4, 8, 16
c 27	prime (composite)	1, 3, 9, 27
d 31	(prime) composite	1, 31
e 36	prime (composite)	1, 2, 3, 4, 6, 9, 12, 18, 36
f 108	prime (composite)	1, 2, 3, 4, 6, 9, 12, 18, 27, 36, 54, 108
g 126	prime (composite)	1, 2, 3, 6, 7, 9, 14, 18, 21, 42, 63, 126

2 No. Students' explanations will vary. Example: *Prime numbers aren't always odd because 2 is an even number and it only has 2 factors: 1 and 2. Composite numbers aren't always even because 27 is a composite number with 4 factors: 1, 3, 9, and 27.*

Page 4, Multiplication Practice

1 60, 80, 180, 240, 270, 200, 280,
150, 200, 400, 480, 300, 360, 490,
210, 630, 560, 480, 720, 720, 320

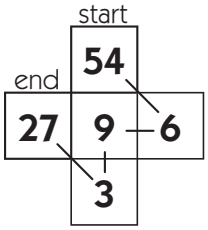
2 162, 145, 342
424, 648, 868, 2598

Page 5, Multiplication, Division & Secret Path Problems

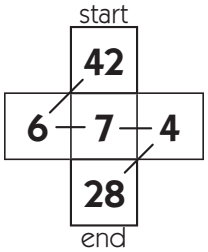
1 32, 63, 0, 25, 18, 42, 8,
27, 18, 70, 35, 64, 27, 40,
81, 28, 54, 49, 56, 72, 96

2 6, 6, 5
4, 6, 3

3 **a** $54 \div 6 = 9$, $9 \times 3 = 27$



b $42 \div 6 = 7$, $7 \times 4 = 28$



ANSWER KEY

Use after Unit One, Session 10 (cont.)

Page 6, Multiples of 3 & 4

1 a

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b Students' responses will vary. Example: *The multiples of 3 go in pattern of odd, even, odd, even. There are 3 in the first row, 3 in the second row, and 4 in the third row. That pattern repeats in the fourth, fifth, and sixth row, and again in the seventh, eighth, and ninth row. The numbers form diagonals on the grid.*

2 a

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b Students' responses will vary. Example: *The multiples of 4 are all even. They all end in 0, 2, 4, 6, or 8. There are 2 in the first row and 3 in the second row. That pattern keeps repeating all the way down the grid. The numbers form straight lines on the grid.*

3 Students' responses will vary. Example: *Numbers that are multiples of both 3 and 4 are all even. They are all multiples of 12, like 12, 24, 36, 48, 60, and so on. They form diagonals on the grid.*

Page 7, Multiples of 6 & 7

1 a

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b Students' responses will vary. Example: *The multiples of 6 are all even. Every other multiple of 6 is also a multiple of 12. The numbers form diagonals on the grid. There is a pattern in the 1's place that goes 6, 2, 8, 4, 0; 6, 2, 8, 4, 0.*

2 a

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b Students' responses will vary. Example: *The multiples of 7 go in a pattern of odd, even, odd, even. Every other multiple of 7 is also a multiple of 14. The numbers form steep diagonals on the grid.*

3 Students' responses will vary. Example: *Numbers that are multiples of both 6 and 7 are also multiples of 42. There are only two of them on the grid, 42 and 84.*

4 126, Students' explanations will vary. Example: *Since numbers that are multiples of both 6 and 7 have to be multiples of 42, the next one after 84 must be 126 because 84 + 42 = 126.*

Use after Unit One, Session 10 (cont.)

Page 8, Multiplication & Multiples

1 30, 28, 36, 14, 63, 42, 48,
49, 28, 56, 48, 120, 84, 108

2 (challenge) Students' explanations will vary. Example: *6 is an even number. An even number plus an even number is always even. Any time you add 6 to a multiple of 6, you will always get an even number. 7 is an odd number. An odd plus an odd is even, so 7 + 7 = 14. Then 14 + 7 is an odd number, 21, because you've added an even and an odd number. When you add 7 to 21, you're adding two odds again, so you get an even number, 28. That is why multiples of 7 can have any digit in the ones place.*

3 (challenge) Students' explanations will vary. Example: *Any number that is a multiple of both 6 and 7 has to be a multiple of 42. 42 is even, so every multiple of 42 will also be even because even plus even is always even.*

Page 9, Addition & Subtraction Review

1 599, 801, 1343, 5,026

2 256, 197, 748, 2,235

3 **a** 70

b 10

c 36

d 44

e (challenge) 9

f (challenge) 2

4 **a**

$$\begin{array}{r} \boxed{4}\,0\,\boxed{2} \\ -\,1\,\boxed{7}\,9 \\ \hline 2\,2\,3 \end{array}$$

b

$$\begin{array}{r} \boxed{5}\,8\,2 \\ -\,1\,\boxed{7}\,\boxed{7} \\ \hline 4\,0\,5 \end{array}$$

c

$$\begin{array}{r} \boxed{4}\,2\,4\,6 \\ -\,1\,\boxed{3}\,2\,\boxed{9} \\ \hline 2\,9\,\boxed{1}\,7 \end{array}$$

d

$$\begin{array}{r} 3\,0\,\boxed{0}\,8 \\ -\,1\,\boxed{2}\,9\,\boxed{6} \\ \hline \boxed{1}\,7\,1\,2 \end{array}$$

e

$$\begin{array}{r} 5\,0\,6\,\boxed{9}\,3 \\ -\boxed{3}\,7\,\boxed{5}\,5\,5 \\ \hline 1\,\boxed{3}\,1\,3\,\boxed{8} \end{array}$$

Page 10, Run for the Arts

1 **a** Students' responses will vary. Example: *How many miles does Stephanie have to run to get more money than Emma?*

b & c ~~Stephanie is 11 years old. Her sister Emma is 9 years old.~~ They are doing Run for the Arts at their school. Stephanie wants people to make pledges based on the number of miles she runs. Emma just wants people to pledge a certain amount of money. Their grandma pledged $36 for Emma and $8 per mile for Stephanie. Their uncle pledged $18 for Emma and $7 per mile for Stephanie. How many miles will Stephanie need to run to earn more money than Emma?

d 4 miles. Students' work will vary.

e Students' explanations will vary.

Use after Unit One, Session 21

Page 11, Order of Operations

1 **a** $(9 + 3) \times (16 \div 8) \div 4$
$= 12 \times 2 \div 4$
$= 6$

b $(365 + 35) \div 5 + 3$
$= 400 \div 5 + 3$
$= 80 + 3$
$= 83$

c $36 \div 6 + 4 \times (27 \div 9)$
$= 36 \div 6 + 4 \times 3$
$= 6 + 12$
$= 18$

d $(26 - 18) \times 5 \div 10 + 10$
$= 8 \times 5 \div 10 + 10$
$= 40 \div 10 + 10$
$= 4 + 10$
$= 14$

2 Note: Students only need to insert parentheses. Solutions are shown for your benefit.

a $2 \times 18 - (5 + 15) \div 5 = 32$
$36 - 20 \div 5 = 32$
$36 - 4 = 32$
$32 = 32$

ANSWER KEY

Use after Unit One, Session 21 (cont.)

Page 11, Order of Operations (cont.)

2 **b** $(34 - 20) \div (4 + 3) = 2$
$14 \div 7 = 2$
$2 = 2$

c $14 = 50 - (42 \div (3 + 4) \times 6)$
$14 = 50 - (42 \div 7 \times 6)$
$14 = 50 - 6 \times 6$
$14 = 50 - 36$
$14 = 14$

d $21 = 7 + (16 - 8) \div 2 + (2 \times 25 \div 5)$
$21 = 7 + 8 \div 2 + (50 \div 5)$
$21 = 7 + 4 + 10$
$21 = 11 + 10$
$21 = 21$

3 (challenge) Student work will vary.
Example: *3 + 2 ÷ 1 and 0 + 2 × 4*

Page 12, Understanding & Using Number Properties

1

a (69 + 45) + 55	69 + (45 + 55)	169	C (A) D
b 4 × 32	4 × (30 + 2)	128	C A (D)
c 4 × (16 × 25)	16 × (4 × 25) or (4 × 25) × 16	1,600	(C) (A) D
d (250 + 86) + 50	86 + (250 +50) or (250 + 50) + 86	386	(C) (A) D

Page 13, Prime Factorization

1 Factor trees may vary.

a 18	18 → 2, 9 → 3, 3	1, 18 2, 9 3, 6
b 45	45 → 5, 9 → 3, 3	1, 45 3, 15 5, 9
c 72	72 → 2, 36 → 2, 18 → 2, 9 → 3, 3	1, 72 2, 36 3, 24 4, 18 6, 12 8, 9

2 1, 3, 9

3 9

Page 14, Rounding Decimals

1 **a** 2.47 rounds down to 2.00

b 33.29 rounds down to 33.00

c 4.56 rounds up to 5.00

2 **a** 17.28 rounds up to 20.00

b 35.67 rounds up to 40.00

c 43.05 rounds down to 40.00

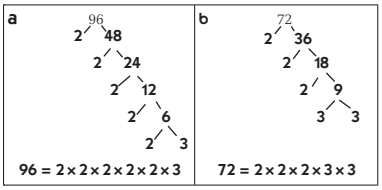
3 **a** Yes, he has enough money.

b No, she does not have enough money.

c Yes, he has enough money.

Page 15, More Prime Factorization

1 Factor trees may vary.



2 **a** 84, 96, 72

b 84, 96, 72

c 96, 72

d 96, 72

3 **a** It is even.

b Students' explanations will vary. Example: *12 is even. Every multiple of 12 will be even, because an even number plus an even number is always even. Since every multiple of 12 is even, any number that has 12 as a factor must be even.*

4 You can be certain that 1, 2, and 5 are also factors of that number. (Note: 1 is a factor of all numbers. The prime factorization of 10 is 2 × 5, so 2 and 5 must be factors of any multiple of 10.)

Page 16, Rounding & Estimation

1

a 170	47	153 (108)	50 + 150 = 200 (153) 50 + 110 = 160 (108)
b 190	83	(96) 132	80 + 100 = 180 (96) 80 + 130 = 210 (132)
c 230	89	(118) 172	90 + 120 = 210 (118) 90 + 170 = 260 (172)

2 **a** No. She will not finish the book. (second circle)

b No. He will not have enough money (second circle)

Page 17, Time Calculations

1 60

2 **a** 2 hours, 15 minutes. Students' work will vary.

b 1 hour, 15 minutes. Students' work will vary.

c 2 hours, 30 minutes. Students' work will vary.

Use after Unit One, Session 21 (cont.)

Page 17, Time Calculations (cont.)

3 1 hour, 45 minutes. Students' work will vary.

4 Miguel gets more sleep each night. Students' explanations will vary. Miguel gets 10 hrs. Carlos gets 9 hrs. 45 min.

Page 18, Roberta's Time & Money Problem

1 a Student responses will vary. Example: *What time does Roberta have to leave in the morning to make at least $50 working for her grandma?*

b & c Roberta's grandma asked her to help clean up her yard and garden on Saturday. She said she will pay Roberta $8 per hour. Roberta's mom says she can go, but that she needs to be home by 4:30 pm. It takes Roberta 30 minutes to ride her bike ~~the 5 miles~~ to her grandma's house and 30 minutes to ride home. If she takes an hour break to eat lunch with her grandma, what time should she leave her home in the morning so that she can make at least $50 and get home at 4:30?

d Roberta needs to leave her home in the morning at 8:15 to make exactly $50. If she leaves earlier, she can make more than $50. Student work will vary.

e Student explanations will vary.

Page 19, Division, Multiplication & Prime Factorization

1 9, 6, 5, 8, 7, 4, 3

2 a 972

b 1628

c 3,776

3 (challenge) The greatest factor of 96 (other than 96) is 48.

Page 20, Chin's Vegetable Patch

1 a Student responses will vary. Example: *How wide and how long should Chin make his vegetable patch to have the largest area?*

b 9 feet long and 9 feet wide.

2 (challenge) Student responses will vary. Example: *Here is a list of all the rectangles you can make that have a perimeter of 36 feet. The area of each one is different, and they increase as the two dimensions get closer.*

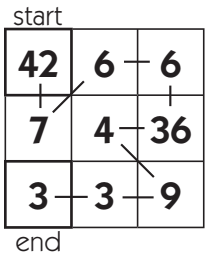
1 × 17 = 17 sq. ft.
2 × 16 = 32 sq. ft.
3 × 15 = 45 sq. ft.
4 × 14 = 56 sq. ft.
5 × 13 = 65 sq. ft.
6 × 12 = 72 sq. ft.
7 × 11 = 77 sq. ft.
8 × 10 = 80 sq. ft.
9 × 9 = 81 sq. ft.

The area of each rectangle differs from the one below it by an odd number, starting with 15, then 13, 11, 9, 7, 5, 3, and finally 1 square foot. There isn't much difference between the area of an 8 × 10 rectangle and a 9 × 9 rectangle, but the 9 × 9 is still a little big bigger.

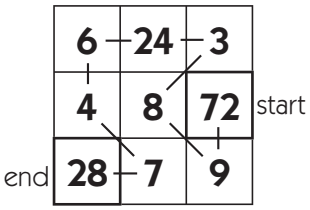
Use after Unit Two, Session 10

Page 21, Secret Paths & Multiplication Tables

1 a 42 ÷ 7 = 6, 6 × 6 = 36, 36 ÷ 4 = 9, 9 ÷ 3 = 3



b 72 ÷ 9 = 8, 8 × 3 = 24, 24 ÷ 6 = 4, 4 × 7 = 28



Use after Unit Two, Session 10 (cont.)

Page 21, Secret Paths & Multiplication Tables (cont.)

2 **a** 54, 24, 42, 30, 18, 36, 48

b 14, 63, 28, 49, 35, 21, 42, 56

c 16, 72, 32, 56, 40, 24, 48, 64

d (challenge) 60, 90, 110, 120, 180, 125, 135, 175

Page 22, Using Basic Facts to Solve Larger Problems

1		
8 x 6 = 48	80 × 6 = 480	Student responses will vary.
6 × 8 = 48	**6 x 80 = 480**	Student responses will vary.
48 ÷ 8 = 6	480 ÷ 80 = 6	Student responses will vary.
48 ÷ 6 = 8	**480 ÷ 6 = 80**	Student responses will vary.
2		
4 x 9 = 36	40 × 9 = 360	Student responses will vary.
9 × 4 = 360	**9 x 40 = 360**	Student responses will vary.
36 ÷ 4 = 9	360 ÷ 40 = 9	Student responses will vary.
36 ÷ 9 = 4	**360 ÷ 9 = 40**	Student responses will vary.
3		
3 x 7 = 21	30 × 7 = 210	Student responses will vary.
7 × 3 = 21	**7 x 30 = 210**	Student responses will vary.
21 ÷ 3 = 7	210 ÷ 30 = 7	Student responses will vary.
21 ÷ 7 = 3	**210 ÷ 7 = 30**	Student responses will vary.

Page 23, Multiplying by Multiples of 10

1 100; 1,000; 10,000; 200; 2,000; 400

2 30, 6, 60, 3

3 **a** 24; 2,400; Problems and solutions will vary.

b 56; 560; Problems and solutions will vary.

c 27; 270; Problems and solutions will vary.

d 54; 5,400; Problems and solutions will vary.

e 36; 360; Problems and solutions will vary.

Page 24, Multiplication Estimate & Check

1 **a** Estimate: 40 × 40 = 1,600; Solution: 1,554

b Estimate: 70 × 30 = 2,100; Solution: 1,898

c Estimate: 30 × 20 = 600; Solution: 627

d Estimate: 80 × 40 = 3,200; Solution: 3,192

e Estimate: 60 × 40 = 2,400; Solution: 2,464

2 (challenge) 26 and 49

Page 25, Using the Standard Multiplication Algorithm

1 2,400; 3,200; 2,700; 3,600; 3,000; 4,000

2 **a** 2,054

b 2,752

c 3,404

d 3,526

e 2,842

Page 26, The Soccer Tournament & the Video Arcade

1 282 players; Students' work will vary.

2 $5.25; Students' work will vary.

Page 27, Metric Conversions

1 **a** 100; 1,000

b 100,000; 1,000,000

2 **a** 100; 1,000

b 400; 7000

3 **a** 100; 1,000

b 450; 3,500

7 **a** (challenge) 1,000,000

b (challenge) 4,500,000

Page 28, Riding the Bus & Reading for Fun

1 $16.10; Student work will vary.

2 Two hours and 55 minutes. Student work will vary.

Page 29, More Estimate & Check Problems

1 **a** Estimate: 40 × 20 = 800; Solution: 741

b Estimate: 30 × 40 = 1,200; Solution: 1,064

c Estimate: 90 × 20 = 1,800; Solution: 1,958

d Estimate: 70 × 50 = 3,500; Solution: 3,692

e Estimate: 60 × 40 = 2,400; Solution: 2,604

2 (challenge) 19 and 33

Page 30, Race Car Problems

1 About 53 gallons of gas; Student work will vary.

2 About 2,279 gallons of gas, more or less; Student work will vary.

Use after Unit Two, Session 20

Page 31, Multiplication & Division Problems

1 8, 2, 8, 9, 7
9, 5, 7, 4, 7

2 **a** 36 ÷ 12 = 3 (12 × 3 = 36 is also acceptable); 3 cartons of 12 eggs

b 42 ÷ 6 = 7 (6 × 7 = 42 is also acceptable); 7 packs of soda

2 **c** 72 ÷ 24 = 3 (24 × 3 = 72 is also acceptable); 3 cases of soda

d 27 ÷ 3 = 9 (3 × 9 = 27 is also acceptable); 9 cans of tennis balls

e 30 ÷ 10 = 3 (10 × 3 = 30 is also acceptable); 3 hours

ANSWER KEY

Use after Unit Two, Session 20 (cont.)

Page 32, Baking Cookies & Drying Clothes

1 5 batches ($4\frac{1}{2}$ batches is also acceptable.) Students' work will vary.

2 $1.00 Students' work will vary.

Page 33, Number Patterns

1 **a** 12, 15, …, 24, 27, 30

b 20, …, 30, …, 40, 45

c 60, 75, …, 105

2 Both. Students' explanations will vary. Example: *3 × 5 = 15. Since 105 is a multiple of 15, it must be divisible by 3 and by 5.*

3 **a**

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

c 24, 38, 72, and 96

d (challenge) 10 numbers. Students' explanations will vary. Example: *24 is the lowest common multiple of 6 and 8. So all the numbers that are multiples of 6 and 8 are multiples of 24. There are 10 multiples of 24 that are less than 250.*

Page 34, Snacks for the Field Trip

1 **a** Students' responses will vary. Example: *Which snack costs the least per item?*

b Mrs. Ramos is taking 32 students on a field trip. She wants to provide snacks for the students to eat. Granola bars come in boxes of 8 and cost $2.50 per box. Apples come in bags of 4 and cost $1.50 per bag. Packages of peanut butter crackers come in boxes of 16 for $4.69. At these prices, which of the snacks has the cheapest price per item: granola bars, apples, or peanut butter crackers?

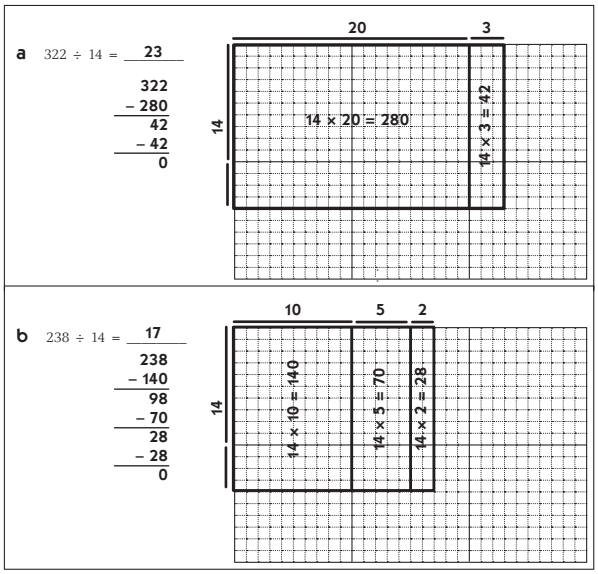
c 8 apples for $3.00; 8 granola bars for $2.50; 8 packs of peanut butter crackers for $2.30 - something; Peanut butter crackers are least expensive. Students' work will vary.

d Students' responses will vary.

Page 35, Division on a Base-Ten Grid

1 28, 42, 140, 70, 280, 420

2 Sketches may vary. Examples:



Page 36, Carla's Market & The Animal Shelter

1 Carla should put her apples into bags of 4. (139 ÷ 4 = 34 R 3; 139 ÷ 5 = 27 R4) Students' work will vary.

2 Jorge and Mrs. Johnson will be at the animal shelter twice on the very same day. Students' work will vary.

Use after Unit Two, Session 20 (cont.)

Page 37, Rounding & Division Practice

1 **a** Ones

b Tens

2

Number	**ex** 382	**a** 437	**b** 264	**c** 578	**d** 843	**e** 235
Nearest Ten	380	440	260	580	840	240
Nearest Hundred	400	400	300	600	800	200

3 6, 4, 6, 9

60, 40, 60, 90

4 **a** 180 ÷ 3 = 60; 60

b 240 ÷ 6 = 40; 40

c 450 ÷ 5 = 90; 90

Page 38, More Rounding & Estimation Practice

1 **a** 5 × 30 = 150, 150 ÷ 30 = 5, 150 ÷ 5 = 30

b 6 × 20 = 120, 120 ÷ 20 = 6, 120 ÷ 6 = 20

c 7 × 40 = 280, 280 ÷ 40 = 7, 280 ÷ 7 = 40

2 **a** Yes

b No

c No

d Yes

3 (challenge) Bakery A offers the better deal on muffins. Students' explanations will vary. Example: *Bakery A sells 6 muffins for $5.85, which means they each cost less than a dollar because 6 × $1.00 would be $6.00. Bakery B sells 8 muffins for $8.25, which means they each cost a little more than a dollar because 8 × $1.00 is $8.00.*

Page 39, Estimating Money Amounts

1 Choice 3, about $7 in his pocket

2 Choice 1, She is right. She cannot afford to buy two more milkshakes.

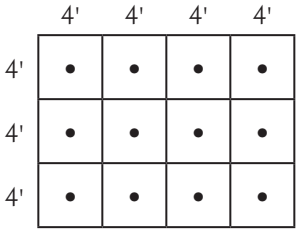
3 Choice 2, Chris is wrong. The bike is more expensive than 5 months of bus passes.

4 Choice 2, a bag of cherries for $2.00

Page 40, Kasey's Blueberry Bushes

1 **a** (challenge) Students' responses will vary. Example: *How many rows of plants should Kasey make, and how many plants should be in each row?*

b (challenge) Kasey should plant 3 rows of bushes with 4 in each row. (4 rows of bushes with 3 in each row is also acceptable.) Students' work will vary. Example: *Each plant needs a square of land that is 4´ on each side. If you arrange 12 squares like that into a 3 × 4 rectangle, the rectangle is 12' × 16'. The perimeter of the rectangle is (12 × 2) + (16 × 2). That's 24 + 32, which is 56'.*



c (challenge) Students' explanations will vary.

Use after Unit Three, Session 12

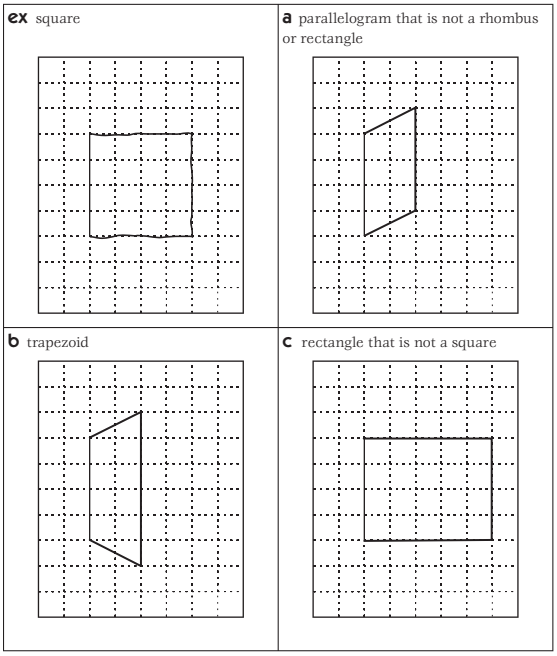
Page 41, Classifying Quadrilaterals

1

Figure	How many right angles?	How many pairs of congruent sides?	How many pairs of parallel sides?	Circle the word(s) that describe(s) the figure.
a 	no right angles	2 pairs of congruent sides	2 pairs of parallel sides	trapezoid rectangle **rhombus** square **parallelogram**
b 	no right angles	1 pair of congruent sides	1 pair of parallel sides	**trapezoid** rectangle rhombus square parallelogram
c 	no right angles	2 pairs of congruent sides	2 pairs of parallel sides	trapezoid rectangle rhombus square **parallelogram**

Page 42, Drawing Quadrilaterals

1 Sketches will vary.



ANSWER KEY

Use after Unit Three, Session 12 (cont.)

Page 42, Drawing Quadrilaterals (cont.)

2 (challenge) Students' responses and explanations will vary.

Page 43, Classifying Triangles

1

Triangle	Acute Angles	Right Angles	Obtuse Angles	Congruent Sides	What Kind? (circle as many as apply)
a 	**2 acute angles**	**0 right angles**	**1 obtuse angle**	**0 congruent sides**	acute equilateral right isosceles (obtuse) (scalene)
b 	**2 acute angles**	**1 right angle**	**0 obtuse angles**	**2 congruent sides**	acute equilateral (right) (isosceles) obtuse scalene

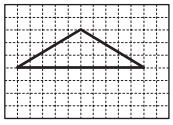
Page 44, Identifying & Drawing Triangles

1 Fourth choice

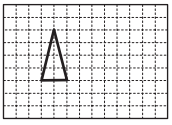
2 Fourth choice

3 Students' drawings will vary. Examples:

a an obtuse isosceles triangle



b an acute isosceles triangle



4 (challenge) Students' explanations will vary. Example: *The sum of the angles in a triangle is always 180°. If you draw a triangle with one right angle, there are only 90 degrees left for the other two angles. Since an obtuse angle is greater than 90°, neither of the other two angles can possibly be obtuse. So, you cannot draw a right obtuse triangle.*

Page 45, Finding the Areas of Rectangles, Triangles & Parallelograms

1 **a** 12 square units
b 10 square units

2 **a** 2 square units
b 6 square units

3 **a** 6 square units
b 16 square units

Page 46, Area Story Problems

1 28 square units. Students' work will vary.

2 360 square yards. Students' work will vary.

Page 47, Finding the Areas of Quadrilaterals

1 3 square units

2 8 square units

3 4 square units

4 8 square units

5 9 square units

Page 48, Length & Perimeter

1 **a** $3\frac{1}{4}$ inches ($3\frac{2}{8}$ inches is also acceptable.)
b $5\frac{1}{8}$ inches
c $3\frac{7}{8}$ inches

2 There are three other rectangles with integral sides that have a perimeter of 16:
- 4 × 4 (Area = 16 square units)
- 2 × 6 (Area = 12 square units)
- 1 × 7 (Area = 7 square units)

3 (challenge) A circle that is 16 inches around has a greater area than a square with a perimeter of 16 inches. Students' explanations will vary.

Page 49, Naming Transformations

1 **a** Choice 3, flip
b Choice 1, slide
c Choice 3, flip
d Choice 2, turn

Page 50, Which Two Transformations?

1 **a** Choice 3, turn then slide
b Choice 1, flip then turn
c Choice 2, flip then slide

2 (challenge) Students' responses will vary.

Use after Unit Three, Session 22

Page 51, Finding the Areas of Parallelograms

1 **a** Base: 3, Height: 5, Area: 3 × 5 = 15 square units
b Base: 5, Height: 3, Area: 3 × 5 = 15 square units
c Base: 5, Height: 4, Area: 5 × 4 = 20 square units

Page 52, The Bulletin Board Problem

1 The area of each stripe was 6 square feet.

2 There were 6 square feet of paper left over as scraps.

Page 53, Finding the Area of a Triangle

1 **a** Base: 7, Height: 4, Area: (7 × 4) ÷ 2 = 14 square units

Use after Unit Three, Session 22 (cont.)

Page 53, Finding the Area of a Triangle (cont.)

1 b Base: 6, Height: 3, Area: (6 × 3) ÷ 2 = 9 square units

c Base: 8, Height: 5, Area: (8 × 5) ÷ 2 = 20 square units

Page 54, More Area Problems

1 Figures B and C

2 **a** 6 square yards of bushes

b 54 square feet of bushes

Page 55, Rita's Robot

1 One solution is shown on the chart below. There may be others.

Destination Coordinates	Spaces Moved	Running Total of Spaces Moved	Coins Collected	Running Total of Coins Collected
B, 4	**5**	**5**	**12**	**12**
D, 4	**2**	**7**	**8**	**20**
D, 10	**6**	**13**	**16**	**36**
E, 8	**3**	**16**	**15**	**51**
F, 5	**4**	**20**	**14**	**65**
F, 2	**3**	**23**	**14**	**79**
A, 0	**7**	**30**	**0**	**79**

Page 56, Faces, Edges & Vertices

1 **a** Vertices,

b Edges,

c Faces

2 **a** 6, 12, 8, rectangular prism

b 5, 8, 5, square pyramid or rectangular pyramid

c 5, 9, 6, triangular prism

d 5, 9, 6, triangular prism

e 4, 6, 4, triangular pyramid

f 8, 18, 12, hexagonal prism

Page 57, Surface Area & Volume

1 **a** Surface Area = 52 square cm, Volume = 24 cubic cm

b Surface Area = 48 square cm, Volume = 20 cubic cm

c Surface Area = 64 square cm, Volume = 32 cubic cm

2 (challenge) 45 cubic cm

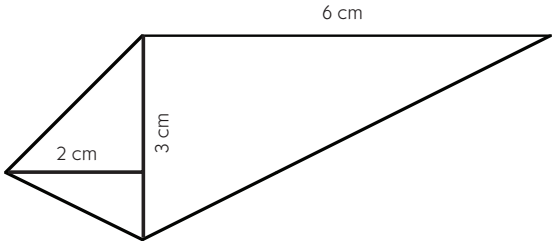
Page 58, Measuring to Find the Area

1 **a** Area = 4 cm × 7 cm; Area = 28 sq cm

b Area = (5 cm × 8 cm) ÷ 2; Area = 20 sq cm

c Area = 6 cm × 3 cm: Area = 18 sq cm

2 (challenge) Area = 12 sq cm Students' work will vary. Example:



3 × 6 = 18 18 ÷ 2 = 9
2 × 3 = 6 6 ÷ 2 = 3
9 + 3 = 12 sq cm

Page 59, Volume & Surface Area of Rectangular & Triangular Prisms

1 Volume = 32,000 cubic cm; Surface Area = 7,200 sq cm

2 Volume = 12,000 cubic cm; Surface Area = 3,800 sq cm

3 Volume = 18,000 cubic cm; Surface Area = 4,800 sq cm

4 (challenge) Volume = 22,500 cubic cm; Surface Area = 5,700 sq cm

Page 60, Surface Area & Volume Story Problems

1 Present A takes more wrapping paper to cover. Students' work will vary. (The surface area of Present A is 2(8 × 8) + 4(8 × 10) = 448 sq in; the surface area of Present B is (9 × 9) + (15 × 9) + (9 × 12) + 2 ((9 × 12) ÷ 2) = 432 sq in.)

2 Tank A holds more water. Students' work will vary. (The volume of Tank A is 24 × 12 × 18 = 5,184 cubic inches; the volume of Tank B is (36 × 24 × 10) ÷ 2 = 4,320 cubic inches.)

Use after Unit Four, Session 10

Page 61, Multiplication & Division Tables

1 **a** 60, 40, 90, 70, 50, 80, 30

b 30, 20, 45, 35, 25, 40, 15

2 **a** 9, 6, 5, 8, 7, 4, 3

b 18, 12, 10, 16, 14, 8, 6

3 Students' responses will vary. Example: *5 times a number is always half of 10 times the same number, like 5 × 6 is 30 and 10 × 6 is 60. A number divided by 5 is twice what the same number is divided by 10, like 60 ÷ 5 = 12 and 60 ÷ 10 = 6.*

ANSWER KEY

Use after Unit Four, Session 10 (cont.)

Page 62, Using Basic Fact Strategies to Multiply Larger Numbers

1 **a** 24, 48, 72, 240, 120, 480, 720, 360

b 32, 64, 96, 320, 160, 640, 960, 480

c 17, 34, 51, 170, 85, 340, 510, 255

Page 63, Multiplication Problems & Mazes

1 **a** 36, 54, 180, 90

b 46, 69, 230, 115

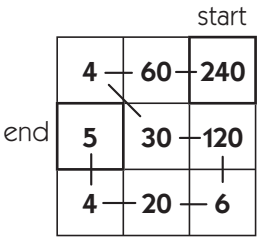
c 68, 102, 340, 170

2 **a** Students' responses will vary.

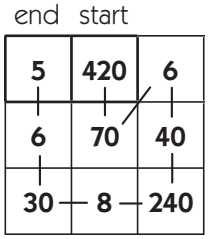
b Students' responses will vary.

c Students' responses will vary.

3 **a** 240 ÷ 60 = 4; 4 × 30 = 120; 120 ÷ 6 = 20; 20 ÷ 4 = 5



b 420 ÷ 70 = 6; 6 × 40 = 240; 240 ÷ 8 = 30; 30 ÷ 6 = 5



Page 64, More Division Story Problems

1 8 hours; Students' work will vary.

2 9 days, although she'll only have to read 17 pages the last day. Students' work will vary.

3 9 bags, with 7 candies left over. Students' work will vary.

4 (challenge) Students' responses will vary. Example: *The robins flew about 40 miles a day. This is a reasonable estimate because 80 × 40 is 3,200. The number of days they actually flew was 78, so 78 × 40 should be close to 3,000.*

Page 65, Which Box Holds the Most?

1 **a** You need to know the volume of each box.

b Ebony should use Box B if she wants to send the most candy.
(Box A Volume: 52 × 22 × 8 = 9,152 cubic cm; Box B Volume: 22 × 22 × 22 = 10,648 cubic cm; Box C Volume: 22 × 17 × 15 = 5,610 cubic cm.)
Students' work will vary.

2 2,904 square cm; Students' work will vary.

Page 66, Using Multiplication Menus to Solve Division Problems

1 **a** 16

b 32

c 160

d 80

e 320

f 240

2 **a** 18

b 29

Page 67, Divisibility Rules

1 Students' responses in the last column of the chart will vary.

a 987	9 + 8 + 7 = 24	Yes	No	No	7
b 540	5 + 4 + 0 = 9	Yes	Yes	Yes	2, 4, 5, 10
c 762	7 + 6 + 2 = 15	Yes	Yes	No	2
d 747	7 + 4 + 7 = 18	Yes	No	Yes	1
e 570	5 + 7 + 0 = 12	Yes	Yes	No	2, 5, 10
f 645	6 + 4 + 5 = 15	Yes	No	No	5
g 792	7 + 9 + 2 = 18	Yes	Yes	Yes	2, 4, 8

Page 68, Division with Menus & Sketches

1 **a** 19

b 38

c 190

d 95

e 380

f 285

2 **a** 32; Students' work will vary.

b 24; Students' work will vary.

3 **a** Yes, 456 is divisible by 3.

b Yes, 456 is divisible by 6.

c No

Use after Unit Four, Session 10 (cont.)

Page 69, Francine's Piece of Wood

1 The middle piece of wood. Students' work will vary. (Volume of triangular prism 1: (60 × 40 × 10) ÷ 2 = 12,000 cubic inches; Volume of triangular prism 2: (40 × 30 × 30) ÷ 2 = 18,000 cubic inches; Volume of triangular prism 3: (60 × 40 × 30) ÷ 2 = 36,000 cubic inches.)

2 (challenge) 4,800 square inches; Students' work will vary.

Page 70, Money & Miles

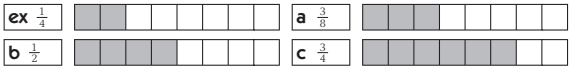
1 10 CD's; Students' work will vary.

2 6 weeks (5 weeks and 2 days is also acceptable.)

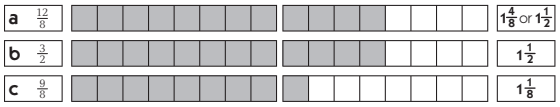
Use after Unit Four, Session 23

Page 71, Fractions & Mixed Numbers

1



2



3 A fraction is greater than 1 if the numerator is greater than the denominator.

4 (challenge) The numerator must be greater than 16.

Page 72, Triangles & Tents

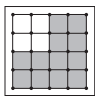
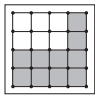
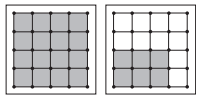
1 **a** 18 square feet; Students' work will vary.

b 360 square meters; Students' work will vary.

c 25 square inches; Students' work will vary.

2 They will need 60 square feet of fabric; Students' work will vary.

Page 73, Equivalent Fractions on a Geoboard

1 	$\frac{1}{2}, \frac{2}{4}, \frac{4}{8}, \frac{8}{16}$	$\frac{1}{2} < \frac{5}{8}$
2 	$\frac{3}{4}, \frac{6}{8}, \frac{12}{16}$	$\frac{3}{4} > \frac{1}{2}$
3 	$\frac{5}{8}, \frac{10}{16}$	$\frac{5}{8} < \frac{3}{4}$
4 	$1\frac{3}{8}, 1\frac{6}{16}$ $\frac{11}{8}, \frac{22}{16}$	$1\frac{3}{8} < 1\frac{1}{2}$

Page 74, Metric Length, Area & Volume

1 **a** 1,000 meters

b 3,000 meters

2 60 laps; Students' work will vary.

3 10 times; Students' work will vary.

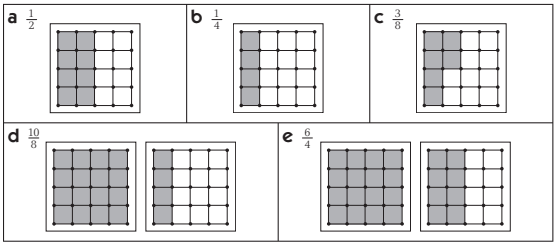
4 **a** (challenge) 100 centimeters

b (challenge) 10,000 square centimeters

c (challenge) 1,000,000 cubic centimeters

Page 75, Comparing Fractions

1 Shading may vary. Examples shown below.



2 **a** $^6/_4 = 1^1/_2$

b $^3/_8 < {}^3/_4$

c $^{10}/_8 < 1^1/_2$

d $^6/_8 < {}^6/_4$

e $^3/_8 > {}^1/_4$

3 **a** (challenge) Any number greater than 18

b (challenge) 24

c (challenge) Any number greater than 4

ANSWER KEY

Use after Unit Four, Session 23 (cont.)

Page 76, Adding Fractions

1

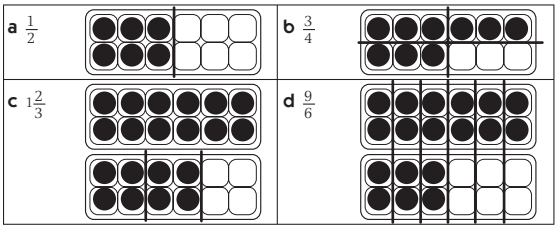
a $\frac{3}{4}$	$\frac{3}{4}$		$1\frac{1}{2}$ or $\frac{3}{2}$ or $\frac{6}{4}$
b $\frac{3}{8}$	$\frac{1}{2}$		$\frac{7}{8}$
c $\frac{5}{8}$	$\frac{3}{4}$		$1\frac{3}{8}$ or $\frac{11}{8}$
d $\frac{1}{2}$	$\frac{7}{8}$		$1\frac{3}{8}$ or $\frac{11}{8}$

2 The sum must be greater than 1.

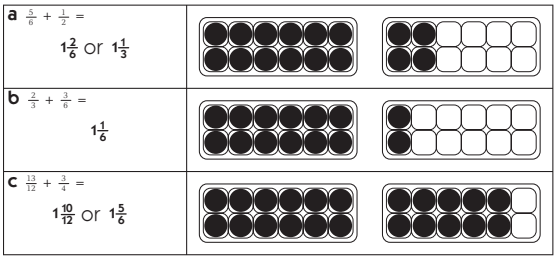
3 The sum must be less than 1.

Page 77, Egg Carton Fractions

1 Shading may vary. Examples shown below.



2 Shading may vary. Examples shown below.



3 **a** $^{6}/_{10} + {}^{11}/_{10} > 1$

b $^{11}/_{10} + {}^{7}/_{6} > 2$

c $^{1}/_{12} + {}^{3}/_{14} < 1$

Page 78, Fraction Story Problems

1 $2^{1}/_{4}$ miles; Students' work will vary.

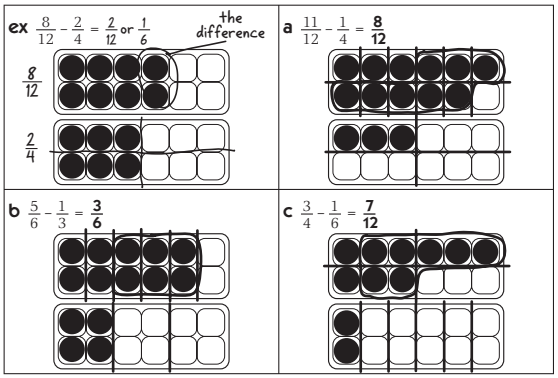
2 $4^{5}/_{8}$ pounds of fruit; Students' work will vary.

Page 79, Division & Fraction Practice

1 **a** 17 R 5; Students' work will vary.

b 22 R 8; Students' work will vary.

2



Page 80, More Fraction Story Problems

1 $2^{1}/_{12}$ pounds of packaging; Students' work will vary.

2 $^{7}/_{8}$ of a mile; Students' work will vary.

Use after Unit Five, Session 11

Page 81, Multiplication & Division Review

1 540, 360, 300, 420, 1200, 2400, 1800
360, 240, 200, 280, 800, 1600, 1200

2 30, 2, 7, 50, 60, 9, 80

3 1,566; 14,432; 8,448;
8,673; 19,520; 14,898; 71,982

Page 82, Thinking About Divisibility

1 A number is divisible by 3 if the sum of its digits is divisible by 3.	**a** (117) 409 (423) 6,151 (3,213)
2a Finish the rule: A number is divisible by 5 if... it has a 0 or 5 in the ones place.	**b** (205) 452 (600) (2,365) 7,004
3 A number is divisible by 6 if the sum of its digits is divisible by 3 and it is even.	**a** (132) (270) (588) (2,706) 3,512
4 A number is divisible by 9 if the sum of its digits is divisible by 9.	**a** (225) (324) 965 (1,809) 2,584
5a Finish the rule: A number is divisible by 10 if... it has a 0 in the ones place.	**b** 208 (700) (810) 2,304 (8,430)

Page 83, Products & Secret Paths

1 **a** 14, 51; Students' work will vary.

b 24, 42; Students' work will vary.

c 33, 67; Students' work will vary.

d 42, 65; Students' work will vary.

ANSWER KEY

Use after Unit Five, Session 11 (cont.)

Page 83, Products & Secret Paths (cont.)

2 **a** 160 ÷ 80 = 2; 2 × 50 = 100;
100 ÷ 10 = 10; 10 × 4 = 40

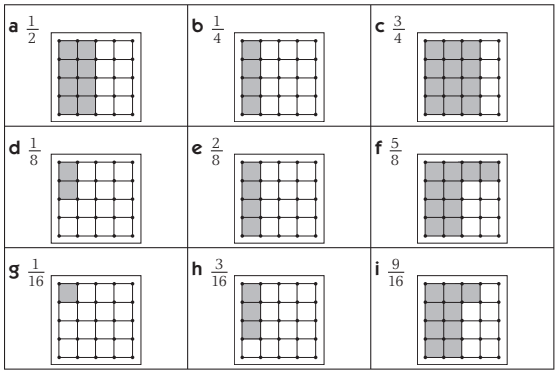
	end	start
	4 — 40	160
10	80 — 2	
10 —	100 —	50

b 540 ÷ 9 = 60; 60 × 3 = 180;
180 ÷ 90 = 2; 2 × 7 = 14

	end	start
	14	540 — 9
7	60 —	3
2 —	90 —	180

Page 84, Coloring & Comparing Fractions

1 Shading may vary. Examples shown below.



2 **a** $^1/_4 = {}^2/_8$
b $^3/_4 > {}^5/_8$
c $^3/_{16} < {}^1/_4$
d $^1/_2 < {}^9/_{16}$
e $^5/_8 > {}^9/_{16}$

3 **a** $^1/_2 < {}^9/_{16}$
b $^1/_4 > {}^3/_{24}$
c $^9/_{18} = {}^1/_2$

Page 85, The Garage Roof & The Parking Lot

1 600 square feet; Students' work will vary.

2 **a** 24 square meters
b 15 square inches
c 52 square centimeters

3 520 square yards; Students' work will vary.

Page 86, Time Problems

1 5 days (4 days and 30 more minutes on the fifth day is also acceptable.) Students' work will vary.

2 $6^1/_2$ hours each week; Students' work will vary.

3 2 hours and 45 minutes; Students' work will vary.

Page 87, Amanda's Height Graph

1 Amanda has been getting taller. Students' explanations will vary. Example: *The line on the graph keeps going up; it never goes down.*

2 Between 8 and 9 years old.

3 No, Amanda grew different amounts some years. Students' explanations will vary. Example: *The number of inches changes from one year to the next. Amanda grew 4 inches the first year on the graph. She grew 3 inches the next year and 2 inches the year after that.*

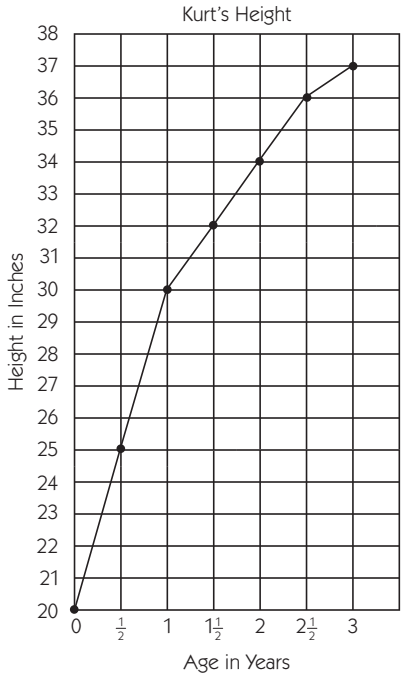
4 Students' responses will vary. Example: *I think Amanda will be about 5 feet tall by the time she is 13. When she was 10, she was 54 inches tall. When she was 11, she was 56 inches, so she grew 2 inches that year. Even if she only grows 2 inches a year for the next 2 years, that will be 60 inches, which is 5 feet.*

5 Students' responses will vary. Example: *I think the growth line would keep going up at least 2 inches a year until she was 15 or 16. After that, it would go up very slowly or maybe not at all, so you'd see a steep line between ages 5 and 15 or 16, and then it would get almost flat because people don't grow any taller after they get to be about 16.*

Use after Unit Five, Session 11 (cont.)

Page 88, Kurt's Height Graph

1 Student responses may vary. Example:



2 Students' responses will vary. Example: *Kurt grew faster in his first year than in the next two years. He grew 5 inches every 6 months for the first year. Then he grew 2 inches every 6 months until he turned $2^1/_2$. Between $2^1/_2$ and 3, he only grew 1 inch, so it seems like he's slowing down.*

3 Students' responses will vary. Example: *Kurt grew really fast in the first year, and then he slowed down in the next two years.*

Page 89, Prime Factorization Review

1

a 24	24 2 12 2 6 2 3	1, 24 2, 12 3, 8 4, 6
b 48	48 2 24 2 12 2 6 2 3	1, 48 2, 24 3, 16 4, 12 6, 8
c 78	78 2 39 3 13	1, 78 2, 39 3, 26 6, 13

2 1, 2, 3, 6

3 6

Page 90, Which Bag of Candy?

1 Lemon Sours; students' work will vary.

2 16 candies

Use after Unit Five, Session 19

Page 91, Square Inches, Square Feet & Square Yards

1 **a** 29 square yards; students' work will vary.

b (challenge) 261 square feet; students' work will vary.

2 **a** 900 square inches; students' work will vary.

b (challenge) $6^1/_4$ square feet; students' work will vary.

Page 92, The Frozen Yogurt Problem

1 **a** Students' responses will vary. Example: *How many tubs of frozen yogurt do the kids need for parents' night at their school?*

b & c The fourth and fifth graders are hosting a special night for their parents at school, and they want to serve frozen yogurt. Altogether there will be 95 students, 5 teachers, and 1 principal. ~~Six students are not coming.~~ Fifty-two students will bring 2 parents, and 43 students will bring 1 parent with them. Each tub of frozen yogurt serves 14 people. How many tubs of frozen yogurt will they need to have enough for everyone?

d 18 tubs of frozen yogurt; students' work will vary.

e Students' answers will vary.

Page 93, The Homework Survey

1 14 middle-school students

2 3 high-school students

3 12 high-school students

4 Overall, high-school students spend more time on homework each night. Students' explanations will vary. Example: *The mode and the median for the middle-school students is 1 hour a night. The mode and the median for the high-school students is $1^1/_2$ hours a night. If you count up all the hours, the whole group of middle-school students spends 26.5 hours each night on homework, and the high-school students spend 46 hours each night. The average amount of time is a little less than 1 hour for the middle-school students and about $1^1/_2$ hours a night for high-school students.*

Use after Unit Five, Session 19 (cont.)

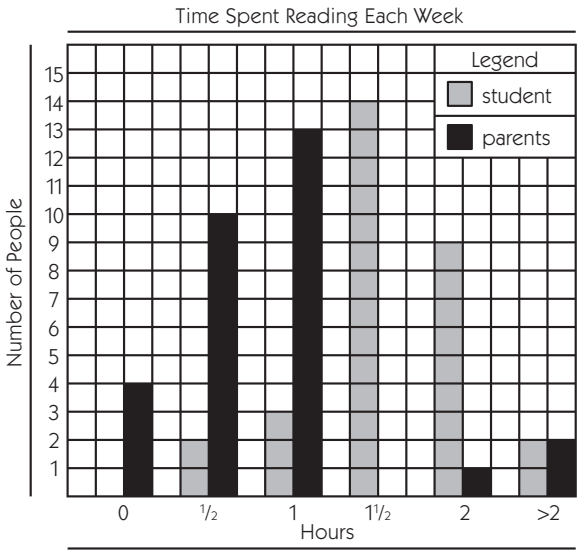
Page 93, The Homework Survey (cont.)

5 (challenge) Students' responses will vary. The middle-school data is clustered tightly around half an hour and 1 hour, while there is more variation in the high-school data. It would be reasonable to say that it's easier to use the data to make estimates about *any* middle-school student than it is to make estimates about *any* high-school student.

Page 94, The Fifth-Grade Reading Survey

1 Students' responses will vary. Example: *Most parents read 1 hour or less each week. Most students read $1\frac{1}{2}$ hours or more each week.*

2 Students' graphs may vary somewhat. Example:



3 Students' responses will vary. Example: *You can see that students read way more than parents each week.*

Page 95, Reading & Interpreting a Circle Graph

1 Soda

2 Milk

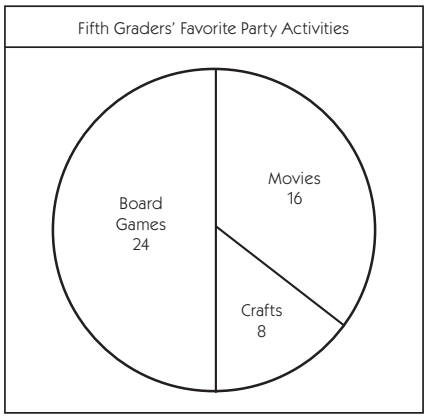
3 Less than half of the students prefer soda. Students' explanations will vary. Example: *One way to tell that less than half of the students prefer soda is because the soda section takes up less than half the circle. Another way to tell is because the soda section says 22, and 22 is less than half of 48.*

4 Students' responses will vary. Example: *They should serve 24 bottles of water, 20 bottles of juice, and 8 bottles of milk. That adds up to 52 bottles, but leaves a few extra in case someone changes their mind. Some kids will probably pick juice because it's sweet, but some of them might pick water. Maybe a couple of them will switch to milk, but probably not very many.*

Page 96, Constructing & Interpreting a Circle Graph

1 Students' responses will vary. Example: *The most popular choice is board games.*

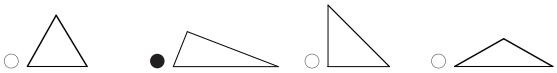
2 Students' work will vary. Example:



3 Students' responses will vary. Example: *Half the kids voted for board games. A third of them voted for a movie, and only a sixth voted for crafts.*

Page 97, Classifying Triangles & Quadrilaterals

1 **a**



b Students' responses will vary. Example: *Because every triangle in the group has 3 sides that are different lengths.*

c Scalene triangle

2 **a**

b Students' responses will vary. Example: *Because every quadrilateral in the group has 4 congruent sides.*

c Rhombus

ANSWER KEY

Use after Unit Five, Session 19 (cont.)

Page 98, The Robot's Path

1 A quadrilateral or rectangle

2 The dimesnions of the rectangle could be 1 and 6, 2 an 5, or 3 and 4. (The rectangle with dimensions 3 and 4 is the only one that allows the robot to collect 170 gold pieces.)

3 A5, D5, and D1

Page 99, Division Estimate & Check

1 396 ÷ 17	**17 × 10 = 170, 17 × 20 = 340, 17 × 5 = 85, 17 × 2 = 34**	The answer will be less than **25** and greater than **20**.	**Students' responses will vary.**	**23 R5**
2 275 ÷ 13	**13 × 10 = 130, 13 × 20 = 260, 13 × 5 = 65, 13 × 2 = 26**	The answer will be less than **22** and greater than **20**.	**Students' responses will vary.**	**21 R2**

Page 100, The Book Problem

1 a Students' responses will vary. Example: *How much money can Mrs. Suarez spend on each book if she buys one for each student in her class?*

b $6.25; Students' work will vary.

c Students' responses will vary. Example: *Yes. I know it has to be a little more than $5.00 each because 24 × 5 = 120, and she has $150. If you add another 24 to 120, you can see that the answer should be just a little over $6.00 per book.*

Use after Unit Six, Session 7

Page 101, Simplifying Fractions

1 a 1, 2, 4

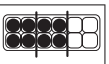
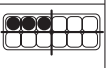
b 1, 2, 4, 8

c 1,3

d 1, 2, 3, 6

e 1, 2, 3, 4, 6, 12

2

a $\frac{4}{6}$	**1, 2, 4**	**1, 2, 3, 6**	**2**	$\frac{4 \div 2}{6 \div 2} = \frac{2}{3}$	 $\frac{4}{6} = \frac{2}{3}$
b $\frac{3}{12}$	**1, 3**	**1, 2, 3, 4, 6, 12**	**3**	$\frac{3 \div 3}{12 \div 3} = \frac{1}{4}$	 $\frac{3}{12} = \frac{1}{4}$

Page 102, Using the Greatest Common Factor to Simplify Fractions

1

a $\frac{14}{16}$	**1, 2, 7, 14**	**1, 2, 4, 8, 16**	**2**	$\frac{14 \div 2}{16 \div 2} = \frac{7}{8}$	$\frac{7}{8}$
b $\frac{16}{21}$	**1, 2, 4, 8, 16**	**1, 3, 7, 21**	**1**	$\frac{16 \div 1}{21 \div 1} = \frac{16}{21}$	$\frac{16}{21}$
c $\frac{27}{36}$	**1, 3, 9, 27**	**1, 2, 3, 4, 6, 9, 12, 18, 36**	**9**	$\frac{27 \div 9}{36 \div 9} = \frac{3}{4}$	$\frac{3}{4}$
d $\frac{15}{36}$	**1, 3, 5, 15**	**1, 2, 3, 4, 6, 9, 12, 18, 36**	**3**	$\frac{15 \div 3}{36 \div 3} = \frac{5}{12}$	$\frac{5}{12}$

2 a $\frac{2}{7}$, $\frac{12}{42}$ ($\frac{18}{63}$ and other equivalent fractions also acceptable)

b $\frac{1}{5}$, $\frac{6}{30}$ ($\frac{9}{45}$ and other equivalent fractions also acceptable)

c $\frac{14}{24}$, $\frac{21}{36}$ ($\frac{28}{48}$ and other equivalent fractions also acceptable)

Page 103, Rewriting & Comparing Fractions

1 $\frac{11}{18}$ is greater than $\frac{7}{12}$

2 $\frac{11}{18}$ is exactly $\frac{1}{36}$ greater than $\frac{7}{12}$

3 $\frac{43}{36}$, $1\frac{7}{36}$

Page 104, Using the Least Common Multiple to Compare Fractions

1 a The least common multiple of 8 and 12 is 24.
Multiples of 12: 12, 24
Multiplies of 8: 8, 16, 24

b The least common multiple of 6 and 15 is 30.
Multiples of 15: 15, 30
Multiples of 6: 6, 12, 18, 24, 30

c The least common multiple of 6 and 14 is 42.
Multiples of 14: 14, 28, 42
Multiples of 6: 6, 12, 18, 24, 30, 36, 42

ANSWER KEY

Use after Unit Six, Session 7 (cont.)

Page 104, Using the Least Common Multiple to Compare Fractions (cont.)

2

a $\frac{5}{8}$ and $\frac{9}{12}$	$\frac{5}{8} \times \frac{3}{3} = \frac{15}{24}$	$\frac{9}{12} \times \frac{2}{2} = \frac{18}{24}$	$\frac{15}{24} < \frac{18}{24}$ so $\frac{5}{8} < \frac{9}{12}$
b $\frac{4}{6}$ and $\frac{12}{15}$	$\frac{4}{6} \times \frac{5}{5} = \frac{20}{30}$	$\frac{12}{15} \times \frac{2}{2} = \frac{24}{30}$	$\frac{20}{30} < \frac{24}{30}$ so $\frac{4}{6} < \frac{12}{15}$
c $\frac{5}{6}$ and $\frac{11}{14}$	$\frac{5}{6} \times \frac{7}{7} = \frac{35}{42}$	$\frac{11}{14} \times \frac{3}{3} = \frac{33}{42}$	$\frac{35}{42} > \frac{33}{42}$ so $\frac{5}{6} > \frac{11}{14}$

Page 105, Finding Equivalent Fractions

1 **a** $^3/_5$ and $^{18}/_{30}$ ($^{27}/_{45}$ and other equivalent fractions also acceptable)

b $^2/_3$ and $^8/_{12}$ ($^{12}/_{18}$ and other equivalent fractions also acceptable)

c $^5/_6$ and $^{30}/_{36}$ ($^{45}/_{54}$ and other equivalent fractions also acceptable)

2 **a** $^1/_3$, $^8/_{24}$, $^{12}/_{36}$

b $^6/_8$, $^9/_{12}$, $^{15}/_{20}$, $^{30}/_{40}$

c $^6/_{30}$, $^1/_5$, $^9/_{45}$

3 Students' responses will vary. Example: *You can divide the numerator and denominator by the same number. You can also multiply the numerator and denominator by the same number.*

Page 106, Rewriting & Comparing More Fractions

1 **a** The least common multiple of 6 and 7 is 42.
Multiples of 6: 6, 12, 18, 24, 30, 36, 42
Multiples of 7: 7, 14, 21, 28, 35, 42

b The least common multiple of 9 and 12 is 36.
Multiples of 9: 9, 18, 27, 36
Multiples of 12: 12, 24, 36

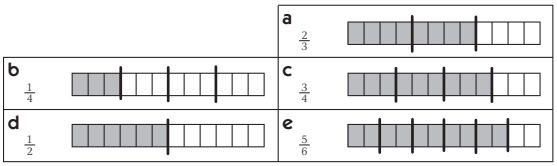
c The least common multiple of 9 and 15 is 45.
Multiples of 9: 9, 18, 27, 36, 45
Multiples of 15: 15, 30, 45

2

a $\frac{4}{6}$ and $\frac{5}{7}$	$\frac{4}{6} \times \frac{7}{7} = \frac{28}{42}$	$\frac{5}{7} \times \frac{6}{6} = \frac{30}{42}$	$\frac{28}{42} < \frac{30}{42}$ so $\frac{4}{6} < \frac{5}{7}$
b $\frac{7}{9}$ and $\frac{9}{12}$	$\frac{7}{9} \times \frac{4}{4} = \frac{28}{36}$	$\frac{9}{12} \times \frac{3}{3} = \frac{27}{36}$	$\frac{28}{36} > \frac{27}{36}$ so $\frac{7}{9} > \frac{9}{12}$
c $\frac{8}{9}$ and $\frac{13}{15}$	$\frac{8}{9} \times \frac{5}{5} = \frac{40}{45}$	$\frac{13}{15} \times \frac{3}{3} = \frac{39}{45}$	$\frac{40}{45} > \frac{39}{45}$ so $\frac{8}{9} > \frac{13}{15}$

Page 107, Adding Fractions

1



2

a $\frac{2}{3} + \frac{3}{4}$	$\frac{2}{3} + \frac{3}{4} = \frac{8}{12} + \frac{9}{12}$	$\frac{8}{12} + \frac{9}{12} = \frac{17}{12}$ or $1\frac{5}{12}$
b $\frac{1}{3} + \frac{5}{6}$	$\frac{1}{3} + \frac{5}{6} = \frac{2}{6} + \frac{5}{6}$	$\frac{2}{6} + \frac{5}{6} = \frac{7}{6}$ or $1\frac{1}{6}$
c $\frac{7}{12} + \frac{3}{4}$	$\frac{7}{12} + \frac{3}{4} = \frac{7}{12} + \frac{9}{12}$	$\frac{7}{12} + \frac{9}{12} = \frac{16}{12}$ or $1\frac{4}{12}$ or $1\frac{1}{3}$

Page 108, Adding Fractions & Mixed Numbers

1 Solutions may vary.

	a $\frac{4}{6} \div \frac{2}{2} = \frac{2}{3}$	**b** $\frac{12}{15} \div \frac{3}{3} = \frac{4}{5}$
c $\frac{12}{18} \div \frac{6}{6} = \frac{2}{3}$	**d** $\frac{8}{12} \div \frac{4}{4} = \frac{2}{3}$	**e** $\frac{4}{12} \div \frac{4}{4} = \frac{1}{3}$

2 **a** $^3/_4 + {}^2/_8 = {}^3/_4 + {}^1/_4$; $^3/_4 + {}^1/_4 = {}^4/_4$ and $^4/_4 = 1$

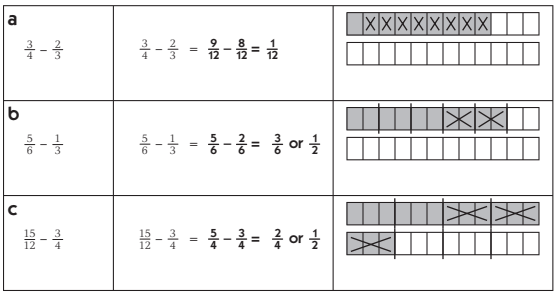
b $^6/_8 + {}^9/_{12} = {}^3/_4 + {}^3/_4$; $^3/_4 + {}^3/_4 = {}^6/_4$ and $^6/_4 = 1^2/_4$ ($1^1/_2$ is also acceptable)

c $3^6/_{12} + 4^1/_2 = 3^6/_{12} + 4^6/_{12}$; $3^6/_{12} + 4^6/_{12} = 7^{12}/_{12}$ and $7^{12}/_{12} = 8$

d $1^5/_8 + 2^3/_4 = 1^5/_8 + 2^6/_8$; $1^5/_8 + 2^6/_8 = 3^{11}/_8$ and $3^{11}/_8 = 4^3/_8$

Page 109, Fraction Subtraction

1 Solutions may vary.



2 **a** $^4/_5$

b $592^{17}/_{18}$

ANSWER KEY

Use after Unit Six, Session 7 (cont.)

Page 110, More Fraction Subtraction

1 **a** $1\frac{4}{8}$ ($1\frac{1}{2}$ is also acceptable)
b $2\frac{3}{6}$ ($2\frac{1}{2}$ is also acceptable)
c $2\frac{1}{8}$
d $4\frac{2}{3}$

2 **a** $\frac{17}{12}$
b $\frac{17}{6}$
c $\frac{13}{4}$
d $\frac{14}{3}$

3 Solutions may vary.
a $\frac{7}{4} - \frac{2}{4} = \frac{5}{4}$ ($1\frac{1}{4}$ is also acceptable)
b $\frac{30}{24} - \frac{9}{24} = \frac{21}{24}$; $\frac{21}{24} = \frac{7}{8}$
c $2\frac{9}{24} - 1\frac{8}{24} = 1\frac{1}{24}$
d $3\frac{10}{16} - 1\frac{12}{16} = \frac{30}{16}$; $\frac{30}{16} = 1\frac{14}{16}$ or $1\frac{7}{8}$

Use after Unit Six, Session 19

Page 111, Modeling Decimals

1 **a** 1.004
b 2.316
c 1.07

Page 112, Decimal Sums & Differences

1 1.236 + 1.07 = 2.306
2 1.236 + 1.7 = 2.936
3 1.236 + 1.007 = 2.243
4 2.131 – 1.004 = 1.127
5 2.131– 1.04 = 1.091
6 2.131 – 1.4 = 0.731

Page 113, Using Models to Add & Subtract Decimals

1 Less than 3. Students' explanations will vary. Example: *Because 1 + 1 = 2, and .009 + .762 is less than 1 more.*

2 Greater than 3. Students' explanations will vary. Example: *Because 1 + 1 = 2, and .5 + .5 is already 1 more, but there are also some extra hundredths and thousandths.*

3 Less than 1. Students' explanations will vary. Example: *Because you have to subtract 2 tenths, and you have less than 1 tenth. You'll have to split the unit mat into tenths, and when you take 2 tenths away, it will leave less than 1.*

Page 114, Adding & Subtracting Decimals

1 7.357; 2.479; 12.222; 6.223; 3.919; 4.631

2 1.893; 1.331; 1.86; 3.131; 2.579; 4.006

3 1.26 + 0.773 and 1.502 + 0.6

Page 115, Decimal Addition & Subtraction

1 Students' responses will vary.

2 16.419; 18.248; 21.08; 11.482
8.512; 12.405

3 2.98; 2.212; 4.545; 3.173
7.165; 0.948

Page 116, Decimal Story Problems

1 **a** Fifty-two hundredths of a second or .52 seconds
b Bolt ran the race more than a half-second faster than the second-place winner. Students' explanations will vary. Example: *Half is fifty hundredths; Bolt won by 2 hundredths more than half a second.*

2 **a** More than half as long.
b Students' explanations will vary. Example: *Yes, because half of 19.30 is 9.65, so 9.69 is 4 hundredths of a second more than half as long.*

Page 117, Finding the Common Denominator

1 **a** $\frac{1}{2}$
b $\frac{3}{5}$
c $\frac{5}{6}$
d $\frac{2}{3}$
e $\frac{2}{3}$

2 Students' work will vary. Common denominators are listed below.
a $\frac{3}{12}$ and $\frac{9}{12}$ or $\frac{1}{4}$ and $\frac{3}{4}$
b $\frac{21}{24}$ and $\frac{20}{24}$
c $\frac{14}{30}$ and $\frac{20}{30}$

Page 118, Fraction Estimate & Check

Students' work will vary. Sum or difference listed below

1 $1\frac{4}{12}$ or $1\frac{1}{3}$
2 $2\frac{2}{8}$ or $2\frac{1}{4}$
3 $1\frac{1}{24}$
4 $\frac{1}{2}$
5 $\frac{1}{12}$

ANSWER KEY

Use after Unit Six, Session 19 (cont.)

Page 119, Lauren's Puppy

1 **a** $^{3}/_{16}$ of a pound; students' work will vary.

b $5^{1}/_{2}$ pounds; students' work will vary.

2 Andre's puppy weighs 4 pounds

Page 120, Rachel & Dimitri's Trip to the Store

1 Dimitri spent $.07, or 7 cents, more than Rachel. Students' work will vary.

2 Yes. He had $.62 left from his $5 bill and Rachel only needs $0.24.

Use after Unit Seven, Session 8

Page 121, Order of Operations Review

1

a **451** = 463 – 180 ÷ (3 × (2 + 3)) 463 – 180 ÷ (3 × (2 + 3)) = 463 – 180 ÷ (3 × 5) 463 – 180 ÷ (3 × 5) = 463 – 180 ÷ 15 463 – 180 ÷ 15 = 463 – 12 463 – 12 = 451	**b** (249 – 192) ÷ 3 × 14 = **266** (249 – 192) ÷ 3 × 14 = 57 ÷ 3 × 14 57 ÷ 3 × 14 = 19 × 14 19 × 14 = 266
c **57** = 36 + 14 × (182 – 164) ÷ 12 36 + 14 × (182 – 164) ÷ 12 = 36 + 14 × 18 ÷ 12 36 + 14 × 18 ÷ 12 = 36 + 252 ÷ 12 36 + 252 ÷ 12 = 36 + 21 36 + 21 = 57	**d** (9 ÷ 3 + 213) – 72 ÷ 4 = **198** (9 ÷ 3 + 213) – 72 ÷ 4 = (3 + 213) – 72 ÷ 4 (3 + 213) – 72 ÷ 4 = 216 – 72 ÷ 4 216 – 72 ÷ 4 = 216 – 18 216 – 18 = 198

2 **a** 3 × 9 + (18 + 36) ÷ 9 = 33

b 2 = 140 ÷ (2 + 12) – 4 × 2

Page 122, Reviewing Three Number Properties

1 Answers may vary.

a 12 × 23	**(10 x 23) + (2 x 23)**	**276**	C A (D)
b (50 ×73)× 2	**73 x (50 x 2)**	**7,300**	(C) A D
c 15 + (135 + 86)	**(15 + 135) + 86**	**236**	C (A) D
d 35 × 8	**(30 x 8) + (5 x 8)**	**280**	C A (D)
e 25 × (4 × 329)	**(25 x 4) x 329**	**32,900**	C (A) D
f (34 × 50) × 20	**34 x (50 x 20)**	**34,000**	C (A) D

Page 123, Finding Patterns & Solving Problems

1 **a** 46, 55, 64, Explanation: add 9 more each time

b 142, 131, 120, Explanation: subtract 11 each time

c 243, 729, 2187, Explanation: multiply by 3 each time

d 32, 64, 128, Explanation: double the number each time

2 **a** (challenge) 91; students' work will vary.

b (challenge) 301; students' work will vary.

c (challenge) odd; students' explanations will vary.

Page 124, Solving Equations & Pattern Problems

1 **a** 5

b 8 **c** 12 **d** 89

e 9 **f** 22 **g** 24

2 Students' responses will vary. Example: *53 – ___ = 43*

3 **a** (challenge) 442; students' work will vary.

b (challenge) odd; students' explanations will vary.

Page 125, Variables & Expressions

1 **a** 12

b 24

c 30

d 48

2 You would make $90.

3 **a** 4 + 23 = 27

b 4 + 103 = 107

c 3 × 2 – 2 = 4

d 3 × 4 – 2 = 10

e 2 × 7 + 12 = 26

f 2 × 10 + 12 = 32

Page 126, Cheetahs & Muffins

1 **a** Third choice, 5 × *c*

b 30 pounds; students' work will vary.

c 14 cheetahs; students' work will vary.

2 **a** Second choice, *m* – 8

b 16 muffins; students' work will vary.

c 20 muffins; students' work will vary.

Page 127, Adding Fractions with Different Denominators

1 **a** $^{51}/_{54}$ or $^{17}/_{18}$

b $^{148}/_{96}$ or $1^{52}/_{96}$ or $1^{13}/_{24}$

c $^{53}/_{55}$

d $^{170}/_{144}$ or $1^{26}/_{144}$ or $1^{13}/_{72}$

Page 128, Danny's Yard Work

1 **a** Third choice, 4 × *t* + 10

b $26.00; students' work will vary.

c 6 hours; students' work will vary.

2 (challenge) Students' responses will vary. Example:

a 4 × *t* + 10 × *t*

b *This expression would show how much money Danny would make if he had 2 different jobs. The variable* t *would be equal to what Danny charges per hour. He would work 2 jobs—1 for 4 hours, 1 for 10 hours.*

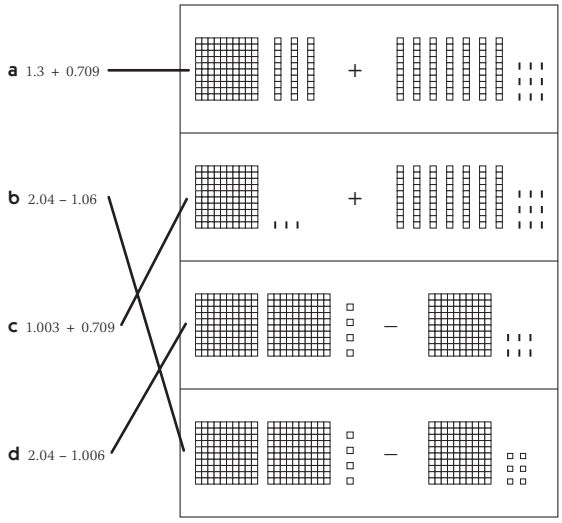
Use after Unit Seven, Session 8 (cont.)

Page 129, Subtracting Fractions with Different Denominators

1 **a** $^{18}/_{35}$; students' work will vary.
b $^{1}/_{15}$; students' work will vary.
c $^{7}/_{12}$ or $^{14}/_{24}$; students' work will vary.
d $^{25}/_{104}$; students' work will vary.

Page 130, Modeling, Adding & Subtracting Decimals

1



2 **a** >
b <
c <
d >

Use during Unit Eight

Page 131, Division Review

1 Students' work will vary. 32 R 3
2 Students' work will vary. 28 R2

Page 132, Jorge & Maribel's Present

1 **a** No; cost of present unknown.
b Third choice: The present costs $73.
c 5 hours (4 hours and 50 minutes is also acceptable.) Students' work will vary.

Page 133, Fraction Addition & Subtraction Review

1 **a** $^{13}/_{30}$
b $^{25}/_{21}$ or $1^{4}/_{21}$
2 Mabel ran exactly $^{3}/_{40}$ of a mile farther than Annie. Students' work will vary.
3 $^{47}/_{40}$ or $1^{7}/_{40}$ miles

Page 134, More Fraction Problems

1 **a** $^{4}/_{10}$ (or $^{2}/_{5}$)
b $^{8}/_{12}$ (or $^{2}/_{3}$)
c $1^{1}/_{8}$
d $1^{2}/_{12}$ (or $1^{1}/_{6}$)
e $1^{2}/_{8}$ (or $1^{1}/_{4}$)
2 $4^{1}/_{8}$ kilometers; students' work will vary.

Page 135, Fraction Addition & Subtraction Story Problems

1 **a** $1^{11}/_{70}$
b $^{13}/_{63}$
2 $3^{5}/_{12}$ cups of snack mix
3 Julianne drank more $^{11}/_{48}$ more of a water bottle than Lisa.

Page 136, Reading & Interpreting a Double Bar Graph

1 $2^{1}/_{4}$ feet
2 $6^{3}/_{4}$ feet
3 $16^{3}/_{4}$ feet
4 Students' responses will vary. Example: *All three of the snakes were about the same length when they were born. By the time they grew up, the boa was a little more than twice as long as the ball python, and the anaconda was more than twice as long as the boa. The anaconda was between four and five time as long as the ball python.*

Page 137, Decimal Addition & Subtraction Review

1 Students' responses will vary.
2 9.995; 17.593; 30.28; 10.208
8.319; 6.398
3 2.728; 2.228; 1.18; 5.071
3.786; 0.913

Page 138, The Python Problem

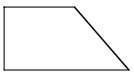
1 **a** Yes
b None of the choices is helpful.
c Eduardo's python was longer by 1.96 cm.

ANSWER KEY

Use during Unit Eight (cont.)

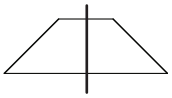
Page 139, Drawing Lines of Symmetry

1



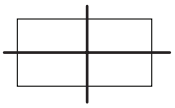
This figure has 0 line(s) of symmetry.

2



This figure has 1 line(s) of symmetry.

3



This figure has 2 line(s) of symmetry.

4

This figure has 0 line(s) of symmetry.

5

This figure has 1 line(s) of symmetry.

Page 140, Classifying Triangles Review

1 3; Students' explanations will vary.
Example: *An acute triangle that is also equilateral has exactly 3 lines of symmetry.*

2 1; Students' explanations will vary.
Example: *A right triangle that is also isosceles has exactly 1 line of symmetry.*

3 1; Students' explanations will vary.
Example: *An obtuse triangle that is also isosceles has exactly 1 line of symmetry.*


practice book

NAME _____ **DATE** _____

Multiplication & Division Facts

1 Complete the multiplication facts.

0 × 5 = ____	7 × 4 = ____	8 × 6 = ____	3 × 4 = ____	6 × 6 = ____	3 × 6 = ____	7 × 8 = ____
4 × 4 = ____	6 × 8 = ____	7 × 7 = ____	8 × 4 = ____	1 × 9 = ____	3 × 7 = ____	5 × 6 = ____
10 × 4 = ____	5 × 5 = ____	8 × 8 = ____	9 × 3 = ____	4 × 9 = ____	7 × 5 = ____	6 × 7 = ____

2 Complete the division facts.

42 ÷ 6 = _____ 54 ÷ 6 = _____ 24 ÷ 3 = _____

63 ÷ 9 = _____ 28 ÷ 4 = _____ 7 ÷ 1 = _____

3 Write a greater than, less than, or equal sign to complete each number sentence. Try to complete each number sentence without doing all the calculations.

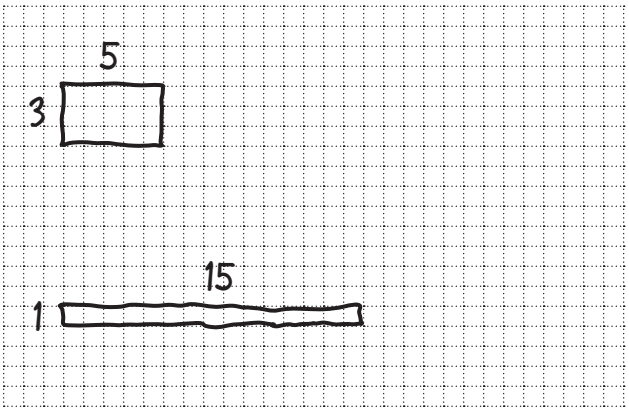
example 36 + 4 < 26 + 20	**a** 2 × 24 ____ 2 × 16
b 400 ÷ 80 ____ 400 ÷ 10	**c** 77 – 20 ____ 67 – 20
d 36 + 23 ____ 46 + 16	**e** 458 – 129 ____ 358 – 29
f 3 × 360 ____ 40 × 30	**g** 50 × 400 ____ 400 × 50
h 2,500 ÷ 10 ____ 1,000 ÷ 5	**i** 24,000 ÷ 6 ____ 48,000 ÷ 12

NAME _____ **DATE** _____

Finding Factor Pairs

1 Draw and label rectangles to show all the factor pairs for each number. Then write the factor pairs in the space provided.

example 15



Factors of 15 3, 5, 1, 15

a 18

Factors of 18 _____

b 24

Factors of 24 _____

c 28

Factors of 28 _____

CHALLENGE

2 Find all the factor pairs for 100. Sketch rectangles on another sheet of paper to help if you need to.

NAME _____ **DATE** _____

Prime & Composite Numbers

Use the following information to help solve the problems below.

A prime number has only two factors: itself and 1.	A composite number has more than two factors.	The number 1 is neither prime nor composite.
Number: 3 1 × 3	Number 6 2 × 3 1 × 6	Number: 1 1 × 1

1 For each number, circle prime or composite. Then list all of its factors.

Number	Circle one.	List all of the factors.
example 8	prime (composite)	1, 2, 4, 8
a 5	prime composite	
b 16	prime composite	
c 27	prime composite	
d 31	prime composite	
e 36	prime composite	
f 108	prime composite	
g 126	prime composite	

2 Julia says that prime numbers have to be odd and composite numbers have to be even. Is she correct? Explain how you know.

NAME _____ **DATE** _____

Multiplication Practice

1 Solve the following multiplication problems.

20 × 3	20 × 4	30 × 6	30 × 8	30 × 9	40 × 5	40 × 7
50 × 3	50 × 4	50 × 8	60 × 8	60 × 5	60 × 6	70 × 7
70 × 3	90 × 7	80 × 7	80 × 6	90 × 8	80 × 9	40 × 8

2 Solve each problem below using the partial products method shown.

135 × 4

4 × 100 = 400
4 × 30 = 120
4 × 5 = + 20
540

27 × 6

29 × 5

57 × 6

53 × 8

108 × 6

217 × 4

433 × 6

NAME _____ **DATE** _____

Multiplication, Division & Secret Path Problems

1 Complete the multiplication facts.

4 × 8 = ____	7 × 9 = ____	0 × 6 = ____	5 × 5 = ____	6 × 3 = ____	7 × 6 = ____	1 × 8 = ____
3 × 9 = ____	2 × 9 = ____	10 × 7 = ____	5 × 7 = ____	8 × 8 = ____	3 × 9 = ____	5 × 8 = ____
9 × 9 = ____	4 × 7 = ____	6 × 9 = ____	7 × 7 = ____	7 × 8 = ____	6 × 12 = ____	8 × 12 = ____

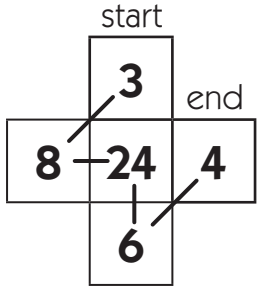
2 Complete the division facts.

36 ÷ 6 = _____ 54 ÷ 9 = _____ 15 ÷ 3 = _____

36 ÷ 9 = _____ 24 ÷ 4 = _____ 21 ÷ 7 = _____

3 Use multiplication and division to find the secret path through each maze. You can only move one space up, down, over, or diagonally each time. Write two equations to explain the path through the maze.

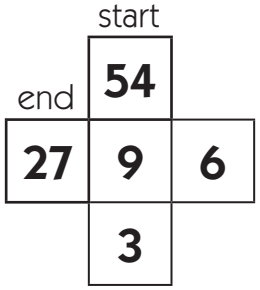
ex



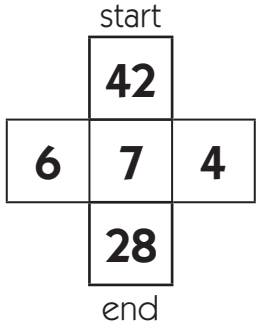
3 × 8 = 24

24 ÷ 6 = 4

a



b



NAME _____ **DATE** _____

Multiples of 3 & 4

1a Circle the rest of the multiples of 3. (count-by-3 numbers)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b What do you notice about the multiples of 3?

2a Circle the rest of the multiples of 4. (count-by-4 numbers)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b What do you notice about the multiples of 4?

3 What do you notice about the numbers that are multiples of both 3 and 4?

NAME _____ **DATE** _____

Multiples of 6 & 7

1a Circle the rest of the multiples of 6. (count-by-6 numbers)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b What do you notice about the multiples of 6?

2a Circle the rest of the multiples of 7. (count-by-7 numbers)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b What do you notice about the multiples of 7?

3 What numbers are multiples of both 6 and 7?

4 What would be the first multiple of 6 and 7 that is greater than 100? Explain how you know.

NAME _____ **DATE** _____

Multiplication & Multiples

1 Complete the following multiplication facts.

6 × 5 =	7 × 4 =	6 × 6 =	7 × 2 =	9 × 7 =	6 × 7 =	8 × 6 =
7 × 7 =	7 × 4 =	8 × 7 =	4 × 12 =	12 × 10 =	7 × 12 =	12 × 9 =

CHALLENGE

2 Frances noticed that the multiples of 6 only have even digits in the ones place, but the multiples of 7 can have any digit in the ones place. Explain to Frances why this is true.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

3 Jake thought about what Frances noticed, and then he said that any number that is a multiple of both 6 and 7 would have to have an even digit in the ones place. Explain why Jake's observation is true.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

NAME _____ **DATE** _____

Addition & Subtraction Review

1 Solve the addition problems below.

457 + 142 _____	387 + 414 _____	609 + 734 _____	1,589 + 3,437 _____

2 Solve the subtraction problems below.

803 – 547 _____	745 – 548 _____	985 – 237 _____	3,581 – 1,346 _____

3 Fill in the missing numbers to make each equation true.

a 100 = _____ + 30	**b** 100 × _____ = 1,000
c 4 = _____ ÷ 9	**d** _____ = 100 – 56
e 18 × 2 = _____ × 4	**f** 90 ÷ _____ = 5 × 9

4 Fill in the missing digits.

example

$$\begin{array}{r} 5\,\boxed{3}\,\boxed{6} \\ -\ 2\ 4\ 8 \\ \hline \boxed{2}\ 8\ 8 \end{array}$$

a

$$\begin{array}{r} \square\ 0\ \square \\ -\ 1\ \square\ 9 \\ \hline 2\ 2\ 3 \end{array}$$

b

$$\begin{array}{r} \square\ 8\ 2 \\ -\ 1\ \square\ \square \\ \hline 4\ 0\ 5 \end{array}$$

c

$$\begin{array}{r} \square\ 2\ 4\ 6 \\ -\ 1\ \square\ 2\ \square \\ \hline 2\ 9\ \square\ 7 \end{array}$$

d

$$\begin{array}{r} 3\ 0\ \square\ 8 \\ -\ 1\ \square\ 9\ \square \\ \hline \square\ 7\ 1\ 2 \end{array}$$

e

$$\begin{array}{r} 5\ 0\ 6\ \square\ 3 \\ -\ \square\ 7\ \square\ 5\ 5 \\ \hline 1\ \square\ 1\ 3\ \square \end{array}$$

NAME _____ **DATE** _____

Run for the Arts

1 Stephanie is 11 years old. Her sister Emma is 9 years old. They are doing Run for the Arts at their school. Stephanie wants people to make pledges based on the number of miles she runs. Emma just wants people to pledge a certain amount of money. Their grandma pledged $36 for Emma and $8 per mile for Stephanie. Their uncle pledged $18 for Emma and $7 per mile for Stephanie. How many miles will Stephanie need to run to earn more money than Emma?

a Restate the question in your own words:

b Underline the information in the problem you *do* need to solve the problem.

c Cross out the information in the problem you *don't* need to solve the problem.

d Solve the problem. Show all your work.

e Does your answer make sense? Explain how you can tell.

NAME _____ **DATE** _____

Order of Operations

The order of operations tells you how to do calculations when there is more than one kind of operation.

Order of Operations	Example
	20 – 12 ÷ (3 + 1)
1. Anything inside parentheses	20 – 12 ÷ **(3 + 1)** = 20 – 12 ÷ 4
2. Multiplication and division from left to right	20 – **12 ÷ 4** = 20 – 3
3. Addition and subtraction from left to right	**20 – 3** = 17

1 Use the order of operations above to complete each equation.

a (9 + 3) × (16 ÷ 8) ÷ 4	**b** (365 + 35) ÷ 5 + 3
c 36 ÷ 6 + 4 × (27 ÷ 9)	**d** (26 – 18) × 5 ÷ 10 + 10

2 Insert parentheses to make each equation true.

a 2 × 18 – 5 + 15 ÷ 5 = 32	**b** 34 – 20 ÷ 4 + 3 = 2
c 14 = 50 – 42 ÷ 3 + 4 × 6	**d** 21 = 7 + 16 – 8 ÷ 2 + 2 × 25 ÷ 5

CHALLENGE

3 Using at least two operations, write an expression that is the same whether you do the calculations from left to right or using the correct order of operations.

NAME _____ **DATE** _____

Understanding & Using Number Properties

If you are adding or multiplying, you can change the order of the numbers or the way they are grouped to make the calculations easier. The three properties below can make mental math easier.

Commutative Property	Associative Property	Distributive Property
Changing the order of two numbers or numerical expressions when you add or multiply does not change the answer.	Changing the way you group three numbers or numerical expressions when you add or multiply does not change the answer.	You can break a number apart, multiply each part separately, and then add the products. You will still get the same answer.
$5 + 2 = 2 + 5$ $5 \times 2 = 2 \times 5$	$(38 \times 4) \times 25 = 38 \times (4 \times 25)$ $= 38 \times 100$ $= 3{,}800$	$6 \times 13 = 6 \times (10 + 3)$ $= 6 \times 10 + 6 \times 3$ $= 60 + 18$ $= 78$

1 For each problem below:

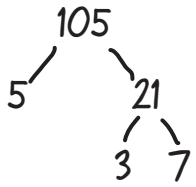
- Write it a different way so it's easier to solve in your head.
- Solve it and write the answer.
- Circle C if you switched the order of the numbers.
- Circle A if you grouped the numbers in a different way.
- Circle D if you broke the number apart and multiplied one part at a time.
- You may need to circle more than one property.

Problem	Rewrite	Answer	Property
ex $(70 + 469) + 30$	$(70 + 30) + 469$	569	C A D
a $(69 + 45) + 55$			C A D
b 4×32			C A D
c $4 \times (16 \times 25)$			C A D
d $(250 + 86) + 50$			C A D

NAME _____ **DATE** _____

Prime Factorization

1 Show the prime factorization for each number. Then use the prime factors to help determine *all* the factors of that number.

Number	Prime Factorization	*All* the Factors (Thinking of Factor Pairs)
ex 105		1, 105 3, 35 5, 21 7, 15
a 18		
b 45		
c 72		

2 What factors do 18, 45, and 72 have in common?

3 What is the *greatest* factor that 18, 45, and 72 have in common?

NAME _____ **DATE** _____

Rounding Decimals

When you are rounding, look at the digit one place to the right of where you want to round. If you round to the nearest one, look at the digit in the tenths place. If you round to the nearest ten, look at the digit in the ones place. If the digit is 5 or higher, round up. If it is less than 5, round down.

1 Underline the number in the tenths place. Then circle *up* or *down* to show whether you are rounding up or down. Then round the number to the nearest one.

ex 11.72 rounds up/down to 12.00.	**a** 2.47 rounds up/down to _____.
b 33.29 rounds up/down to _____.	**c** 4.56 rounds up/down to _____.

2 Underline the number in the ones place. Then circle *up* or *down* to show whether you are rounding up or down. Then round the number to the nearest ten.

ex 14.89 rounds up/down to 10.00.	**a** 17.28 rounds up/down to _____.
b 35.67 rounds up/down to _____.	**c** 43.05 rounds up/down to _____.

3 Use rounding and estimation to answer the questions below without doing all the calculations. Fill in one circle to answer each question.

a Chris read a really great book that he thinks his friends would like too. Each copy of the book costs $7.99. If Chris has $32, can he buy a copy for each of his four friends?

◯ Yes, he has enough money. ◯ No. He does not have enough money.

b Melissa wants to buy 3 magazines. She has $6 and each magazine costs $2.65. Does she have enough money to buy 3 magazines?

◯ Yes, she has enough money. ◯ No. She does not have enough money.

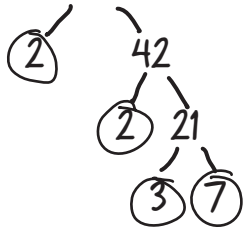
c Frank is buying ham to make sandwiches for a picnic. He has $25 and the ham costs $6.79 per pound. Does he have enough money to buy 3 pounds of ham?

◯ Yes, he has enough money. ◯ No. He does not have enough money.

NAME _____ **DATE** _____

More Prime Factorization

1 Use a factor tree to find the prime factorization of each number below.

ex 84  $84 = 2 \times 2 \times 3 \times 7$	**a** 96	**b** 72

2 Use the prime factors above to complete the sentences below. Fill in the circle or circles for each one.

a 12 is a factor of: ◯ 84 ◯ 96 ◯ 72

b 4 is a factor of: ◯ 84 ◯ 96 ◯ 72

c 8 is a factor of: ◯ 84 ◯ 96 ◯ 72

d 24 is a factor of: ◯ 84 ◯ 96 ◯ 72

3a If you know that 12 is a factor of a certain number, what else must be true about that number?

◯ It is prime.
◯ It is greater than 40.
◯ It is even.
◯ It is divisible by 9.

b Explain your answer to part a.

4 If you know that 10 is a factor of a certain number, what other numbers can you be certain are also factors of that number?

NAME _____ **DATE** _____

Rounding & Estimation

1 Circle which of the two numbers you would add to the first number to get closet to the target number. Use rounding and estimation to help.

Target Number	First Number	Circle One Number		Show Your Work
ex 120	62	(73)	36	60 + 70 = 130 (73) 60 + 40 = 100 (36)
a 170	47	153	108	
b 190	83	96	132	
c 230	89	118	172	

2 Use rounding and estimation to answer the questions below without doing all the calculations. Fill in one circle to answer each question.

a Regina is reading a book that is 386 pages long. She read 190 pages last week. If she reads 187 pages this week, will she finish the book?

◯ Yes. She will finish the book. ◯ No. She will not finish the book.

b Kiyoshi wants to buy a bike that costs $230. He has $80. His grandmother said she will give him $100, and his neighbor said she will pay him $32 to do some work in her garden. Will Kiyoshi have enough money to buy the bike?

◯ Yes. He will have enough money. ◯ No. He will not have enough money.

NAME _____ **DATE** _____

Time Calculations

1 There are _____ minutes in an hour.

2 Complete the table below.

Add these times	Your Work	Your Answer in Hours & Minutes
ex 45 mins. + 45 mins.	45 + 45 = 90 90 - 60 = 30	1 hour, 30 mins.
a 45 mins. + 90 mins.		
b 30 mins. + 45 mins.		
c 60 mins. + 90 mins.		

3 Shanda's mom dropped her and her friend Lisa off at the park at 2:00 pm. She said she would come back for them at 5:00 pm. Shanda and Lisa spent 45 minutes on the playground and 30 minutes talking to some other friends at the water fountain. Then they decided they wanted to spend the rest of their time at the pool. How much time do they have to spend at the pool before Shanda's mom comes back? Show all your work.

4 Carlos sleeps from 8:30 at night until 6:15 in the morning. His brother Miguel sleeps from 9:00 at night until 7:00 in the morning. Who gets more sleep each night, Carlos or Miguel? Explain how you know.

NAME _____ **DATE** _____

Roberta's Time & Money Problem

1 Roberta's grandma asked her to help clean up her yard and garden on Saturday. She said she will pay Roberta $8 per hour. Roberta's mom says she can go, but that she needs to be home by 4:30 pm. It takes Roberta 30 minutes to ride her bike the 5 miles to her grandma's house and 30 minutes to ride home. If she takes an hour break to eat lunch with her grandma, what time should she leave her home in the morning so that she can make at least $50 and get home at 4:30?

a Restate the question in your own words:

b Underline the information in the problem you *do* need to solve the problem.

c Cross out the information in the problem you *don't* need to solve the problem.

d Solve the problem. Show all your work.

e Does your answer make sense? Explain how you can tell.

NAME _____ **DATE** _____

Division, Multiplication & Prime Factorization

1 Complete the division table below.

÷	14	63	42	35	56	49	28	21
7	2							

2 Solve each problem below using the partial products method.

example

63
× 21

20 × 60 = 1,200
20 × 3 = 60
1 × 60 = 60
1 × 3 = + 3
1,323

a

36
× 27

b

44
× 37

c

59
× 64

CHALLENGE

3 What is the greatest factor of 96 (that is not 96 itself)?

NAME _____ **DATE** _____

Chin's Vegetable Patch

1 Chin is using 36 feet of leftover fencing his neighbor gave him to make a rectangular vegetable patch in his backyard. He wants to use up all the fencing and make the patch have the largest area possible. What should be the dimensions of Chin's vegetable patch?

a Restate the question in your own words:

b Solve the problem. Show all your work.

CHALLENGE

2 Use numbers, words, and/or sketches to describe any patterns you noticed while solving this problem.

NAME _____ **DATE** _____

Secret Paths & Multiplication Tables

1 Use multiplication and division to find the secret path through each maze. The starting and ending points are marked for you. You can only move one space up, down, over, or diagonally each time. Write four equations to explain the path through the maze.

ex

start 3 — 4 — 12
36 — 6 2
9 — 4 6
end

$3 \times 4 = 12$
$12 \div 2 = 6$
$6 \times 6 = 36$
$36 \div 9 = 4$

a

start

42	6	6
7	4	36
3	3	9

end

b

	6	24	3
	4	8	72
end	28	7	9

start

2 Complete the multiplication charts below.

a

×	2	9	4	7	5	3	6	8
6	12							

b

×	2	9	4	7	5	3	6	8
7								

c

×	2	9	4	7	5	3	6	8
8								

d

×	12	18	22	24	36	25	27	35
5								

NAME _____ **DATE** _____

Using Basic Facts to Solve Larger Problems

Knowing the basic multiplication and division facts can help you multiply larger numbers. Start with the basic facts below and then complete the related fact family of larger numbers. Then make up your own fact family based on other related numbers.

Basic Fact Family	Related Fact Family	Your Own Related Fact Family
example 4 × 3 = 12 3 × 4 = 12 12 ÷ 4 = 3 12 ÷ 3 = 4	40 × 3 = 120 3 × 40 = 120 120 ÷ 40 = 3 120 ÷ 3 = 40	40 × 30 = 1,200 30 × 40 = 1,200 1,200 ÷ 40 = 30 1,200 ÷ 30 = 40
1 ___ × ___ = ___ 6 × 8 = 48 ___ ÷ ___ = ___ 48 ÷ 6 = 8	80 × 6 = 480 ___ × ___ = ___ 480 ÷ 80 = 6 ___ ÷ ___ = ___	___ × ___ = ___ ___ × ___ = ___ ___ ÷ ___ = ___ ___ ÷ ___ = ___
2 ___ × ___ = ___ 9 × 4 = 36 ___ ÷ ___ = ___ 36 ÷ 9 = 4	40 × 9 = 360 ___ × ___ = ___ 360 ÷ 40 = 9 ___ ÷ ___ = ___	___ × ___ = ___ ___ × ___ = ___ ___ ÷ ___ = ___ ___ ÷ ___ = ___
3 ___ × ___ = ___ 7 × 3 = 21 ___ ÷ ___ = ___ 21 ÷ 7 = 3	30 × 7 = 210 ___ × ___ = ___ 210 ÷ 30 = 7 ___ ÷ ___ = ___	___ × ___ = ___ ___ × ___ = ___ ___ ÷ ___ = ___ ___ ÷ ___ = ___

NAME _____ **DATE** _____

Multiplying by Multiples of 10

1 Complete the following multiplication problems.

10	100	1,000	20	200	20
× 10	× 10	× 10	× 10	× 10	× 20
____	____	____	____	____	____

2 Use each number below just one time to complete the multiplication problems.

3	6	30	60

8 0	7 0	4 0	6 0
× ☐	× ☐	× ☐	× ☐
2 4 0 0	4 2 0	2 4 0 0	1 8 0

3 Complete each basic fact and the related multiplication problem. Then write and solve another multiplication problem you could solve with that basic fact. You can use numbers that are as big as you want them to be.

Basic Facts	Related Problem	Your Own Problem and Solution
ex 4 × 5 = 20	40 × 5 = 200	40 × 500 = 20,000
a 6 × 4 = _____	60 × 40 = _____	
b 8 × 7 = _____	80 × 7 = _____	
c 3 × 9 = _____	30 × 9 = _____	
d 9 × 6 = _____	90 × 60 = _____	
e 9 × 4 = _____	90 × 4 = _____	

NAME _____ **DATE** _____

Multiplication Estimate & Check

1 Think about rounding to estimate the answers to the problems below. Then rewrite each problem vertically and solve it using the partial products method. Check your answer against your estimate to make sure that it is reasonable.

Problem	**ex** 63 × 21	**a** 42 × 37	**b** 73 × 26
Estimate	60 × 20 = 1,200		
Solution	63 × 21 20 × 60 = 1,200 20 × 3 = 60 1 × 60 = 60 1 × 3 = + 3 1,323		
Problem	**c** 33 × 19	**d** 84 × 38	**e** 56 × 44
Estimate			
Solution			

CHALLENGE

2 Circle the two numbers whose product is 1,274

26 34 49 61

NAME _____ **DATE** _____

Using the Standard Multiplication Algorithm

1 Solve these multiplication problems.

80 × 30	80 × 40	90 × 30	90 × 40	100 × 30	100 × 40

2 Solve these multiplication problems using the standard algorithm. Use the answers above to help make sure your answers are reasonable.

ex

$$\begin{array}{r} {}^{1}2 \\ 84 \\ \times\ 36 \\ \hline {}^{1}\ 504 \\ +\ 2{,}520 \\ \hline 3{,}024 \end{array}$$

a

$$\begin{array}{r} 79 \\ \times\ 26 \\ \hline \end{array}$$

b

$$\begin{array}{r} 86 \\ \times\ 32 \\ \hline \end{array}$$

c

$$\begin{array}{r} 92 \\ \times\ 37 \\ \hline \end{array}$$

d

$$\begin{array}{r} 82 \\ \times\ 43 \\ \hline \end{array}$$

e

$$\begin{array}{r} 98 \\ \times\ 29 \\ \hline \end{array}$$

NAME _____ **DATE** _____

The Soccer Tournament & the Video Arcade

1 There was a soccer tournament at the local park last summer. There were 16 teams in the tournament. There were 18 players on 10 of the teams and 17 players on the rest of the teams. How many soccer players were participating in the tournament in all? Show all your work.

2 Beth and her brother went to the arcade. It cost 75¢ to play 3 games. They played 21 games in all. How much money did they spend?

NAME _____ **DATE** _____

Metric Conversions

Knowing how to multiply and divide by 10, 100, and 1,000 can help you make conversions between units in the metric system.

1 Metric Units of Length/Distance

a Complete the following sentences.	**b** Use the information in part *a* to complete the equivalencies below.
There are 1,000 millimeters in 1 meter.	10 millimeters = 1 centimeter
There are _____ centimeters in 1 meter.	_____ centimeters = 1 kilometer
There are _____ meters in 1 kilometer.	_____ millimeters = 1 kilometer

2 Metric Units of Volume/Capacity

a Complete the following sentences.	**b** Use the information in part *a* to complete the equivalencies below.
There are 1,000 milliliters in 1 liter.	3,000 milliliters = 3 liters
There are _____ centiliters in 1 liter.	_____ centiliters = 4 liters
There are _____ liters in 1 kiloliter.	_____ liters = 7 kiloliters

3 Metric Units of Mass

a Complete the following sentences.	**b** Use the information in part *a* to complete the equivalencies below.
There are 1,000 milligrams in 1 gram.	2,500 milligrams = 2.5 grams
There are _____ centigrams in 1 gram.	_____ centigrams = 4.5 grams
There are _____ grams in 1 kilogram.	_____ grams = 3.5 kilograms

CHALLENGE

4 Complete the following conversions.

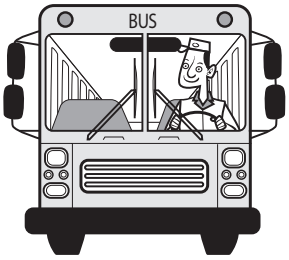
a _____ millimeters = 1 kilometer

b _____ millimeters = 4.5 kilometers

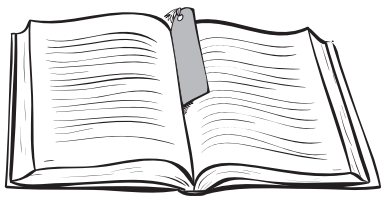
NAME _____ **DATE** _____

Riding the Bus & Reading for Fun

1 Frank rides the bus to and from school every week day. His dad rides the bus to and from work every week day. The bus costs $1.30 each way for a student and $1.65 each way for an adult. There were 23 week days in March. How much more did Frank's dad have to pay to ride the bus in March? Show all your work.



2 Lisa's teacher says that the students in her class should spend between 20 and 45 minutes each night reading for fun even on the weekends. Whitney says she's going to read just 20 minutes each night this week. Corey says he's going to read 45 minutes each night this week. How much more time will Corey spend reading this week than Whitney? Show all your work.



NAME _____ **DATE** _____

More Estimate & Check Problems

1 Think about rounding to estimate the answers to the problems below. Then rewrite each problem vertically and solve it using the standard algorithm. Check your answer against your estimate to make sure that it is reasonable.

Problem	**ex** 63 × 24	**a** 39 × 19	**b** 28 × 38
Estimate	60 × 25 = 1,500		
Solution	1 63 × 24 252 + 1,260 1,512		
Problem	**c** 89 × 22	**d** 71 × 52	**e** 62 × 42
Estimate			
Solution			

CHALLENGE

2 Circle the two numbers whose product is 627.

13

19

33

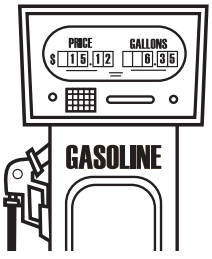
49

NAME _____ **DATE** _____

Race Car Problems

1 Race cars can drive about 5 miles on one gallon of gasoline. If a race car goes 265 miles in one race, about how many gallons of gasoline will it use? Show all your work.

2 There were 43 cars in the race. They all finished the 265 miles of the race and used about 1 gallon of gas to go 5 miles. About how many gallons of gas did the cars use altogether to finish the race? Show all your work.



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Multiplication & Division Problems

1 Fill in the missing numbers.

6 × □ = 48	8 × □ = 16	□ × 5 = 40	□ × 6 = 54	4 × □ = 28
5 × □ = 45	6 × □ = 30	□ × 7 = 49	□ × 4 = 16	8 × □ = 56

2 Write an equation to answer each question below.

Question	Equation	Answer
ex How many quarters are in 75¢?	75 ÷ 25 = 3	3 quarters
a How many cartons of 12 eggs make 36 eggs altogether?		
b There are 6 cans of soda in a pack. How many packs make 42 cans?		
c There are 24 cans of soda in a case. How many cases make 72 cans?		
d There are 3 tennis balls in a can. How many cans make 27 balls?		
e Jim rides his bike at 10 miles per hour. How many hours will it take him to ride 30 miles?		

NAME _____ **DATE** _____

Baking Cookies & Drying Clothes

1 Anne is baking giant cookies with her dad. They are baking them in batches of 8. If they made 36 cookies, how many batches did they have to bake? Show all your work.

2 Joe was doing his laundry at the laundromat. The dryer went for 15 minutes every time he put a quarter in it. He wanted to leave as soon as possible, so he kept checking on his clothes to see if they were dry. If his clothes were done drying in 50 minutes, how much money did Joe spend on the dryer? Show all your work.

NAME _____ **DATE** _____

Number Patterns

1 Complete the count-by patterns below.

a 3, 6, 9, _____, _____, 18, 21, _____, _____, _____

b 5, 10, 15, _____, 25, _____, 35, _____, _____

c 15, 30, 45, _____, _____, 90, _____

2 Is 105 divisible by 3, 5, or both? Explain how you know.

3a Circle all the multiples of 6.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b Circle all the multiples of 8.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

c Which numbers between 1 and 100 are multiples of both 6 and 8?

CHALLENGE

d How many numbers between 1 and 250 are multiples of both 6 and 8? Explain your answer.

NAME _____ **DATE** _____

Snacks for the Field Trip

1 Mrs. Ramos is taking 32 students on a field trip. She wants to provide snacks for the students to eat. Granola bars come in boxes of 8 and cost $2.50 per box. Apples come in bags of 4 and cost $1.50 per bag. Packages of peanut butter crackers come in boxes of 16 for $4.69. At these prices, which of the snacks has the cheapest price per item: granola bars, apples, or peanut butter crackers?

a Restate the question in your own words:

b Underline the information in the problem you need to solve the problem.

c Solve the problem. Show all your work.

d Does your answer make sense? Explain how you can tell by using estimation or thinking about the problem in another way.

NAME _____ **DATE** _____

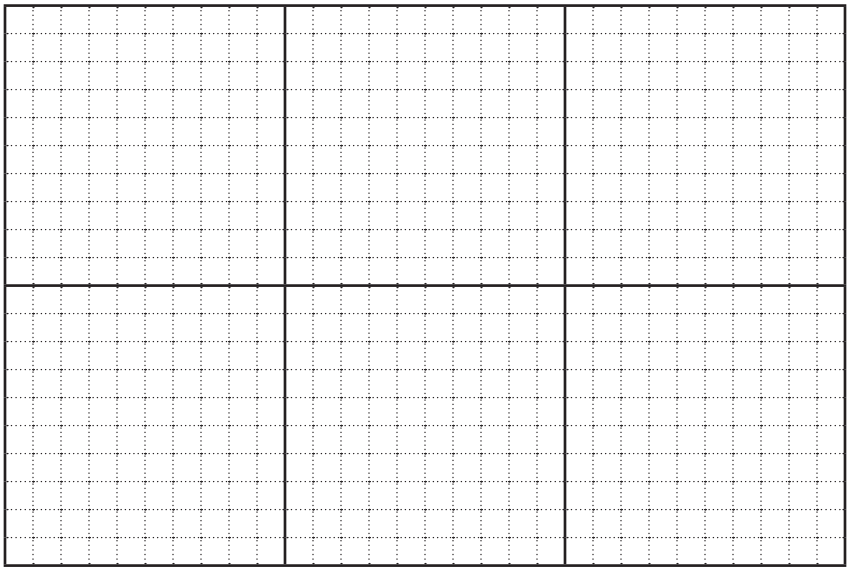
Division on a Base-Ten Grid

1 Complete the following multiplication problems.

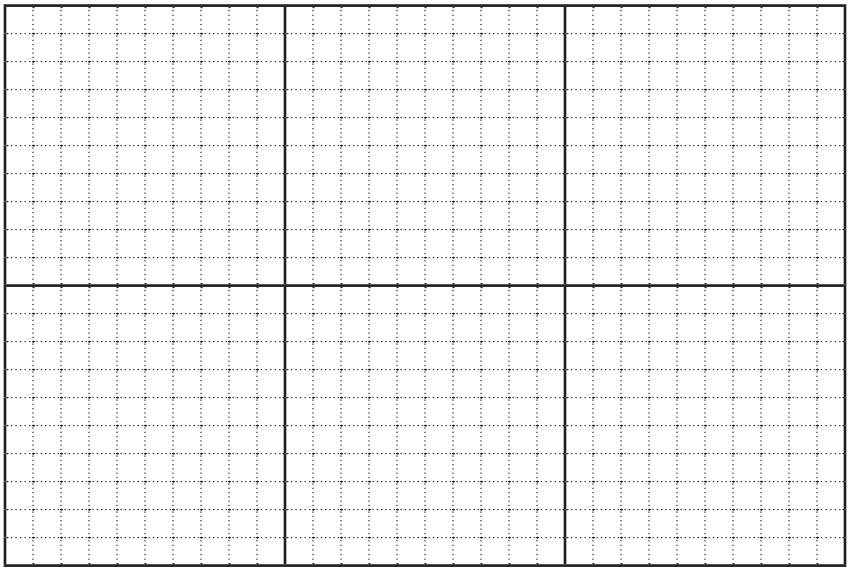
14	14	14	14	14	14
× 2	× 3	× 10	× 5	× 20	× 30
____	____	____	____	____	____

2 Solve the following division problems. Use the multiplication problems above and the grids to help.

a 322 ÷ 14 = _____



b 238 ÷ 14 = _____



NAME _____ **DATE** _____

Carla's Market & The Animal Shelter

1 Carla is putting apples in bags to sell at her market. She has 139 apples altogether. If she wants to have the fewest possible apples left over when she is done, should she put them in bags of 4 or 5? Show all your work.

2 Jorge volunteers at the animal shelter every Saturday. His neighbor Mrs. Johnson volunteers at the animal shelter every other day. Mrs. Johnson was at the animal shelter on the first day of this month, which was a Wednesday. How many times this month will Jorge and Mrs. Johnson be at the animal shelter on the very same day? Hint: *You could sketch a calendar to help solve the problem.*

NAME _____ **DATE** _____

Rounding & Division Practice

1 Complete each sentence below.

a If you want to round a number to the nearest ten, you need to look at the number in the _____ place.

b If you want to round a number to the nearest hundred, you need to look at the number in the _____ place.

2 Round each number first to the nearest ten and then to the nearest hundred.

Number	**ex** 382	**a** 437	**b** 264	**c** 578	**d** 843	**e** 235
Nearest Ten	380					
Nearest Hundred	400					

3 Complete the division problems.

12 ÷ 2 = _____ 24 ÷ 6 = _____ 18 ÷ 3 = _____ 45 ÷ 5 = _____

120 ÷ 2 = _____ 240 ÷ 6 = _____ 180 ÷ 3 = _____ 450 ÷ 5 = _____

4 Round and then divide to estimate each quotient.

Problem	Rounded	Esimated Quotient
ex 123 ÷ 2	120 ÷ 2 = 60	123 ÷ 2 is about equal to 60.
a 177 ÷ 3		177 ÷ 3 is about equal to _____.
b 237 ÷ 6		237 ÷ 6 is about equal to _____.
c 452 ÷ 5		452 ÷ 5 is about equal to _____.

NAME _____ **DATE** _____

More Rounding & Estimation Practice

1 Complete the following multiplication and division fact families.

ex 40 × 3 = 120 3 × 40 = 120 120 ÷ 40 = 3 120 ÷ 3 = 40	**a** 30 × 5 = 150	**b** 20 × 6 = 120	**c** 40 × 7 = 280

2 Use rounding and estimation to answer each question *yes* or *no* without doing all of the calculations.

a Mrs. Jackson has 3 grandchildren who go to Park Heights Elementary School. At Back to School Night, she wanted to buy each of them 2 T-shirts with the school mascot on them. The T-shirts cost $18 each and she has $150 to spend. Can she buy 2 T-shirts for each grandchild?	◯ Yes ◯ No
b It costs $27 per person to go to an amusement park. Mr. Lee is taking his two children to the amusement park and he has $120 to spend. Can he afford for each of his children to bring a friend?	◯ Yes ◯ No
c Rachel is reading a book that is 293 pages long. If she reads 38 pages per night, will she be able to finish the book in a week?	◯ Yes ◯ No
d Dante's cousin Carl was bragging that he biked 82 miles last week. If Dante bikes 18 miles a day for 5 days, will he ride more miles than Carl did?	◯ Yes ◯ No

CHALLENGE

3 Bakery A sells boxes of 6 muffins for $5.85. Bakery B sells boxes of 8 muffins for $8.25. Which bakery offers the better deal on muffins? How can you tell?

NAME _____ **DATE** _____

Estimating Money Amounts

Fill in the circles to answer the questions below.

1 Donny has a five-dollar bill, six quarters, and three dimes in his pocket. It would be most accurate to say that he has:

◯ about $5 in his pocket

◯ about $6 in his pocket

◯ about $7 in his pocket

2 Amber has a ten-dollar bill in her pocket. She got herself a milkshake for $3.60. She told her 2 little sisters she would buy them some ice cream too but that she cannot afford to get them each a milkshake. Is Amber right?

◯ She is right. She cannot afford to buy two more milkshakes.

◯ She is wrong. She can afford to buy two more milkshakes.

3 Chris wants a bike so that he can ride to and from school. The bike costs $237. Chris's mom spends $37.50 on his bus pass each month so that he can ride the bus to and from school. Chris told his mom that the bike would be a better deal after 5 months. (In other words, he said it would cost more to the ride the bus for 5 months than to buy the bike.) Was he right?

◯ Chris is right. The bike will be a better deal after 5 months.

◯ Chris is wrong. The bike is more expensive than 5 months of bus passes.

4 Lisa's mom gave her a $20 bill and asked to go to the store to get some groceries. She said that if there was any money left, she could buy a treat for herself. Here is a list of the things Lisa had to buy:

- gallon of milk, $3.50
- loaf of bread, $2.45
- block of cheese, $6.25
- carton of juice, $3.35
- broccoli, $1.50

Which treat could Lisa afford to buy?

◯ ice cream for $3.65

◯ a bag of cherries for $2.00

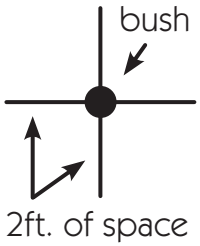
◯ a magazine for $4.25

NAME _____ **DATE** _____

Kasey's Blueberry Bushes

CHALLENGE

1 Kasey is planting 12 blueberry bushes in her yard. Each bush has to have 2 feet around it in all directions so that it has enough room to grow. When she is done, Kasey is going to put a fence around the bushes to keep the animals out. She wants to plant them in a rectangular patch, and she only has 56 feet of fencing. How should she plant the bushes? (How many rows should she plant? How many plants should be in each row?)



a Restate the question in your own words:

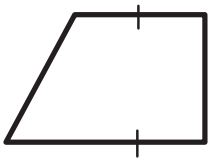
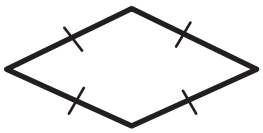
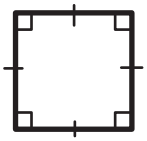
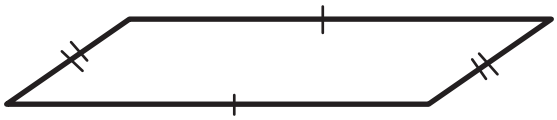
b Solve the problem. Show all your work.

c Does your answer make sense? Explain how you can tell by using estimation, working backwards from your answer, or thinking about the problem in another way.

NAME _____ **DATE** _____

Classifying Quadrilaterals

A *quadrilateral* is any polygon that has 4 sides. There are many kinds of quadrilaterals, including:

Trapezoid: a quadrilateral with exactly 1 pair of parallel sides 	Rectangle: a quadrilateral with 2 pairs of parallel sides and 4 right angles 
Rhombus: a quadrilateral with 4 sides that are all the same length 	Square: a quadrilateral with 4 right angles and 4 sides that are all the same length 
Parallelogram: a quadrilateral with 2 pairs of parallel sides 	

1 Look carefully at the figures below. Decide how many right angles, pairs of congruent sides, and pairs of parallel sides each has. Then circle the word or words that say what kind of figure it is. You might circle more than one word for some figures.

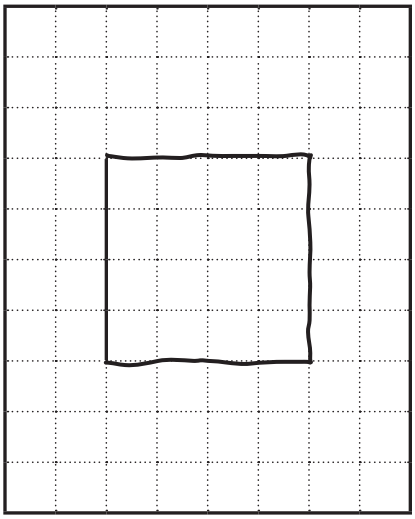
Figure	Right Angles?	Pairs of Congruent Sides?	Pairs of Parallel Sides?	Circle the word(s) that describe(s) the figure.
a 				trapezoid rectangle rhombus square parallelogram
b 				trapezoid rectangle rhombus square parallelogram
c 				trapezoid rectangle rhombus square parallelogram

NAME _____ **DATE** _____

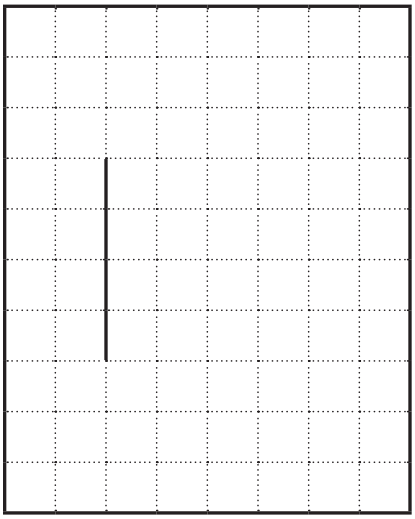
Drawing Quadrilaterals

1 Start with the same line each time to draw the different shapes named below.

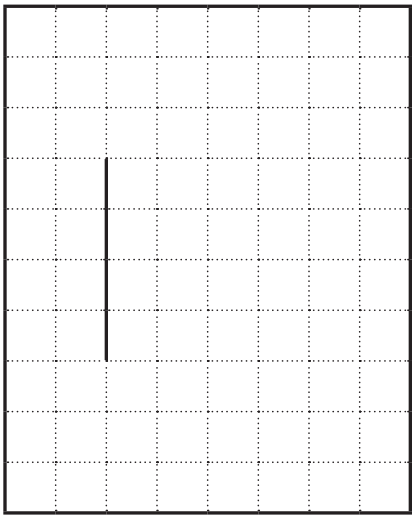
ex Square



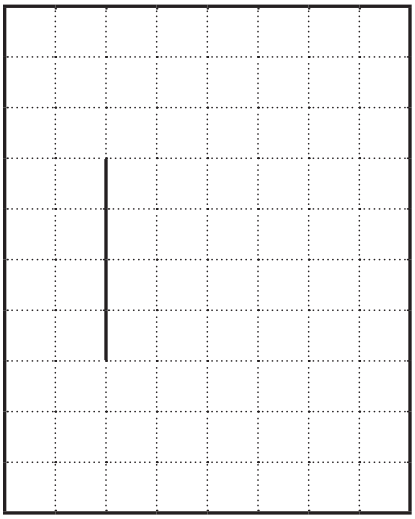
a Parallelogram that is not a rhombus or rectangle



b Trapezoid



c Rectangle that is not a square



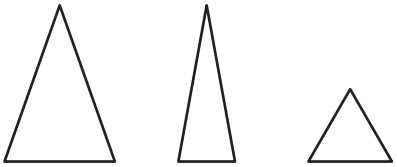
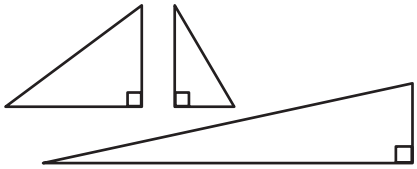
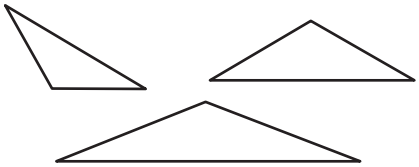
CHALLENGE

2 Which of your shapes above has the largest area? How can you tell?

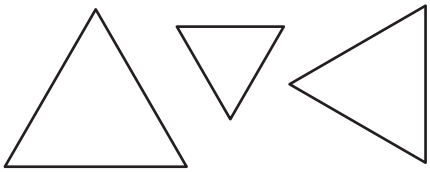
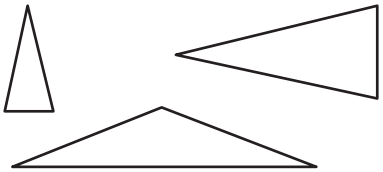
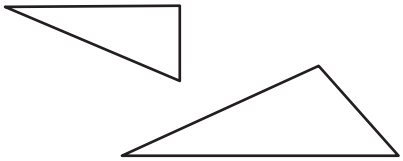
NAME _____ **DATE** _____

Classifying Triangles

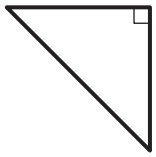
You can group triangles by the size of their angles.

Acute triangles All 3 angles are acute.	Right triangles 1 angle is a right angle.	Obtuse triangles 1 angle is an obtuse angle.
		

You can also group triangles by the lengths of their sides.

Equilateral triangles All 3 sides are the same length.	Isosceles triangles 2 sides are the same length.	Scalene triangles No sides are the same length.
		

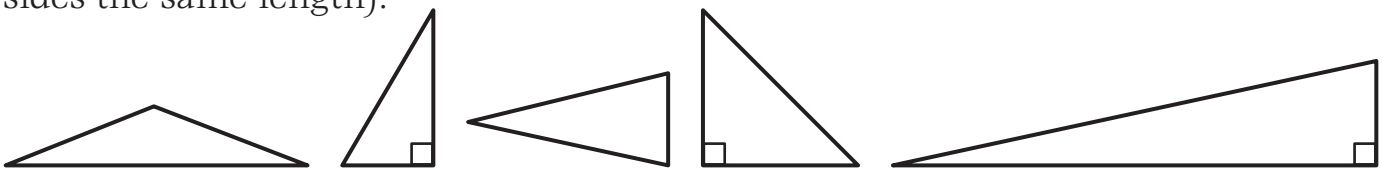
1 Look carefully at the triangles below and fill in the chart.

Triangle	Acute Angles?	Right Angles?	Obtuse Angles?	Congruent Sides?	What Kind? (circle as many as apply)
a 					acute equilateral right isosceles obtuse scalene
b 					acute equilateral right isosceles obtuse scalene

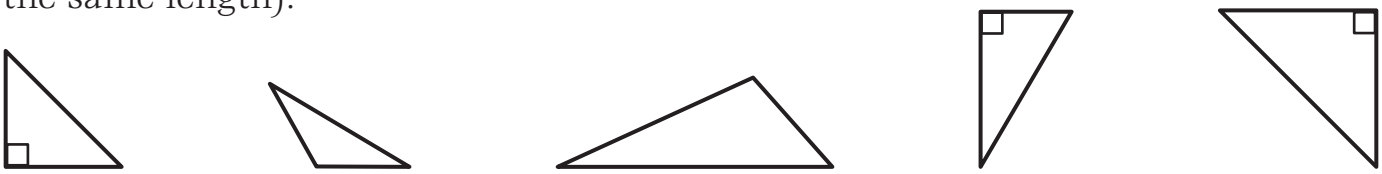
NAME _____ **DATE** _____

Identifying & Drawing Triangles

1 Circle the *right triangle* (one right angle) that is also an *isosceles triangle* (two sides the same length).

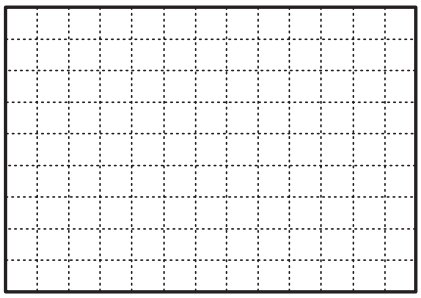


2 Circle the *right triangle* (one right angle) that is also a *scalene triangle* (no sides the same length).

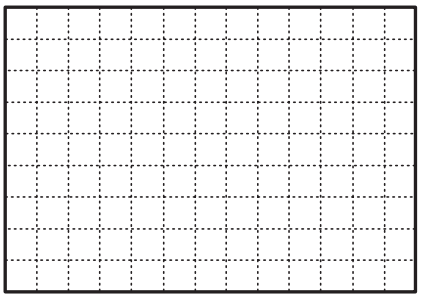


3 Draw the triangles described below.

a An obtuse isosceles triangle

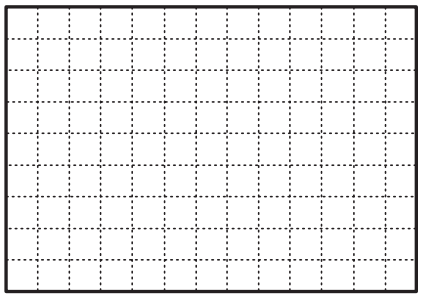


b An acute isosceles triangle



CHALLENGE

4 Lawrence said he drew a right obtuse triangle. Rosa said that was impossible. Explain why Rosa is correct.



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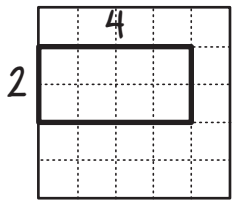
Finding the Areas of Rectangles, Triangles & Parallelograms

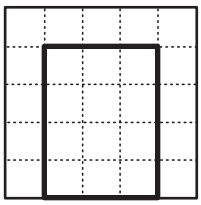
1 Find the area of each rectangle below. Each small square has an area of 1 square unit.

ex

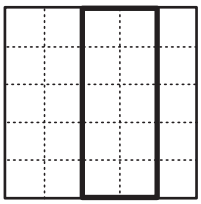


$2 \times 4 = 8$
8 square units

a

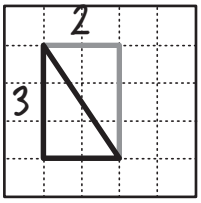


b



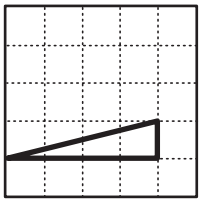
2 Find the area of each triangle below. Each small square has an area of 1 square unit.

ex

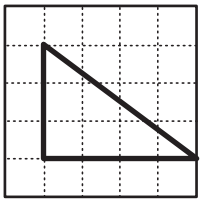


$(3 \times 2) \div 2 = 3$
3 square units

a

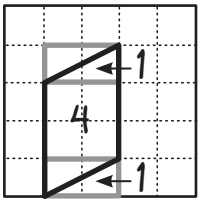


b



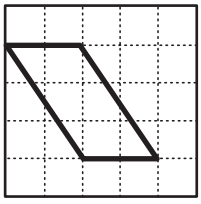
3 Find the area of each parallelogram below. Each small square has an area of 1 square unit.

ex

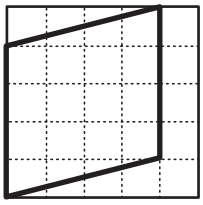


$2 \div 2 = 1$
$2 \times 2 = 4$
$1 + 1 + 4 = 6$
6 square units

a



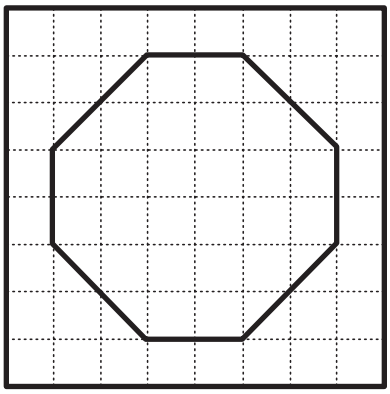
b



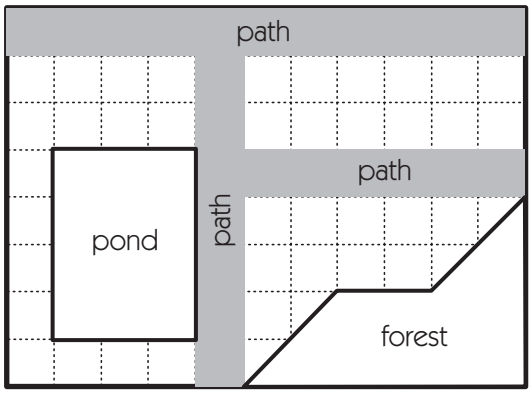
NAME _____ **DATE** _____

Area Story Problems

1 A spider spun a web shaped like this on our screen door. What area (in square units) did the web cover? Show all your work.



2 This is a map of the park near Sam's house. Any place that is not a path, the pond, or the forest is covered in grass. If each square represents 9 square yards, what area of the park is covered in grass? Show all your work.

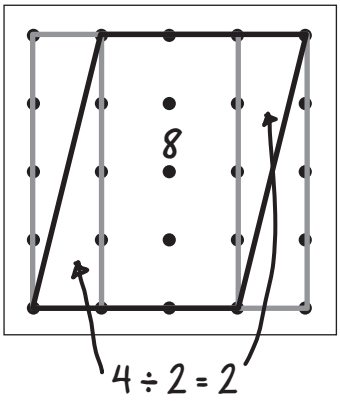


NAME _____ **DATE** _____

Finding the Areas of Quadrilaterals

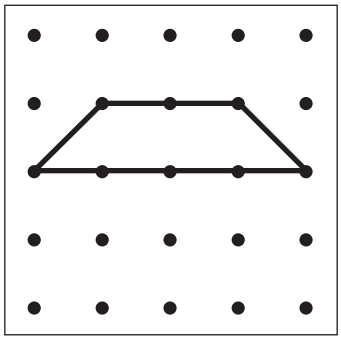
Find the area of each of these figures if the area of each small square on the geoboard is 1 square unit. Remember that you can divide the figures into pieces or draw shapes around them to help you find the area.

ex Area = 12 sq. units

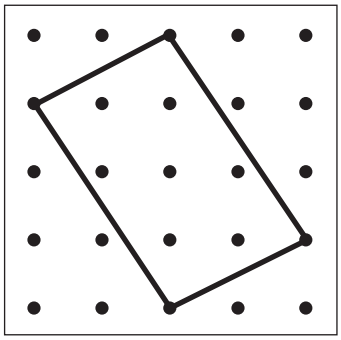


2 + 2 + 8 = 12 sq. units

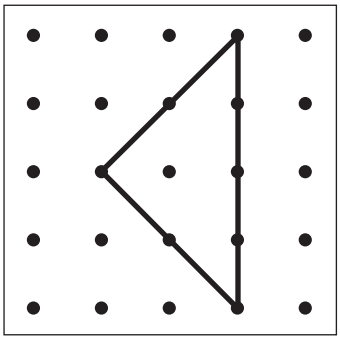
1 Area = _____



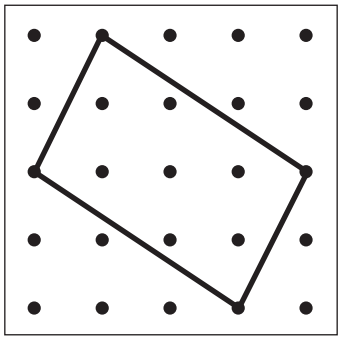
2 Area = _____



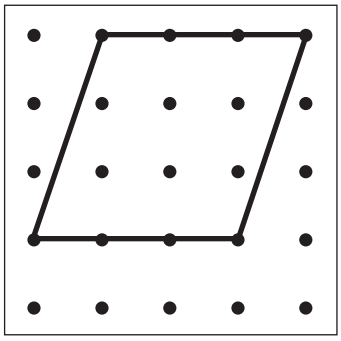
3 Area = _____



4 Area = _____



5 Area = _____



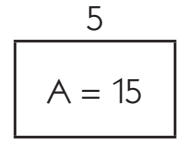
NAME _____ **DATE** _____

Length & Perimeter

1 Use a ruler marked in inches to measure each strip to the nearest eighth of an inch.

Strip	Measurement
ex 	$3\frac{1}{8}$ inches
a 	
b 	
c 	

2 The rectangle below has a perimeter of 16 and an area of 15. Sketch three other rectangles that have a perimeter of 16. Then find the area of each rectangle.



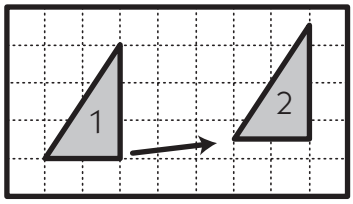
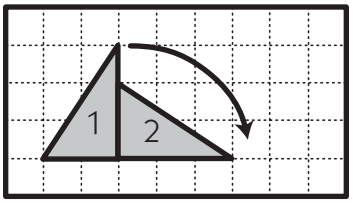
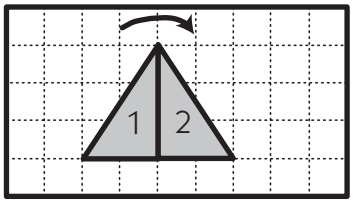
CHALLENGE

3 If you made a circle that was 16 inches around (had a circumference of 16 inches), do you think it would have an area that was greater or less than a square with a perimeter of 16 inches? Explain your answer.

NAME _____ **DATE** _____

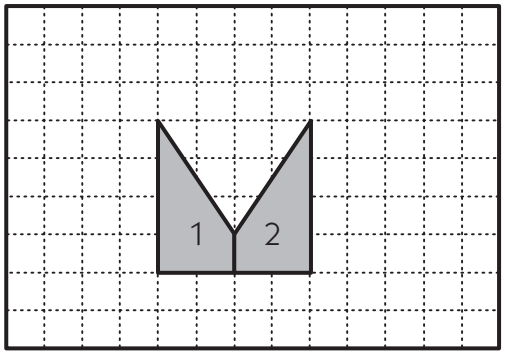
Naming Transformations

There are three different kinds of *transformations*.

Slide (translation)	Turn (rotation)	Flip (reflection)
		

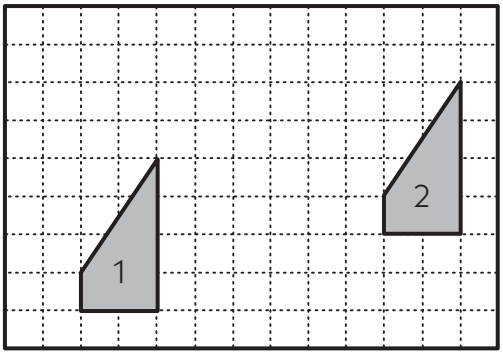
1 Fill in the circle to name the transformation on each grid.

a



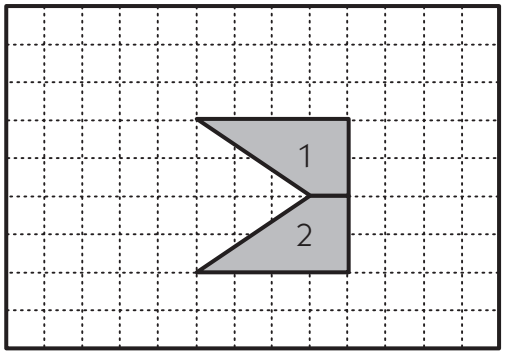
○ slide ○ turn ○ flip

b



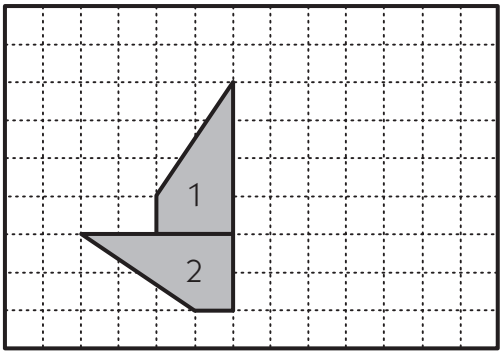
○ slide ○ turn ○ flip

c



○ slide ○ turn ○ flip

d



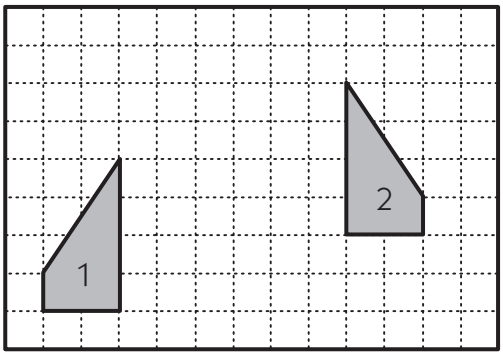
○ slide ○ turn ○ flip

NAME _____ **DATE** _____

Which Two Transformations?

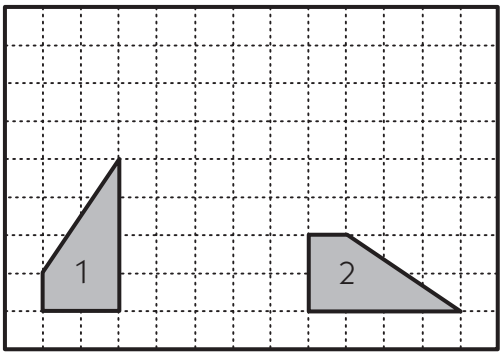
1 Fill in the circle to show which two transformations were performed on the figure.

ex



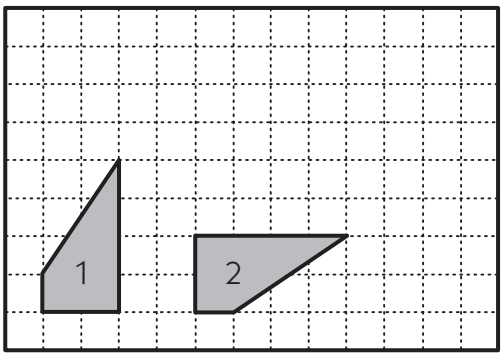
○ turn then flip ● flip then slide ○ turn then slide

a



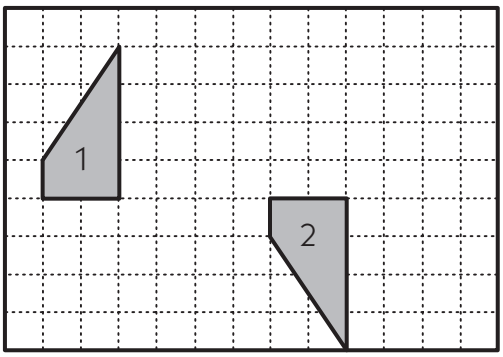
○ turn then flip ○ flip then slide ○ turn then slide

b



○ flip then turn ○ flip then slide ○ turn then slide

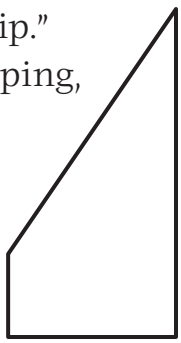
c



○ turn then flip ○ flip then slide ○ turn then slide

CHALLENGE

2 Paul said that the example in problem 1 above could be "slide then flip." Jenny said, "Maybe it never matters what order you do the turning, flipping, or sliding." Experiment with Jenny's idea using some grid paper and a cut-out shape that has no symmetry like the shape to the right. Then write what you discovered on a separate sheet of paper.

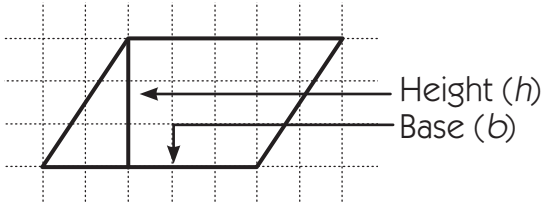


NAME _____ **DATE** _____

Finding the Areas of Parallelograms

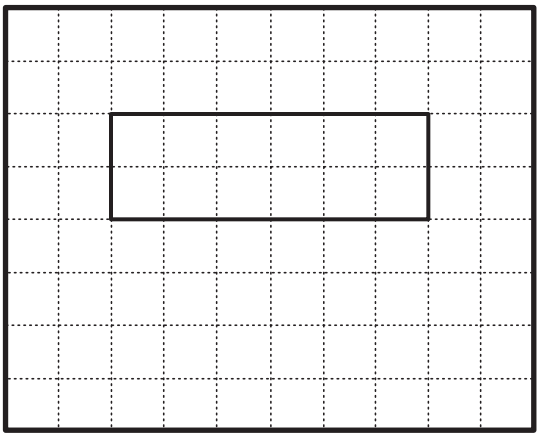
To find the area of any parallelogram, including squares and rectangles, multiply the base by the height.

Base × Height = Area
5 × 3 = 15 square units



1 Multiply the base by the height to find the area of these parallelograms.

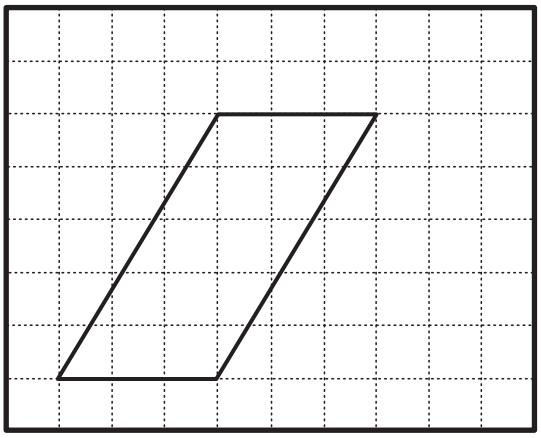
ex



Base 6 Height 2

Area 6 × 2 = 12 square units

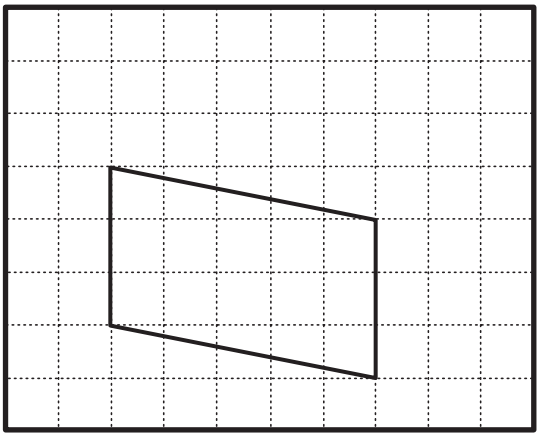
a



Base _____ Height _____

Area _____

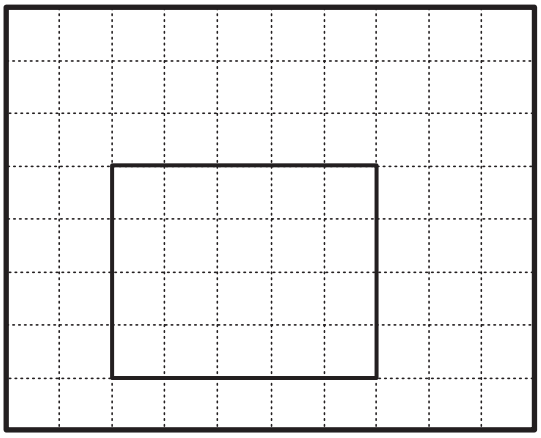
b



Base _____ Height _____

Area _____

c



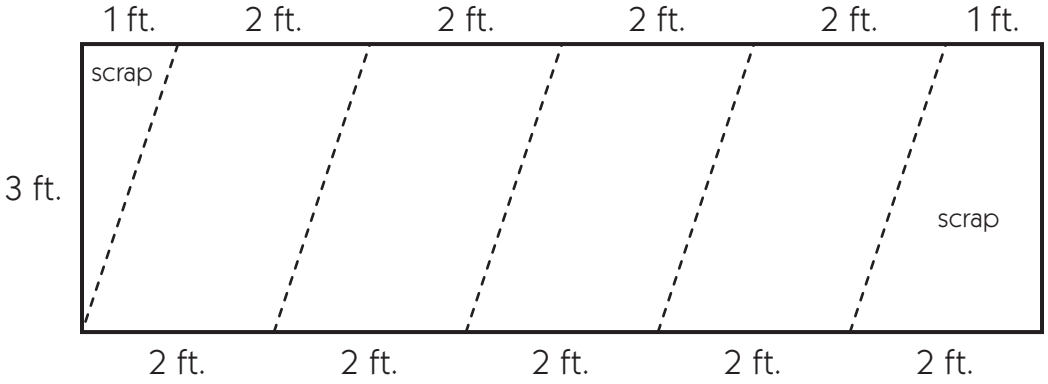
Base _____ Height _____

Area _____

NAME _____ **DATE** _____

The Bulletin Board Problem

1 Maya and Rachel are decorating their classroom bulletin board. They cut a 10-foot piece of chart paper that was 3 feet wide. Then they cut it along the dotted lines shown below to make thick stripes to put on the bulletin board. What was the area of each stripe? Show all your work.



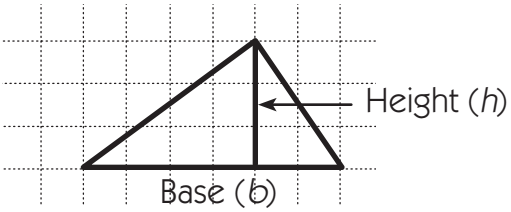
2 How much of the paper (in square feet) was left over as scraps? Show all your work.

NAME _____ **DATE** _____

Finding the Area of a Triangle

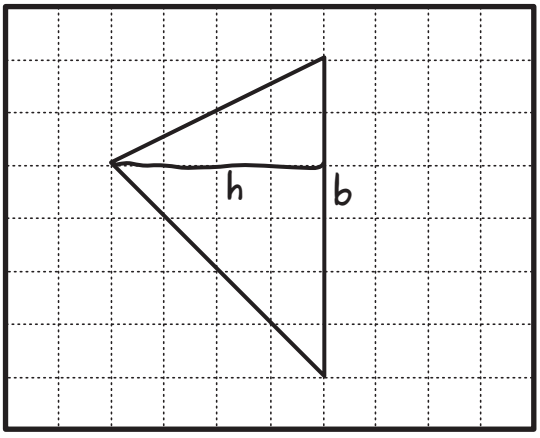
To find the area of any triangle, multiply the base by the height and then divide by 2.

(Base × Height) ÷ 2 = Area
(6 × 3) ÷ 2 = 9 Square Units



1 Label the base and height on each triangle. Then use the formula above to find the area of each one.

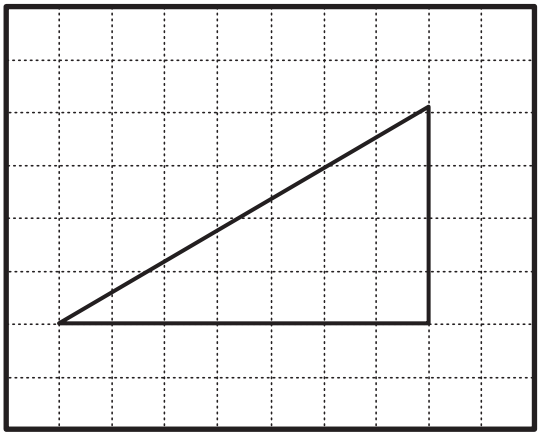
ex



Base 6 Height 4

Area (6 x 4) ÷ 2 = 12 square units

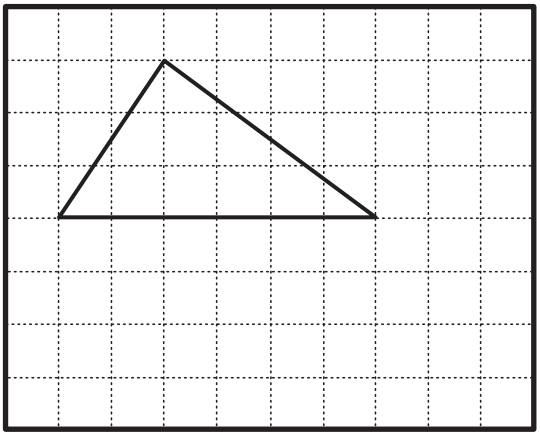
a



Base _____ Height _____

Area _____

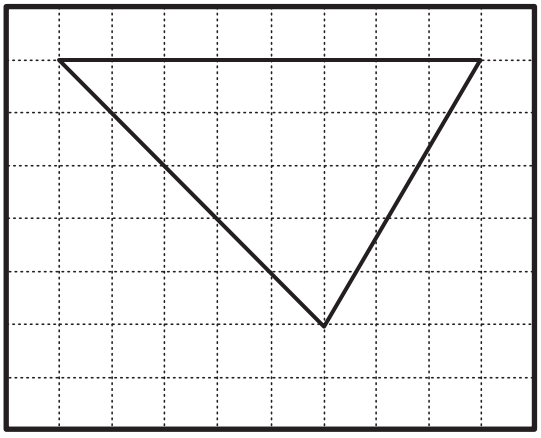
b



Base _____ Height _____

Area _____

c



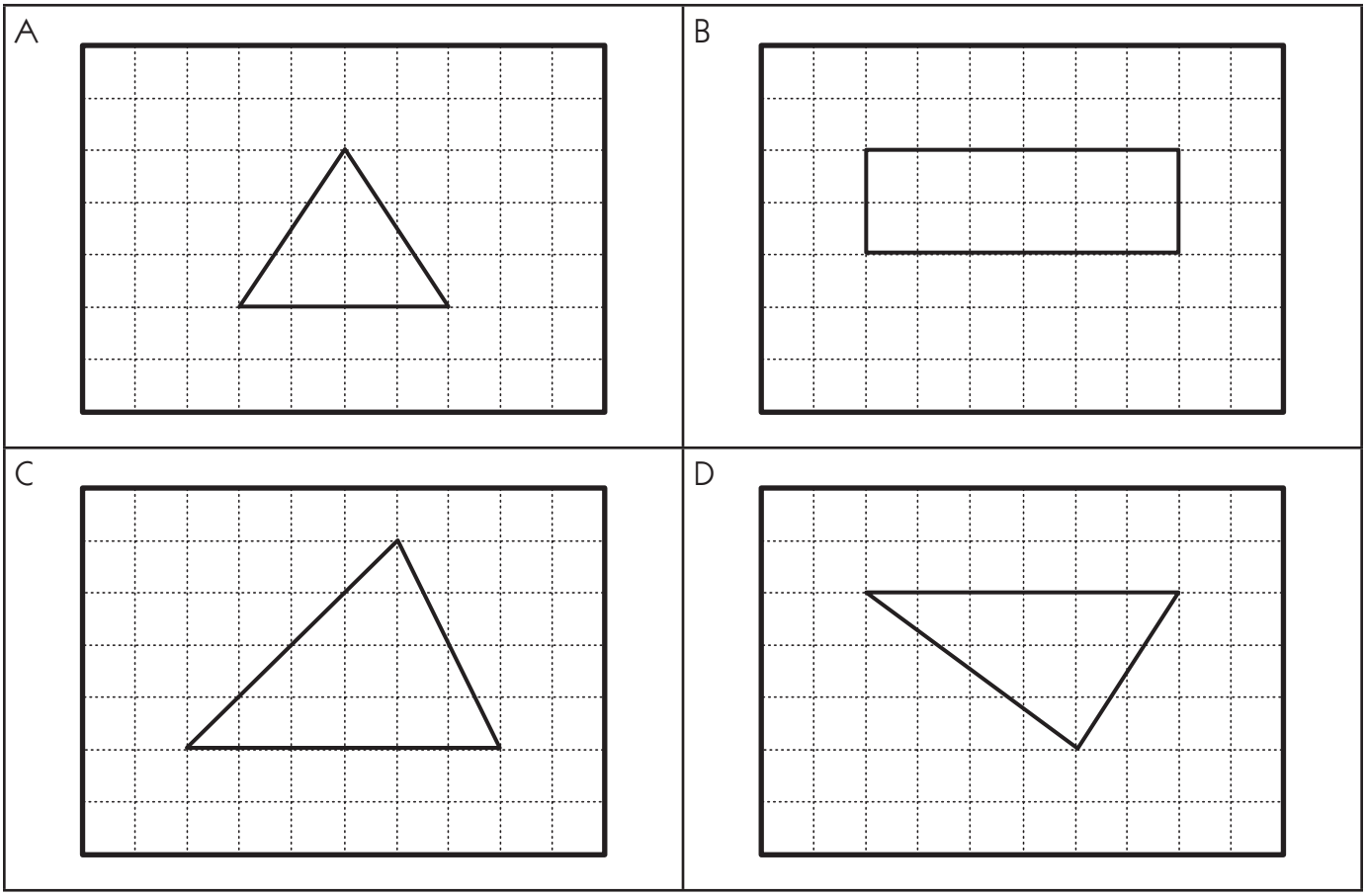
Base _____ Height _____

Area _____

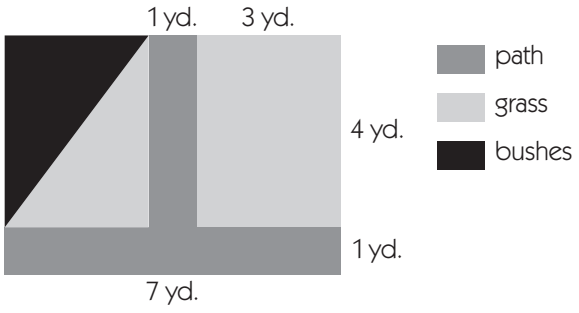
NAME _____ **DATE** _____

More Area Problems

1 Which two figures have exactly the same area? Show your work. _____ and _____



2a This is a map of Mrs. Jackson's backyard. If there are 18 square yards of grass, how many square yards of bushes are there in her backyard?



b Remember that there are 3 feet in a yard. How many *square feet* of bushes are there in Mrs. Jackson's backyard?

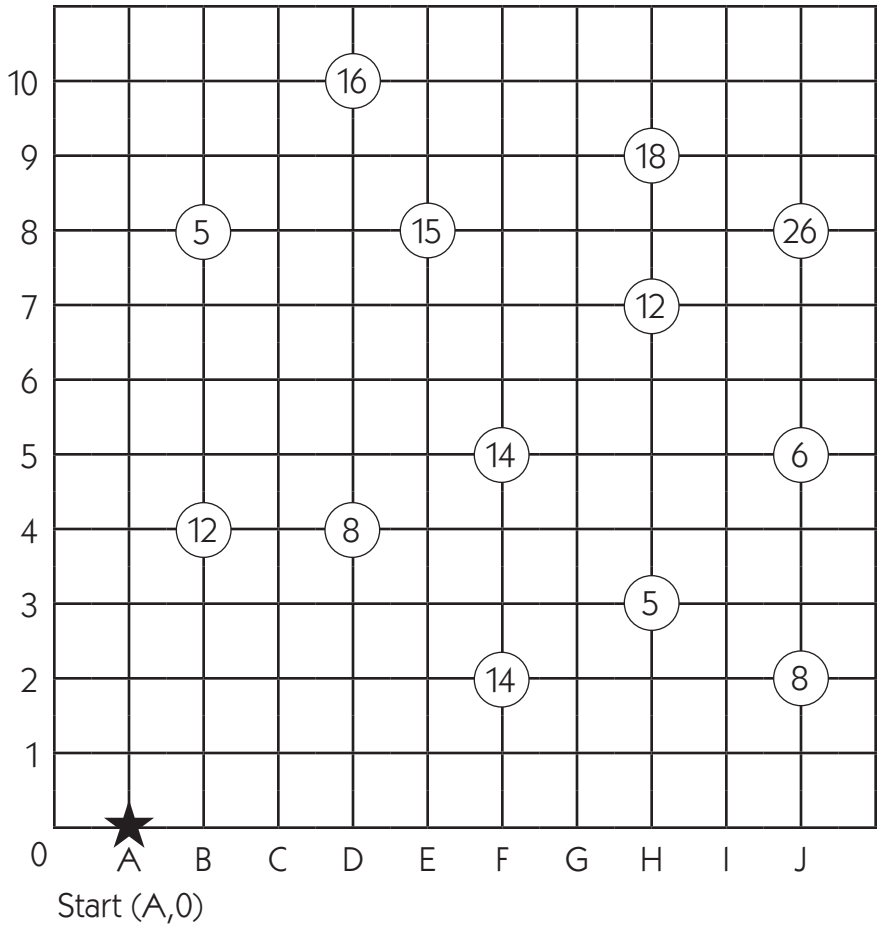
NAME _____ **DATE** _____

Rita's Robot

1 Pirate Rita built a robot to go out and collect treasure for her. She needs to program the robot so it knows where to go on the map.

The robot can only collect 90 gold coins before it has to come back, and it can only travel along the grid lines (not on the diagonals). It can travel only 30 spaces before it runs out of fuel.

Help Pirate Rita program the robot to collect as much treasure as it can carry and return to the starting point before it runs out of fuel. Draw on the map at right, and keep track of the robot's moves on the table below.



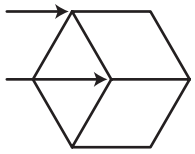
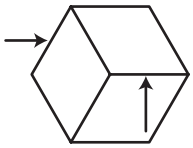
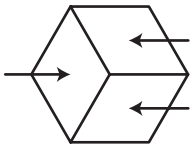
Destination Coordinates	Spaces Moved	Running Total of Spaces Moved	Coins Collected	Running Total of Coins Collected

NAME _____ **DATE** _____

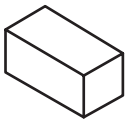
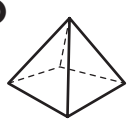
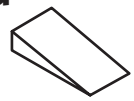
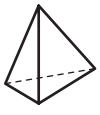
Faces, Edges & Vertices

1 Use each word one time to show what part of the cube the arrows are pointing to in each picture.

edges faces vertices

a _____ 	**b** _____ 	**c** _____ 

2 Fill in the table to describe and name each three-dimensional figure.

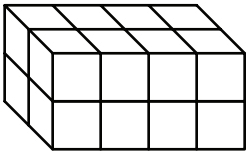
	Faces	Edges	Vertices	Shape Name
ex 	6	12	8	cube
a 				
b 				
c 				
d 				
e 				
f 				

NAME _____ **DATE** _____

Surface Area & Volume

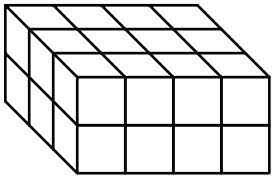
1 Each figure below is built out of centimeter cubes. Find the surface area and volume of each one.

ex



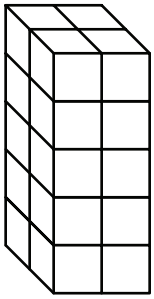
Surface Area	Volume
2 x 2 x 2 = 8 4 x 2 x 4 = 32 8 + 32 = 40 sq. cm.	2 x 2 x 4 = 16 cubic cm.

a



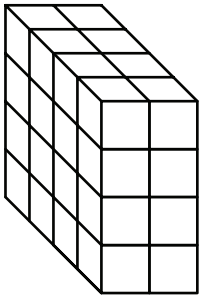
Surface Area	Volume

b



Surface Area	Volume

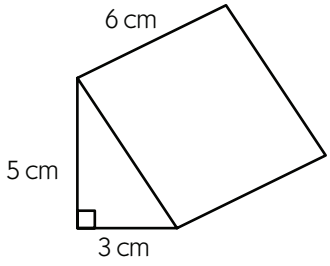
c



Surface Area	Volume

CHALLENGE

2 Find the volume of this triangular prism.



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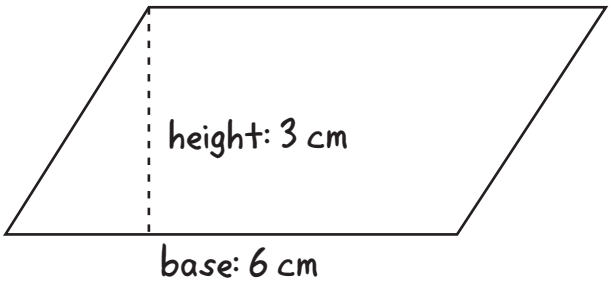
Measuring to Find the Area

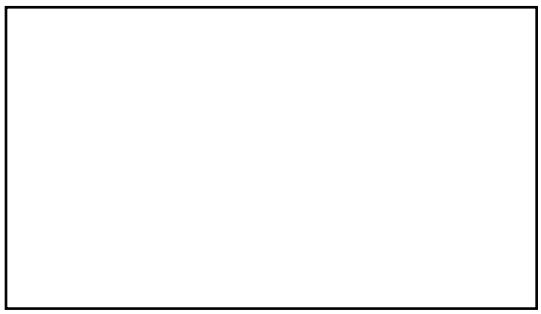
1 Use the centimeter side of a ruler to measure the height and base of each figure. Label them and then find the area.

ex



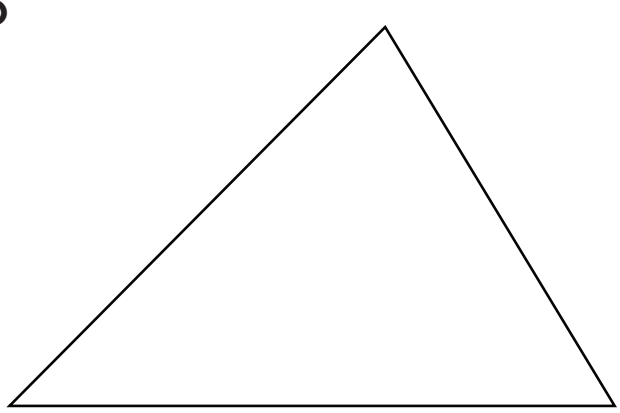
Area 3 cm x 6 cm = 18 sq. cm

a



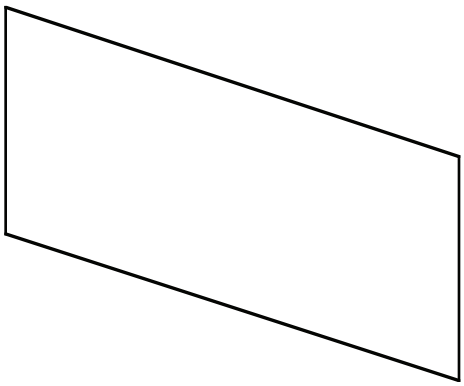
Area _____

b



Area _____

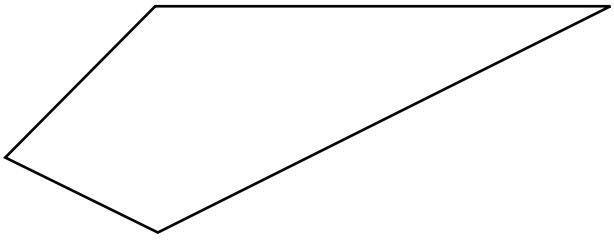
c



Area _____

CHALLENGE

2 Measure parts of this figure and then find the area. You might want to divide it into pieces.



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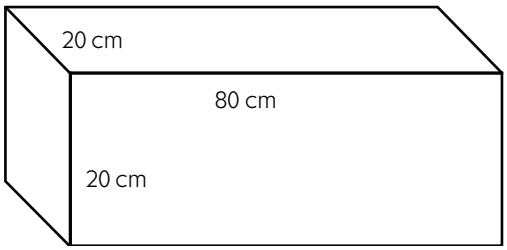
Volume & Surface Area of Rectangular & Triangular Prisms

Find the volume and surface area of each prism below.

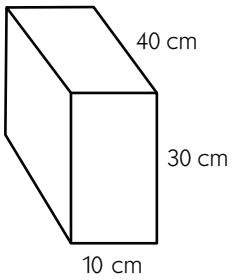
1



Volume: _____

Surface Area: _____

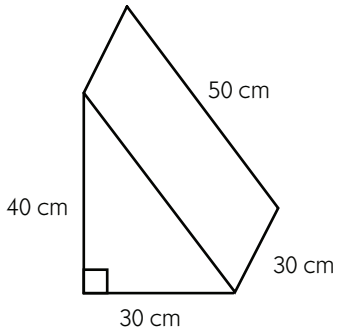
2



Volume: _____

Surface Area: _____

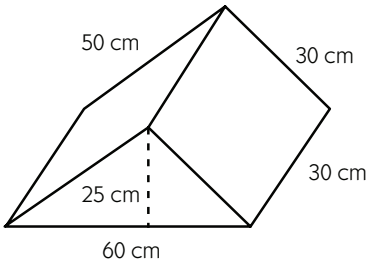
3



Volume: _____

Surface Area: _____

4



Volume: _____

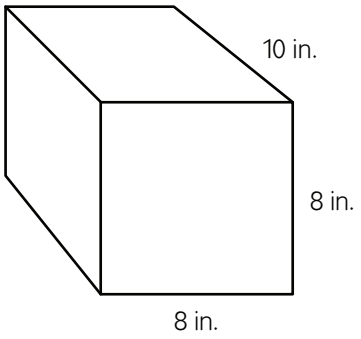
Surface Area: _____

NAME _____ **DATE** _____

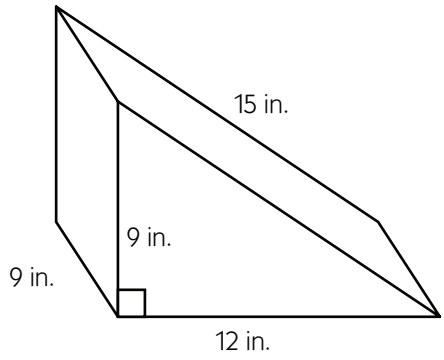
Surface Area & Volume Story Problems

1 Jerome is wrapping these two presents for his mom's birthday. Which one will it take more wrapping paper to cover? Show all your work.

Present A

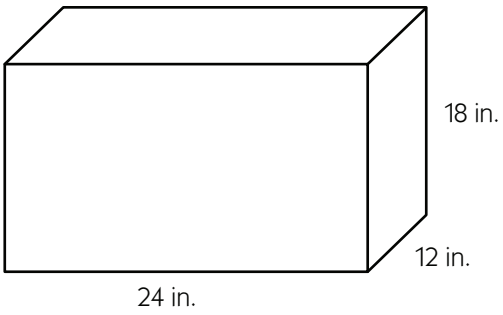


Present B

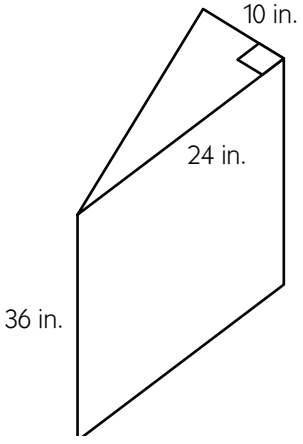


2 Lucy is thinking about buying a fish tank. She likes this traditional fish tank and one shaped like a triangular prism that fits in the corner. Which one holds more water? Show all your work.

Tank A



Tank B



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Multiplication & Division Tables

1 Complete the following multiplication tables.

a

×	2	6	4	9	7	5	8	3
10	20							

b

×	2	6	4	9	7	5	8	3
5	10							

2 Complete the following division tables.

a

÷	20	90	60	50	80	70	40	30
10	2							

b

÷	20	90	60	50	80	70	40	30
5	4							

3 Look carefully at the multiplication and division tables above. What patterns do you notice?

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Using Basic Fact Strategies to Multiply Larger Numbers

Thinking about basic fact strategies and relationships between facts can help you multiply larger numbers too.

To multiply by	Strategy	Example	
3	Double the number and add 1 more of that number.	3 × 16	2 × 16 = 32 32 + 16 = 48
5	Think of the number times 10. Then cut it in half.	5 × 16	10 × 16 = 160 160 ÷ 2 = 80
20	Think of the number times 10. Then double it.	20 × 16	10 × 16 = 160 160 + 160 = 320
30	Think of the number times 10. Double it. Then add them together.	30 × 16	10 × 16 = 160 160 + 160 = 320 320 + 160 = 480
15	Think of the number times 10. Cut it in half. Then add them together.	15 × 16	10 × 16 = 160 160 ÷ 2 = 80 160 + 80 = 240

1 Complete the multiplication problems below. Use problems you have already solved to help solve other ones.

a 24 × 1 = _____	**b** 32 × 1 = _____	**c** 17 × 1 = _____
24 × 2 = _____	32 × 2 = _____	17 × 2 = _____
24 × 3 = _____	32 × 3 = _____	17 × 3 = _____
24 × 10 = _____	32 × 10 = _____	17 × 10 = _____
24 × 5 = _____	32 × 5 = _____	17 × 5 = _____
24 × 20 = _____	32 × 20 = _____	17 × 20 = _____
24 × 30 = _____	32 × 30 = _____	17 × 30 = _____
24 × 15 = _____	32 × 15 = _____	17 × 15 = _____

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Multiplication Problems & Mazes

1 Complete the multiplication problems below. Use problems you have already solved to help solve other ones.

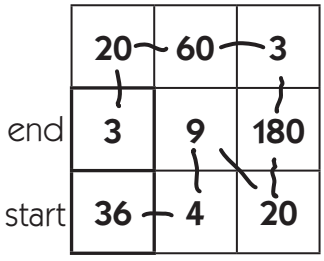
a	**b**	**c**
18 × 2 = _____	23 × 2 = _____	34 × 2 = _____
18 × 3 = _____	23 × 3 = _____	34 × 3 = _____
18 × 10 = _____	23 × 10 = _____	34 × 10 = _____
18 × 5 = _____	23 × 5 = _____	34 × 5 = _____

2 Use the problems above to write three more combinations for each number. Show as much work as you need to find each product.

a	**b**	**c**
18 × 13 = 180 + 54 = 234	23 × _____ = _____	34 × _____ = _____
18 × _____ = _____	23 × _____ = _____	34 × _____ = _____
18 × _____ = _____	23 × _____ = _____	34 × _____ = _____

3 Use multiplication and division to find the secret path through each maze. The starting and ending points are marked for you. You can only move one space up, down, over, or diagonally each time. Write four equations to explain the path through the maze.

ex



36 ÷ 4 = 9
9 × 20 = 180
180 ÷ 3 = 60
60 ÷ 20 = 3

a

			start
	4	60	240
end	5	30	120
	4	20	6

b

end			start
	5	420	6
	6	70	40
	30	8	240

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More Division Story Problems

1 A group of migrating geese travels at about 40 miles per hour. About how many hours of flying will it take them to go 320 miles? Show all your work.

2 Ellie is reading a book that is 257 pages long. If she reads 30 pages every day, how many days will it take her to read the whole book? Show all your work.

3 Paulo made some candies that he is going to sell at the market. He is putting 20 candies in a bag. If he has 187 candies altogether, how many bags can he fill? Show all your work.

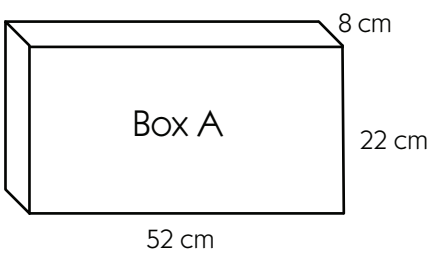
CHALLENGE

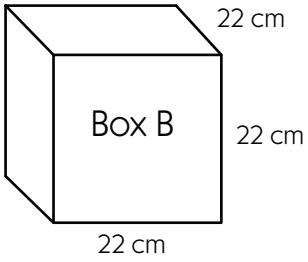
4 A group of robins took 78 days to fly 3,000 miles. On average, about how many miles did the robins fly each day? Explain why your estimate is reasonable.

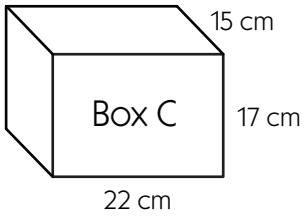
NAME _____ **DATE** _____

Which Box Holds the Most?

1 Ebony's cousin Jada is away at college this year. Ebony wants to send her a package with some candy in it. She has the three boxes shown below. Which box should she use if she wants to send Jada as much candy as possible?







a What do you need to know about the boxes in order to answer the question above?

b Solve the problem. Show all your work.

2 Ebony wants to wrap the box in paper before she sends it to Jada. What is the surface area of the box you chose above? Show all your work.

NAME _____ **DATE** _____

Using Multiplication Menus to Solve Division Problems

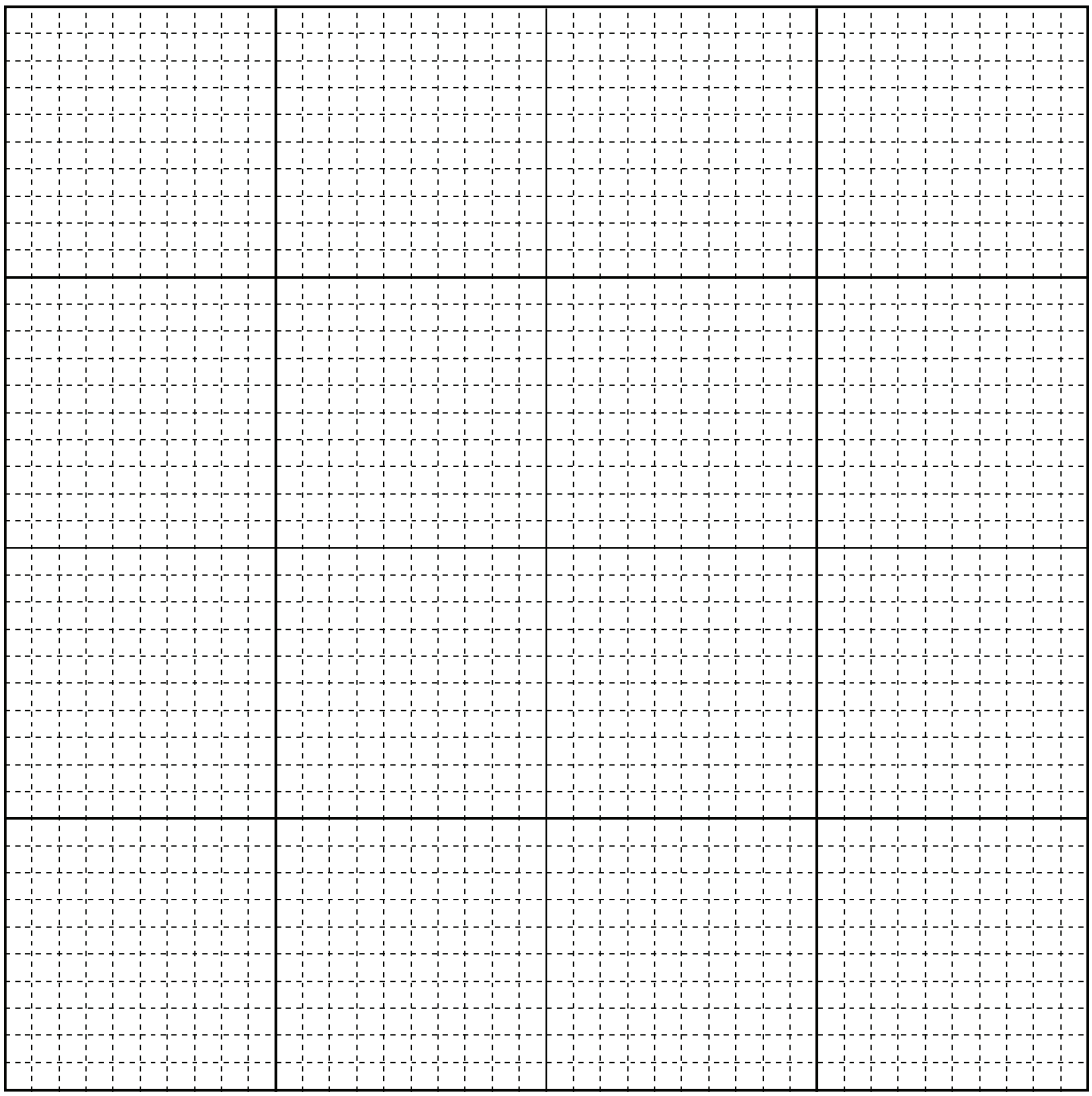
1 Fill in the mutiplication menu.

a 1 × 16 = _____ **b** 2 × 16 = _____ **c** 10 × 16 = _____

d 5 × 16 = _____ **e** 20 × 16 = _____ **f** 15 × 16 = _____

2 Solve the two division problems. Use the menu above and the grid below to help. You can add to the menu if you want to.

a 288 ÷ 16 = _____ **b** 464 ÷ 16 = _____



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Divisibility Rules

It's easy to tell if a small number like 12 is divisible by another number. With bigger numbers, like 435, it can be harder to tell. You already know how to tell if a number is divisible by 2, 5, or 10. There are also rules that can help you tell if any number is divisible by 3, 6, or 9.

Rule	Example
A number is divisible by 3 if the sum of its digits is divisible by 3.	957 is divisible by 3 because 9 + 5 + 7 = 21 and 21 is divisible by 3. (21 ÷ 3 = 7)
A number is divisible by 6 if it is divisible by 3 (see above) and it is divisible by 2 (has a 0, 2, 4 6, or 8 in the ones place).	786 is divisible by 6 because 7 + 8 + 6 = 21 and 21 is divisible by 3. (21 ÷ 3 = 7) 786 also ends in 6, which means it is even (divisible by 2).
A number is divisible by 9 if the sum of its digits is divisible by 9.	837 is divisible by 9 because 8 + 3 + 7 = 18 and 18 is divisible by 9.

1 Use the chart below to help you figure out if the numbers are divisible by 3, 6, or 9. In the last column, you don't have to list all the factors of the number. Just list any other numbers you know for sure that the number is divisible by.

Number	Sum of the Digits	Divisible by 3?	Divisible by 6?	Divisible by 9?	It's also divisible by
ex 495	4 + 9 + 5 = 18	yes	no	yes	5
a 987					
b 540					
c 762					
d 747					
e 570					
f 645					
g 792					

NAME _____ **DATE** _____

Division with Menus & Sketches

1 Fill in the mutiplication menu.

a 1 × 19 = _____ **b** 2 × 19 = _____ **c** 10 × 19 = _____

d 5 × 19 = _____ **e** 20 × 19 = _____ **f** 15 × 19 = _____

2 Solve the two division problems using the menu above and sketches to help. You can add to the menu if you want to.

ex 304 ÷ 19 = 16	**a** 608 ÷ 19 = _____	**b** 456 ÷ 19 = _____
Computation: 1 5 ⌉ 16 10 19 ⌊ 304 - 190 114 - 95 19 - 19 0	Computation:	Computation:
Sketch: 10 5 1 19 190 95 19	Sketch:	Sketch:

3 If you need to, use the divisibility rules on page 67 to help answer these.

a Are any of the numbers above (304, 608, 456) divisible by 3? If so, list them here:

b Are any of the numbers above divisible by 6? If so, list them here:

c Are any of the numbers above divisible by 9? If so, list them here:

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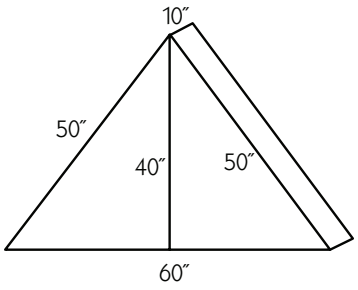
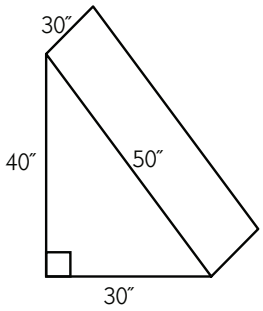
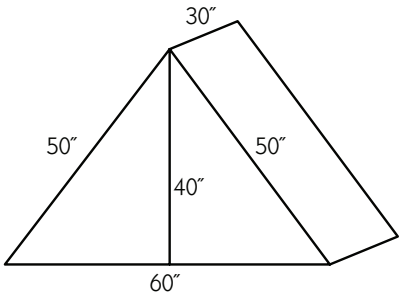
Francine's Piece of Wood

1 Francine has a piece of wood that is 18,000 cubic inches in volume. Circle the piece of wood below that could belong to Francine. Show all your work.







CHALLENGE

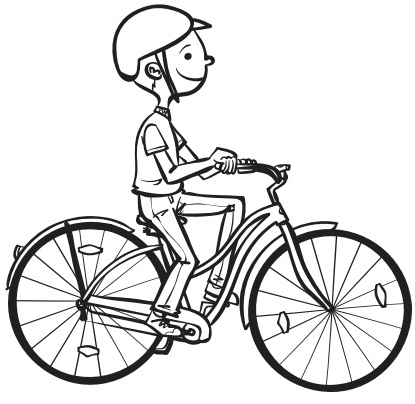
2 What is the surface area of the piece of wood you circled above? Show all your work. (Draw each of the five faces separately if you need to.)

NAME _____ **DATE** _____

Money & Miles

1 Mrs. DeLuca is buying CD's for her neices and nephews. Each CD costs $16. She has $164 to spend. How many CD's could she buy? Show all your work.

2 Mr. Henry wants to bike 351 miles this summer. If he starts on a Monday and does a route that is 13 miles every weekday, how many weeks will it take him to bike 351 miles? Show all your work.



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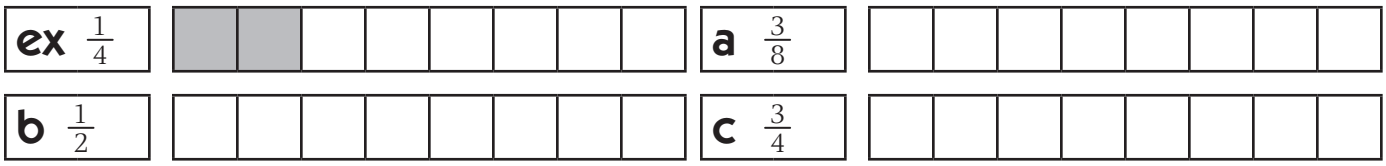
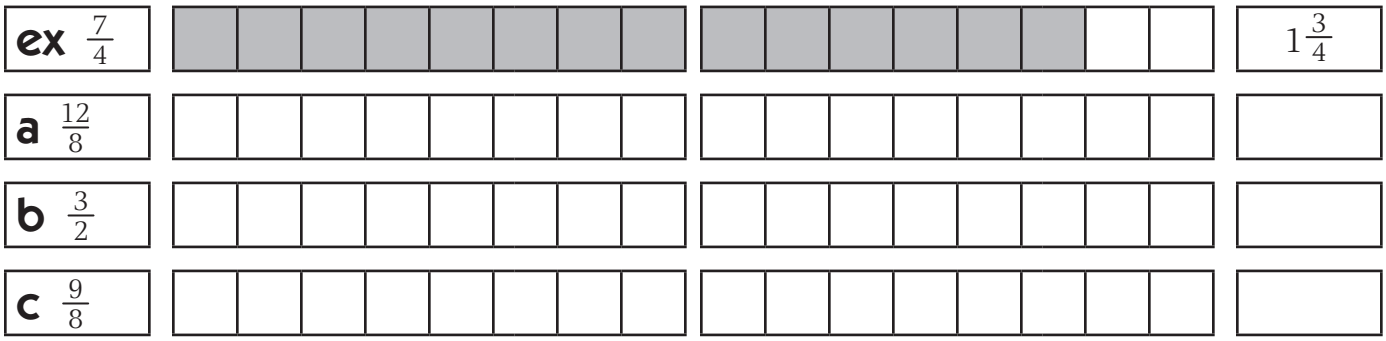
Fractions & Mixed Numbers

1 Color in the strips to show the fractions named below. Each strip represents 1 whole.



2 Color in the strips to show the improper fractions named below. Then write the fraction as a mixed number. Each strip represents 1 whole.



3 Explain how you can tell whether a fraction is greater than 1 just by looking at the numerator and denominator. A fraction is greater than 1 if:

CHALLENGE

4 A certain fraction is greater than 2. The denominator is 8. What must be true about the numerator? Explain you answer.

The numerator must be greater than _____ because:

$\frac{?}{8}$

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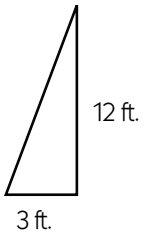
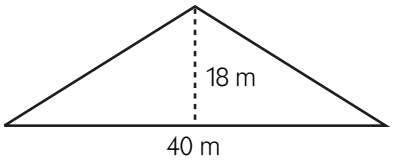
Triangles & Tents

1 Find the area of each triangle below. Show all of your work.

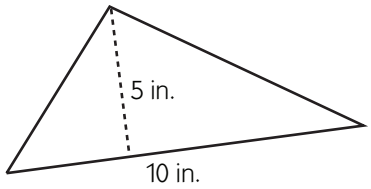
a



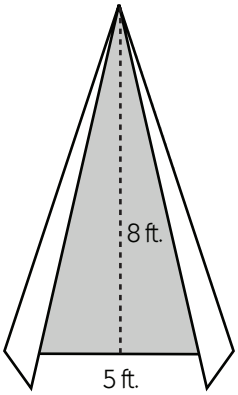
b



c



2 Frank and Samantha are making a tent for their backyard. The tent will have three sides that are all triangles with a base of 5 feet and a height of 8 feet. How many square feet of fabric will they need? Show all of your work.



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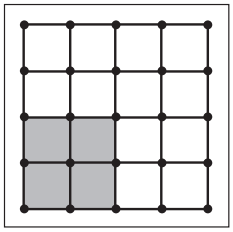
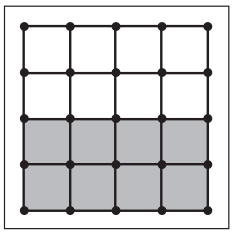
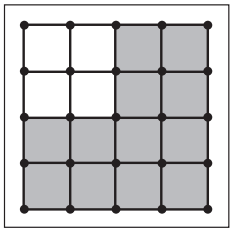
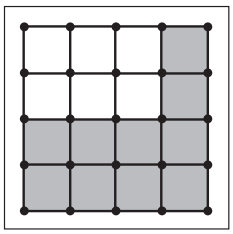
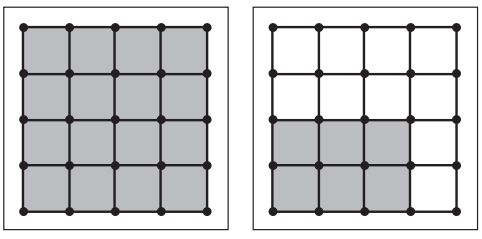
Equivalent Fractions on a Geoboard

Write as many names as you can for the fractions shown on the geoboards. Each geoboard represents 1 whole. Then use >, <, or = to compare the fraction shown to the other fraction named.

Fraction	Fraction Names	Comparison
ex 	$\frac{1}{4}$ $\frac{2}{8}$ $\frac{4}{16}$	$\frac{4}{16} < \frac{1}{2}$
1 		$\frac{5}{8}$
2 		$\frac{1}{2}$
3 		$\frac{3}{4}$
4 		$1\frac{1}{2}$

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Metric Length, Area & Volume

1a How many meters are in 1 kilometer?

b How many meters are in 3 kilometers?

2 Our school's swimming pool is 25 meters long. If our coach wants us to swim 3 kilometers, how many laps will we need to do? (A lap is two lengths of the pool.) Show all your work.

3 The distance around our school's playing field is 300 meters. If our coach wants us to run 3 kilometers, how many times will we need to run around the field?

CHALLENGE

4a How many centimeters are there in 1 meter?

b How many square centimeters are in 1 square meter?

c How many cubic centimeters are in 1 cubic meter?

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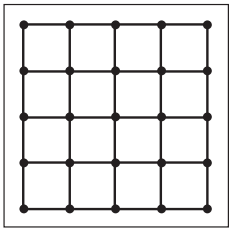
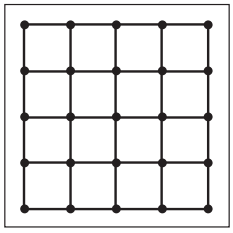
Comparing Fractions

1 Color in the geoboards to show the fractions below. Each geoboard represents 1 whole.

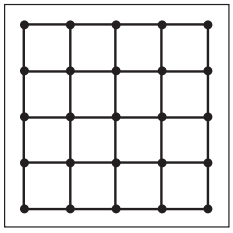
a $\frac{1}{2}$



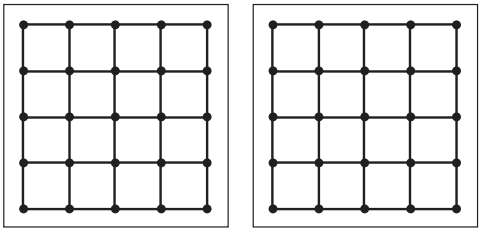
b $\frac{1}{4}$



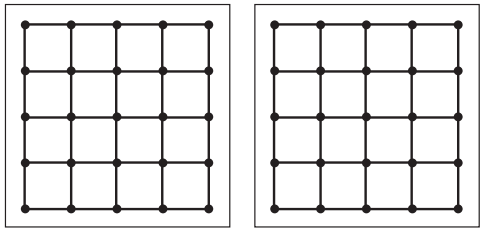
c $\frac{3}{8}$



d $\frac{10}{8}$

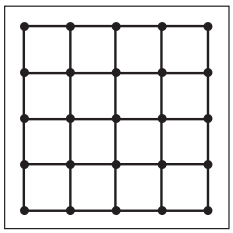


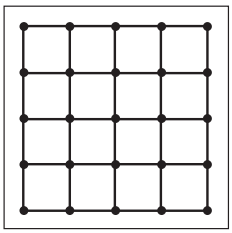
e $\frac{6}{4}$

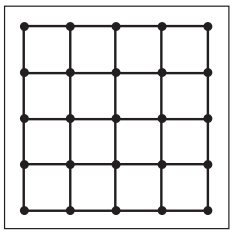


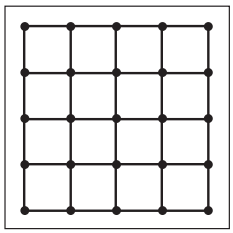
2 Use the pictures above and the empty geoboards below to help complete each comparison below using <, >, or =.

ex $\frac{1}{2} > \frac{3}{8}$	**a** $\frac{6}{4}$ $1\frac{1}{2}$	**b** $\frac{3}{8}$ $\frac{3}{4}$
c $\frac{10}{8}$ $1\frac{1}{2}$	**d** $\frac{6}{8}$ $\frac{6}{4}$	**e** $\frac{3}{8}$ $\frac{1}{4}$









CHALLENGE

3 Fill in the missing numerators and denominators to make each comparison true.

a $\frac{\square}{9} > \frac{4}{2}$ **b** $\frac{1}{4} = \frac{6}{\square}$ **c** $\frac{16}{32} < \frac{\square}{8}$

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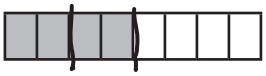
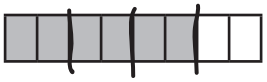
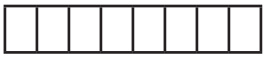
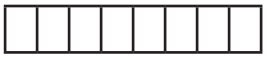
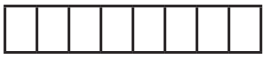
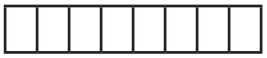
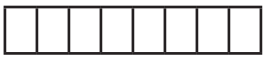
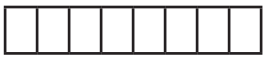
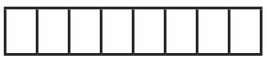
Adding Fractions

1 Show the fractions on the strips. Then add them and report the sum.

First	Second	Add Them	Sum
ex $\frac{2}{4}$ 	$\frac{3}{4}$ 		$1\frac{1}{4}$
a $\frac{3}{4}$ 	$\frac{3}{4}$ 		
b $\frac{3}{8}$ 	$\frac{1}{2}$ 		
c $\frac{5}{8}$ 	$\frac{3}{4}$ 		
d $\frac{1}{2}$ 	$\frac{7}{8}$ 		

2 If you are adding two fractions that are both greater than $\frac{1}{2}$, what must be true about the sum? The sum must be:

3 If you are adding two fractions that are both less than $\frac{1}{2}$, what must be true about the sum? The sum must be:

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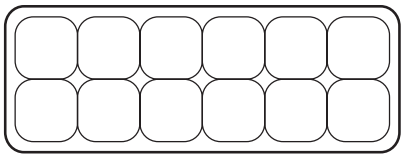
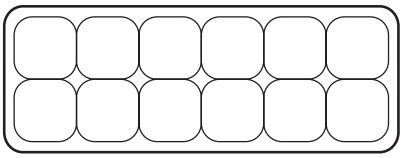
Egg Carton Fractions

1 Show the fractions on the egg cartons. Each carton represents 1 whole.

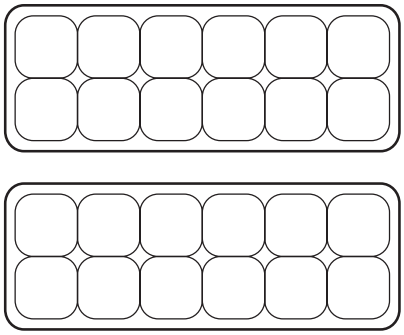
a $\frac{1}{2}$



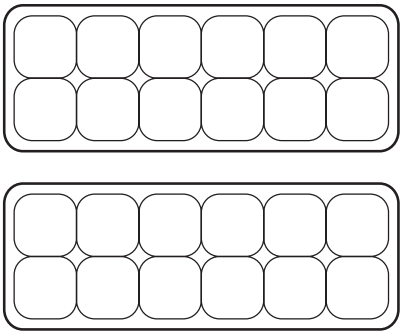
b $\frac{3}{4}$



c $1\frac{2}{3}$

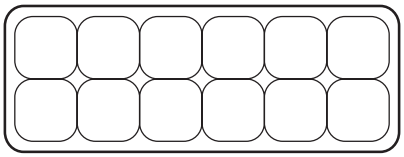


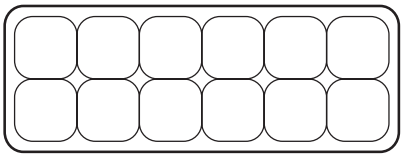
d $\frac{9}{6}$



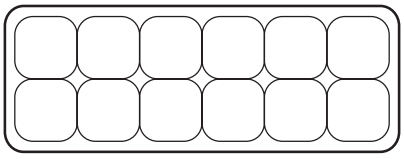
2 Add the fractions below. If the sum is greater than 1, write it as a mixed number.

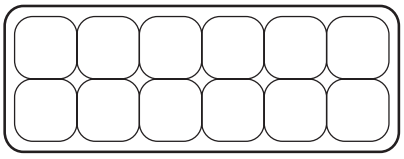
a $\frac{5}{6} + \frac{1}{2} =$



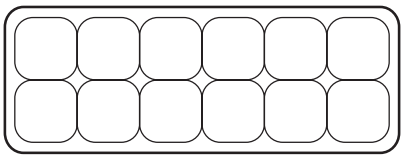


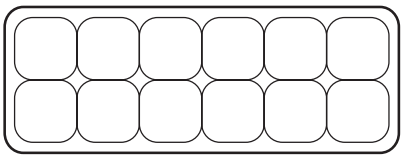
b $\frac{2}{3} + \frac{3}{6} =$





c $\frac{13}{12} + \frac{3}{4} =$





3 Use a <, >, or = sign to complete each number sentence.

a $\frac{6}{10} + \frac{11}{10}$ 1

b $\frac{11}{10} + \frac{7}{6}$ 2

c $\frac{1}{12} + \frac{3}{14}$ 1

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Fraction Story Problems

1 Marsha walked $1\frac{1}{2}$ miles to school yesterday morning. After school, she walked $\frac{3}{4}$ of a mile to her aunt's house. How many miles did she walk altogether yesterday? Show all your work.

2 Francisco and his mom got some fruit at the fruit stand yesterday. They bought $2\frac{1}{2}$ pounds of peaches, $\frac{7}{8}$ of a pound of raspberries, and $1\frac{1}{4}$ pounds of apricots. How many pounds of fruit did they buy altogether? Show all your work.

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Division & Fraction Practice

1 Use multiplication menus to help complete each division problem.

ex 307 ÷ 19 = 16 r3

19 × 10 = 190
19 × 5 = 95
19 × 2 = 38

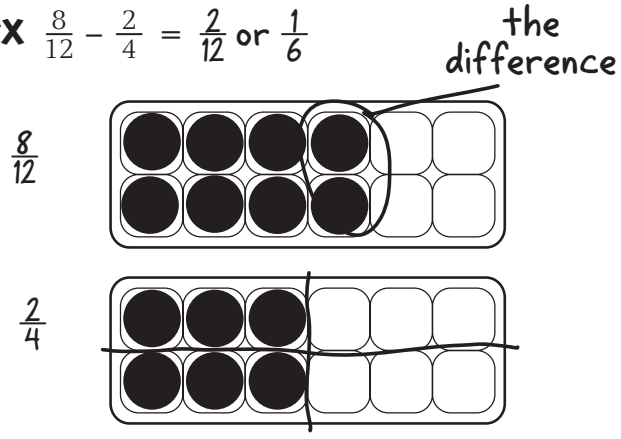
```
      1
      5   ] 16 r3
     10
19 ⌊307
   -190
    117
    -95
     22
    -19
      3
```

a 226 ÷ 13 = _____

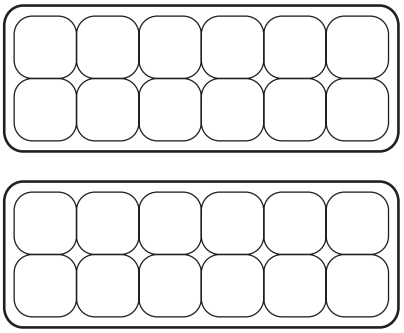
b 360 ÷ 16 = _____

2 Find the difference between each pair of fractions below.

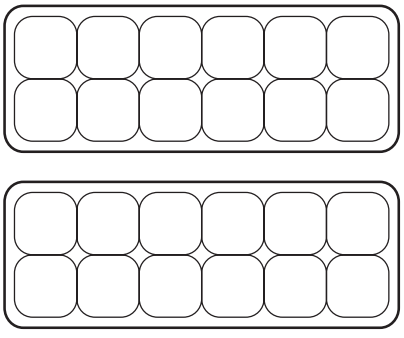
ex $\frac{8}{12} - \frac{2}{4} = \frac{2}{12}$ or $\frac{1}{6}$



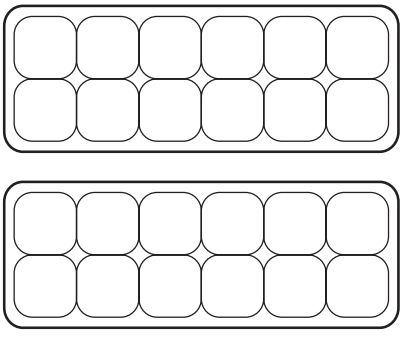
a $\frac{11}{12} - \frac{1}{4} =$



b $\frac{5}{6} - \frac{1}{3} =$



c $\frac{3}{4} - \frac{1}{6} =$



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More Fraction Story Problems

1 Yesterday Carson threw away $1\frac{1}{3}$ pounds of paper packaging. He threw away $\frac{3}{4}$ of a pound of plastic packaging. Altogether, how many pounds of packaging did Carson throw away yesterday? Show all your work.

2 Carmen ran $1\frac{3}{8}$ miles yesterday. Her sister Lola ran $2\frac{1}{4}$ miles yesterday. How much farther did Lola run than Carmen? Show all your work.

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Multiplication & Division Review

1 Complete the following multiplication tables.

a

×	2	9	6	5	7	20	40	30
60	120							

b

×	2	9	6	5	7	20	40	30
40	80							

2 Complete the following division table.

÷	1,200	900	60	210	1,500	1,800	270	2,400
30	40							

3 Solve these multiplication problems using the standard algorithm.

$$\begin{array}{r} {\scriptstyle 1}\\ 84\\ \times\ 36\\ \hline {\scriptstyle 1}\ 504\\ +\ 2{,}520\\ \hline 3{,}024 \end{array}$$

$$\begin{array}{r} 58\\ \times\ 27\\ \hline \end{array}$$

$$\begin{array}{r} 451\\ \times\ 32\\ \hline \end{array}$$

$$\begin{array}{r} 256\\ \times\ 33\\ \hline \end{array}$$

$$\begin{array}{r} 177\\ \times\ 49\\ \hline \end{array}$$

$$\begin{array}{r} 305\\ \times\ 64\\ \hline \end{array}$$

$$\begin{array}{r} 573\\ \times\ 26\\ \hline \end{array}$$

$$\begin{array}{r} 837\\ \times\ 86\\ \hline \end{array}$$

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Thinking About Divisibility

It's easy to tell if a small number like 12 is divisible by another number. With bigger numbers, like 435, it can be harder to tell. Fill in the rules for knowing if a certain number is divisible by 5 or 10. Then figure out which numbers are divisible by each number.

Rule	Circle the numbers that are divisible by the number whose rule you just described.
ex a Finish the rule: A number is divisible by 2 if... there is 0, 2, 4, 6, or 8 in the ones place.	**b** 431 (126) (902) 463 4,595 (3,008)
1 A number is divisible by 3 if the sum of its digits is divisible by 3.	**a** 117 409 423 6,151 3,213
2a Finish the rule: A number is divisible by 5 if...	**b** 205 452 600 2,365 7,004
3 A number is divisible by 6 if the sum of its digits is divisible by 3 and it is even.	**a** 132 270 588 2,706 3,512
4 A number is divisible by 9 if the sum of its digits is divisible by 9.	**a** 225 324 965 1,809 2,584
5a Finish the rule: A number is divisible by 10 if...	**b** 208 700 810 2,304 8,430

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Products & Secret Paths

1 Circle the two numbers whose product is shown. Hint: *Use estimation to help.*

Product	Circle the two numbers that multiply to make the product.				Use this space for work if you need to.
ex 1,196	12	(23)	(52)	83	Estimates: 12 × 83 (800) 52 × 83 (4000) 12 × 23 (200) (23 × 52 (1000))
a 714	14	22	42	51	
b 1,008	14	24	42	58	
c 2,211	21	33	51	67	
d 2,730	15	42	65	82	

2 Use multiplication and division to find the secret path through each maze. The starting and ending points are marked for you. You can only move one space up, down, over, or diagonally each time. Write four equations to explain the path through the maze.

ex

	20	60	3
end	3	9	180
start	36	4	20

36 ÷ 4 = 9
9 × 20 = 180
180 ÷ 3 = 60
60 ÷ 20 = 3

a

end		start
4	40	160
10	80	2
10	100	50

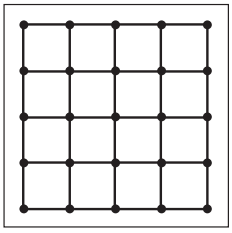
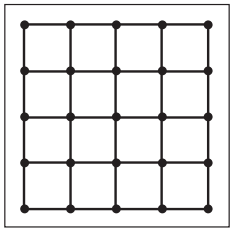
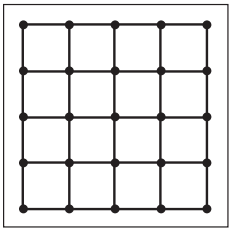
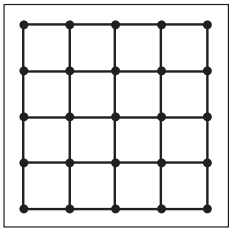
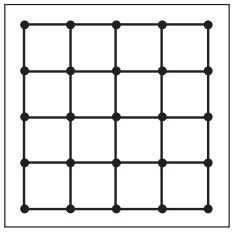
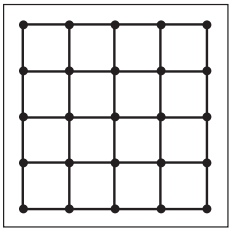
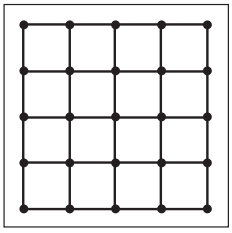
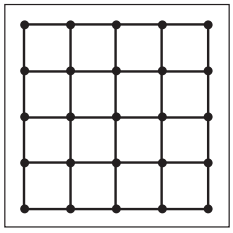
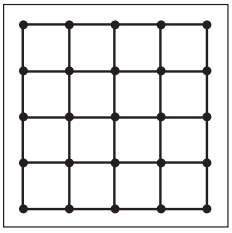
b

end		start
14	540	9
7	60	3
2	90	180

NAME _____ **DATE** _____

Coloring & Comparing Fractions

1 Color in the geoboards to show the fractions below. Each geoboard represents 1 whole.

a $\frac{1}{2}$ 	**b** $\frac{1}{4}$ 	**c** $\frac{3}{4}$ 
d $\frac{1}{8}$ 	**e** $\frac{2}{8}$ 	**f** $\frac{5}{8}$ 
g $\frac{1}{16}$ 	**h** $\frac{3}{16}$ 	**i** $\frac{9}{16}$ 

2 Use the pictures above to help complete each comparison below using <, >, or =.

ex $\frac{1}{2} < \frac{5}{8}$	**a** $\frac{1}{4}$ $\frac{2}{8}$	**b** $\frac{3}{4}$ $\frac{5}{8}$
c $\frac{3}{16}$ $\frac{1}{4}$	**d** $\frac{1}{2}$ $\frac{9}{16}$	**e** $\frac{5}{8}$ $\frac{9}{16}$

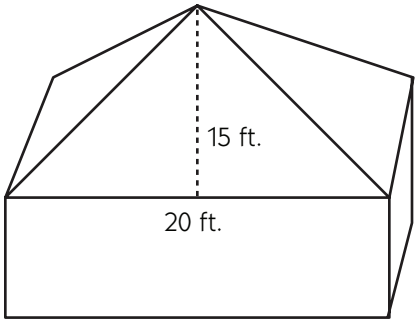
3 Use what you know about fractions to help complete each comparison below using <, >, or =.

a $\frac{1}{2}$ $\frac{9}{12}$	**b** $\frac{1}{4}$ $\frac{3}{24}$	**c** $\frac{9}{18}$ $\frac{1}{2}$

NAME _____ **DATE** _____

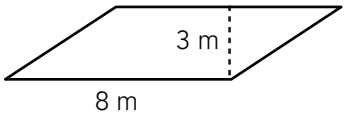
The Garage Roof & The Parking Lot

1 The roof of our garage is made up of 4 identical triangles that are 20 feet wide at the base and 15 feet tall. How many square feet is the roof altogether? Show all of your work.

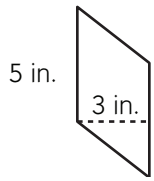


2 Find the area of each parallelogram below.

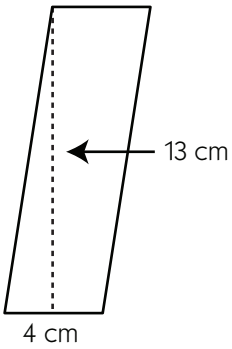
a



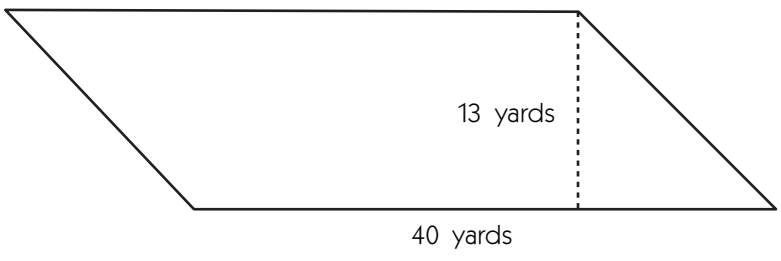
b



c



3 The parking lot at our school is shaped like a parallelogram. Its dimensions are shown below. How many square yards does the parking lot cover? Show all of your work.



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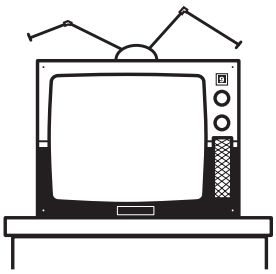
Time Problems

1 Ms. Wilson wants to spend 15 minutes conferencing with each student in her class about their writing assignment. She has 30 minutes before school starts, 30 minutes after school ends, and one 45-minute study hall during the day. If she meets with students during all of those times, how many days will it take her to meet with her 30 students? Show all your work.

2 Rhonda spends half an hour watching TV each weeknight and 2 hours each day on the weekends. How much time does she spend watching TV each week? Show all your work.

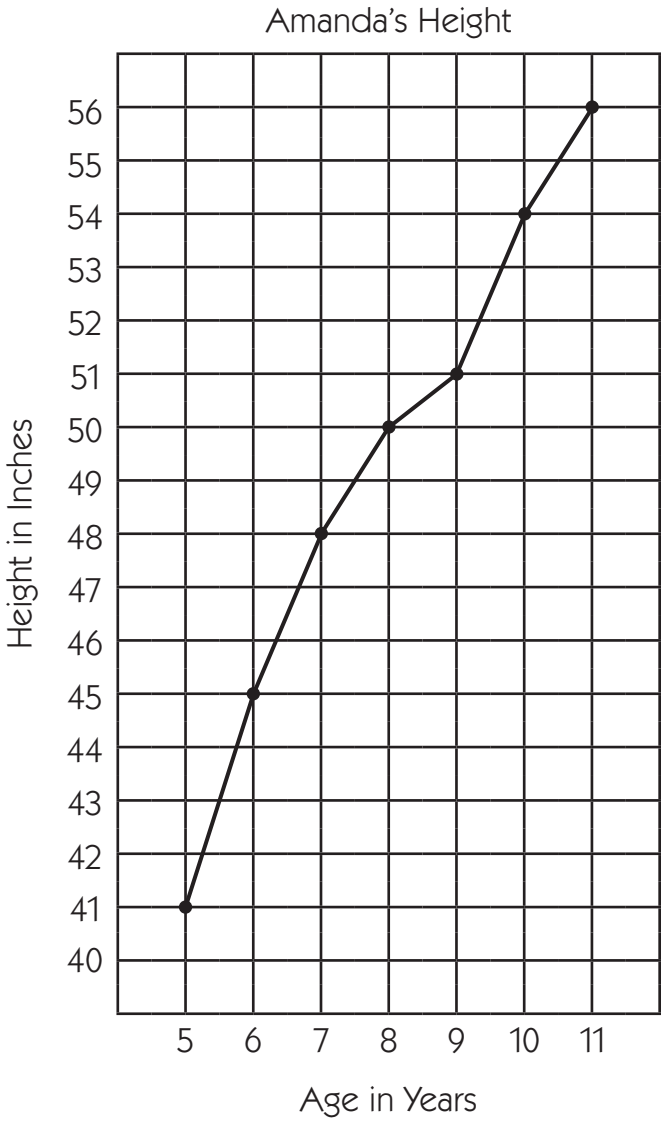


3 Frank is supposed to practice his violin for at least 6 hours a week. He played for 30 minutes on Monday, for an hour on Wednesday and on Friday, and for 45 minutes on Thursday. He didn't play at all on Tuesday. How much does he need to practice this weekend to make it at least 6 hours of practicing this week? Show all your work.

NAME _____ **DATE** _____

Amanda's Height Graph

Amanda's grandmother has been measuring Amanda's height every year on her birthday since she turned 5. The results are shown on the line graph at right.



1 Has Amanda been getting taller or shorter? How do you know?

2 Between what two ages did Amanda grow the least?

3 Did Amanda grow the same amount each year? How do you know?

4 At about what age do you think Amanda will be at least five feet tall? Use evidence from the graph to explain your answer.

5 How do you think the graph would look different if it went from age 5 to age 25?

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Kurt's Height Graph

Amanda has a baby brother named Kurt. Her grandma also keeps track of Kurt's height, but she measures him every six months. The measurements are shown on the table below.

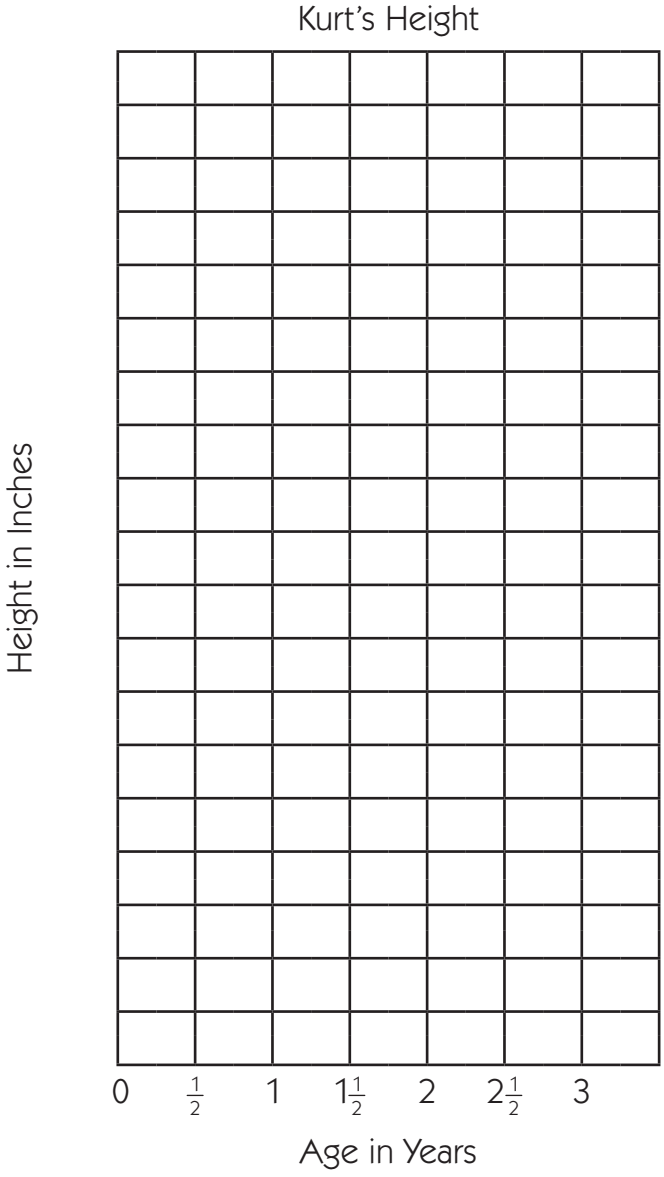
Age	birth (0)	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Height (in inches)	20	25	30	32	34	36	37

1 Use this checklist to help create a line graph with the data in the table.

a Number the *y*-axis.

b Plot the 7 data points.

c Connect the data points.



2 What do you notice about the way Kurt has grown in his first three years? Write at least 3 different observations.

3 Describe Kurt's growth to someone who has not seen this graph. Don't use numbers in your description.

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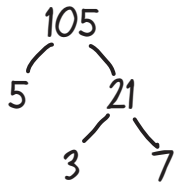
Prime Factorization Review

1 Show the prime factorization for each number. Then use the prime factors to help determine *all* the factors of that number.

Number	Prime Factorization	All the Factors (Think of factor pairs.)
ex 105		1, 105 3, 35 5, 21 7, 15
a 24		
b 48		
c 78		

2 What factors do 24, 48, and 78 have in common?

3 What is the *greatest* factor that 24, 48, and 78 have in common?

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Which Bag of Candy?

1 Whitney's 9 cousins are coming to visit and she wants to make them each a little gift bag. She wants to put an equal number of little candies in each bag, eat 3 candies herself, and have none leftover. Which bag of candies should she buy? Show all your work. Hint: *Can you remember a divisibility rule to help?*

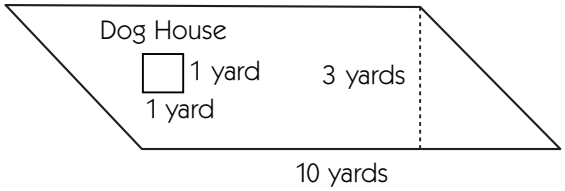
Candy	Number of Candies per Bag
Lemon Sours	147
Strawberry Kisses	216
Pineapple Sweets	193

2 How many candies will each cousin get? Show all your work.

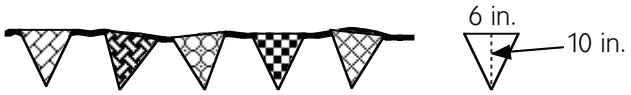
NAME _____ **DATE** _____

Square Inches, Square Feet & Square Yards

1a The grassy part of Jorge's lawn is a parallelogram with the dimensions shown below. Jorge has a doghouse on the lawn for his dog. How many square yards of grass are left for Jorge's family? Show all of your work.



2a Wanda and her brother George are making a banner of fabric triangles to decorate their house for a party. Each triangle is 10 inches long and 6 inches across at the base. If they use 30 triangles in their banner, how many square inches of fabric will they use? Show all of your work.



CHALLENGE

b How many square feet is that? Show all of your work.

CHALLENGE

b How many square feet is that? Show all of your work.

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The Frozen Yogurt Problem

1 The fourth and fifth graders are hosting a special night for their parents at school, and they want to serve frozen yogurt. Altogether there will be 95 students, 5 teachers, and 1 principal. Six students are not coming. Fifty-two students will bring 2 parents, and 43 students will bring 1 parent with them. Each tub of frozen yogurt serves 14 people. How many tubs of frozen yogurt will they need to have enough for everyone?

a Restate the question in your own words:

b Underline the information in the problem you *do* need to solve the problem.

c Cross out the information in the problem you *don't* need to solve the problem.

d Solve the problem. Show all your work.

e Does your answer make sense? Explain how you can tell.

NAME _____ **DATE** _____

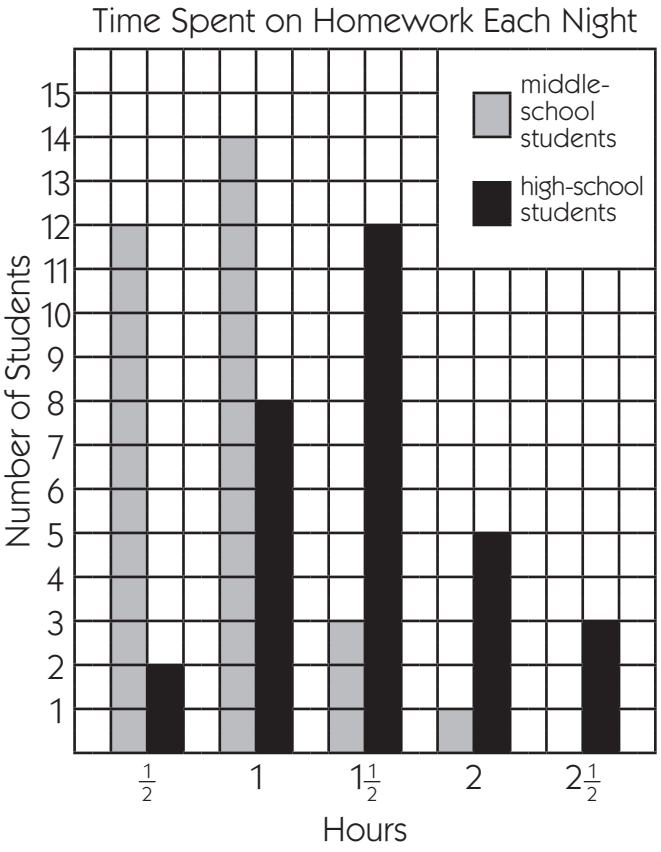
The Homework Survey

A group of teachers polled 30 middle-school and 30 high-school students to see how much time they were spending on homework each night.

1 How many middle-school students said they spent 1 hour on homework each night?

2 How many high-school students said they spent two and a half hours on homework each night?

3 How many high-school students said they spent 1 and a half hours on homework each night?



4 Overall, who spends more time on homework each night, middle-school or high-school students? Explain your answer using information from the graph above.

CHALLENGE

5 Is it easier to estimate how much time *any* middle-school student spends on homework each night or to estimate how much time *any* high-school student spends on homework each night? Explain your answer using information from the graph above.

NAME _____ **DATE** _____

The Fifth-Grade Reading Survey

Thirty fifth-graders took a survey about how much they read each week. Then each student asked one parent to report how much he or she reads each week. The results are shown on the table below.

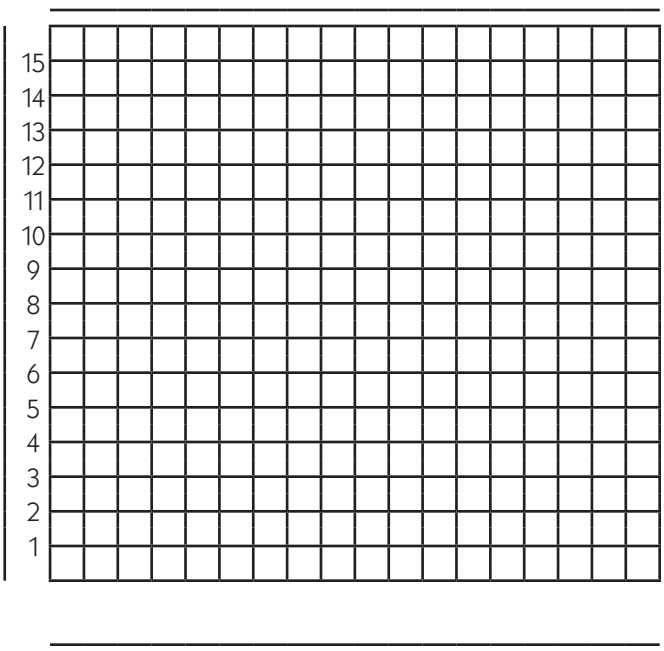
1 Write one thing you notice about the data.

Time Reading	Students	Parents
0 hrs.	0	4
$\frac{1}{2}$ hr.	2	10
1 hr.	3	13
$1\frac{1}{2}$ hrs.	14	0
2 hrs.	9	1
over 2 hrs.	2	2

2 Use this checklist to help create a double bar graph with the data in the table.

Legend
☐ student
☐ parents

a ____ Title the graph.
b ____ Label and mark the x-axis.
c ____ Label the y-axis.
d ____ Fill in data for students.
e ____ Fill in data for parents.
f ____ Complete the legend.



3 Write one new thing you notice about the data on the graph.

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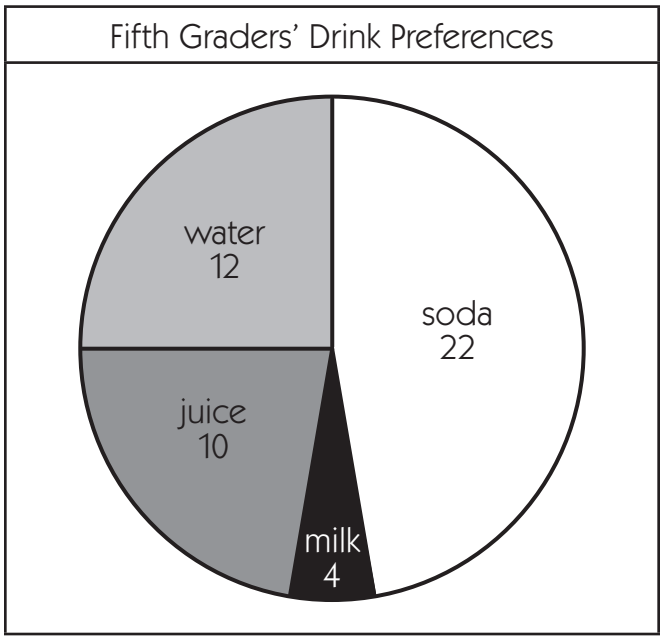
Reading & Interpreting a Circle Graph

The fifth graders were going to have a party. Their teachers wanted to see what kinds of drinks they would prefer, so they asked all 48 fifth graders what they like to drink at a party. The circle graph below shows the results.

1 Which kind of drink was the most popular?

2 Which kind of drink was the least popular?

3 Did more than half or less than half of the students prefer soda? Explain two ways you can tell by looking at the graph.



4 If the teachers decided not to serve soda, how many bottles of water, juice, and milk would you recommend they serve and why?

They should serve _____ bottles of water, _____ bottles of juice, and _____ cartons of milk. This is why:

NAME _____ **DATE** _____

Constructing & Interpreting a Circle Graph

The 5th grade teachers asked their students to pick which activity they like best at parties. The results are shown on the table below.

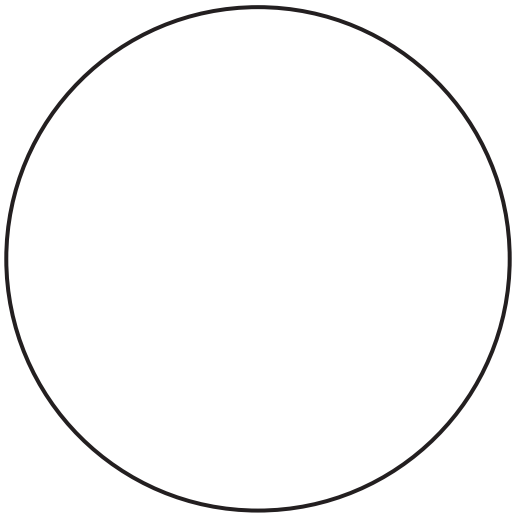
1 Write one thing you notice about the data.

Activity	Number of Students
Movie	16
Board Games	24
Craft Projects	8

2 Use the checklist below to show the data on a circle graph.

a ____ Divide the circle into the fractions you need. Hint: *Figure out what part of the whole group chose each activity.*
c ____ Label each piece with the activity name and the number of students who selected it.
b ____ Shade or color in each piece of the circle.
d ____ Title the graph.

Title:

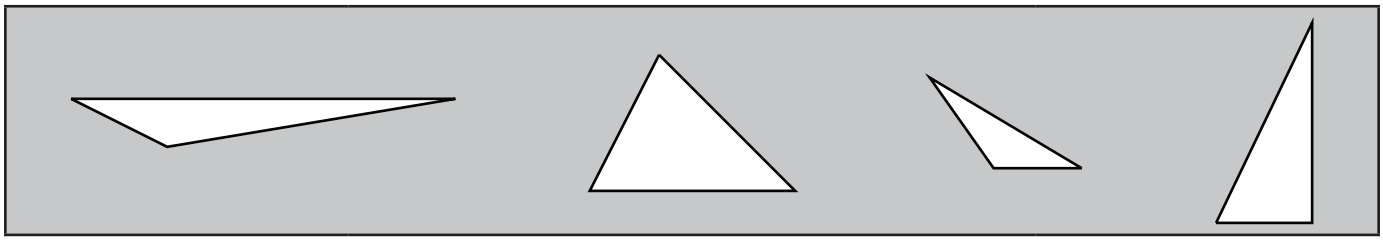


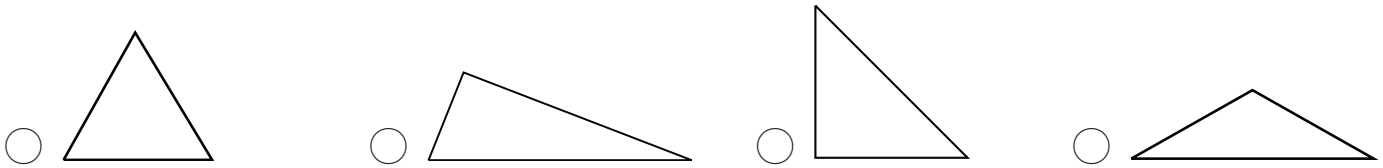
3 Write something new you notice about the data now that it is on the graph.

NAME _____ **DATE** _____

Classifying Triangles & Quadrilaterals

1a All of the triangles in the box have something in common. Fill in the circle next to the triangle that belongs with them.

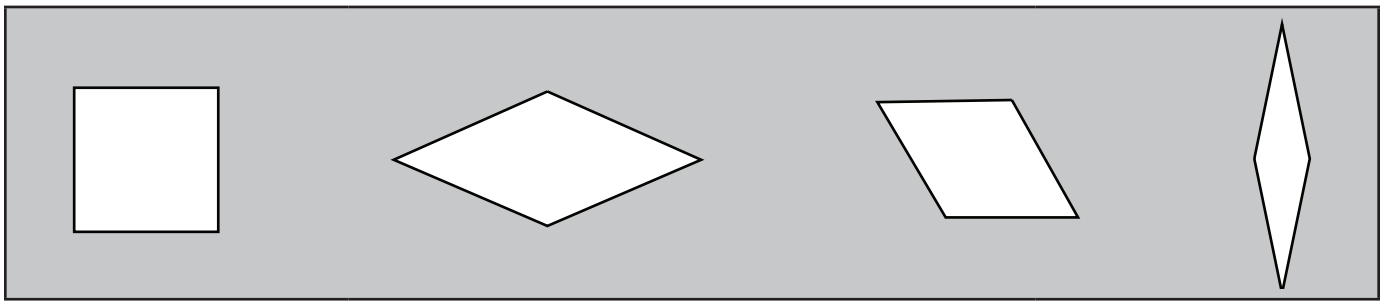


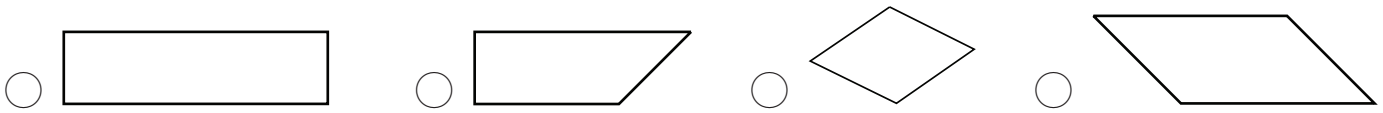


b How do you know the triangle you picked belongs in the group?

c What is the name for this kind of triangle?

2a All of the quadrilaterals in the box have something in common. Fill in the circle next to the quadrilateral that belongs with them.





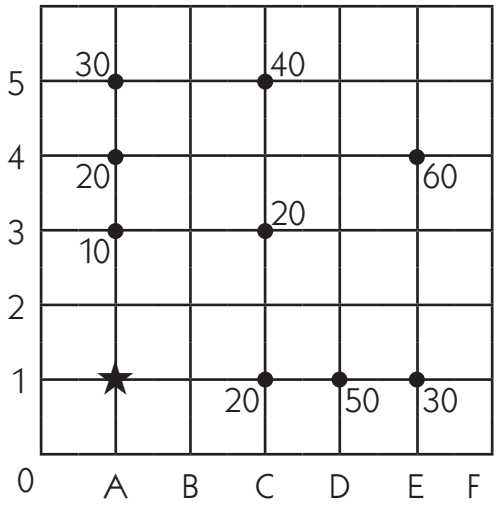
b How do you know the quadrilateral you picked belongs in the group?

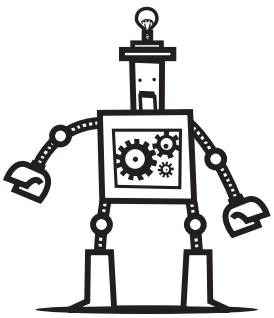
c What is the name for this kind of quadrilateral?

NAME _____ **DATE** _____

The Robot's Path

Pirate Christopher programmed a robot to collect gold pieces for him on the grid below. The numbers on the grid show how many gold pieces are at each location. The robot started at (A,1). It made just 3 turns and traveled 14 spaces before returning to its starting point with exactly 170 gold pieces. The robot *only* traveled on the horizontal and vertical grid lines.





1 If the robot makes only 3 turns and returns along the grid lines to its starting point, what shape must its path be?

2 If the robot traveled 14 spaces, what could be the dimensions of the shape you named above?

3 The robot turned at points _____, _____, and _____.

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Division Estimate & Check

Make a multiplication menu for each divisor. Complete the sentence to identify a range of reasonable answers. Then use long division to find the exact answer, including the remainder if there is one.

Problem	Multiplication Menu	Range of Reasonable Answers	Your Work	Exact Answer
ex 307 ÷ 19	19 × 10 = 190 19 × 20 = 380 19 × 5 = 95 19 × 2 = 38	The answer will be less than 20 and greater than 10.	1 5] 16 r3 10 19 ⌊ 307 - 190 117 - 95 22 - 19 3	16 r3
1 396 ÷ 17		The answer will be less than _____ and greater than _____.		
2 275 ÷ 13		The answer will be less than _____ and greater than _____.		

NAME _____ **DATE** _____

The Book Problem

1 Mrs. Suarez wants to buy a class set of books for her students. There are 24 students in her class. She has $150 to spend. How much money can she spend on each book?

a Restate the question in your own words:

b Solve the problem. Show all your work.

c Does your answer make sense? Explain how you can tell.

NAME _____ **DATE** _____

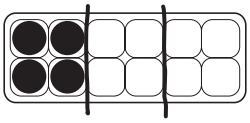
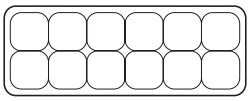
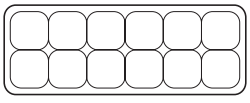
Simplifying Fractions

1 Write all the factors of each number below. Try to think of the factors in pairs.

ex 2 1, 2 **a** 4 _____ **b** 8 _____

c 3 _____ **d** 6 _____ **e** 12 _____

2 You can simplify a fraction by dividing the numerator and the denominator by the same number. If you divide the numerator and denominator by the largest factor they have in common (the greatest common factor), you can show the fraction in its simplest form. Look carefully at the example below. Then fill in the rest of the table.

Fraction	Factors of the Numerator (top number)	Factors of the Denominator (bottom number)	Greatest Common Factor	Divide to Get the Simplest Form	Picture and Equation
ex $\frac{4}{12}$	1, 2, (4)	1, 2, 3, (4), 6, 12	4	$\frac{4 \div 4}{12 \div 4} = \frac{1}{3}$	 $\frac{4}{12} = \frac{1}{3}$
a $\frac{4}{6}$				$\frac{4 \div \quad}{6 \div \quad} =$	 $\frac{4}{6} =$
b $\frac{3}{12}$				$\frac{3 \div \quad}{12 \div \quad} =$	 $\frac{3}{12} =$

NAME _____ **DATE** _____

Using the Greatest Common Factor to Simplify Fractions

1 Divide the numerator and denominator of each fraction by the largest factor they have in common (the greatest common factor) to show each fraction in its simplest form. A fraction is in its simplest form when its numerator and denominator have no common factor other than 1. Some of the fractions below may already be in simplest form.

Fraction	Factors of the Numerator (top number)	Factors of the Denominator (bottom number)	Greatest Common Factor	Divide	Simplest Form
ex $\frac{21}{24}$	1, (3), 7, 21	1, 2, (3), 4, 6, 8, 12, 24	3	$\frac{15 \div 3}{36 \div 3} = \frac{5}{12}$	$\frac{5}{12}$
a $\frac{14}{16}$				$\frac{14 \div \_\_}{16 \div \_\_} =$	
b $\frac{16}{21}$				$\frac{16 \div \_\_}{21 \div \_\_} =$	
c $\frac{27}{36}$				$\frac{27 \div \_\_}{36 \div \_\_} =$	
d $\frac{15}{36}$				$\frac{15 \div \_\_}{36 \div \_\_} =$	

2 Write two fractions that are equal to the fraction shown.

ex $\frac{3}{4} = \frac{6}{8}$ and $\frac{3}{4} = \frac{9}{12}$	**a** $\frac{6}{21} =$ _____ and $\frac{6}{21} =$ _____
b $\frac{3}{15} =$ _____ and $\frac{3}{15} =$ _____	**c** $\frac{7}{12} =$ _____ and $\frac{7}{12} =$ _____

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Rewriting & Comparing Fractions

Which is greater, $\frac{7}{12}$ or $\frac{11}{18}$? Without a picture, it is hard to tell, but if both fractions had the same denominator, it would be easy to compare them (and add them or subtract them).

You can rewrite any pair of fractions so they both have the same denominator. First, find the least common multiple of the two denominators. That number will be the common denominator. Then multiply the numerator and denominator of each fraction by the same number to get two equivalent fractions with the common denominator.

(Step 1) Find the least common multiple of the two denominators.

multiples of 12: 12, 24, 36, 48
multiples of 18: 18, 36

36 is the smallest multiple that 12 and 18 have in common. That means it is the least common multiple and will be the common denominator.

(Step 2) Multiply the numerator and denominator of each fraction by the same number to make an equivalent fraction with a denominator of 36.

$\frac{7}{12} \times \frac{3}{3} = \frac{21}{36}$ $\left(\frac{7}{12} = \frac{21}{36}\right)$ $\frac{11}{18} \times \frac{2}{2} = \frac{22}{36}$ $\left(\frac{11}{18} = \frac{22}{36}\right)$

1 Look at the explanation above. We rewrote the two fractions so that they both had 36 in the denominator. Now answer the original question: which is greater, $\frac{7}{12}$ or $\frac{11}{18}$?

2 *Exactly* how much greater is the larger fraction?

3 What do you get if you add the two fractions? Write your answer as an improper fraction and a mixed number.

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Using the Least Common Multiple to Compare Fractions

1 Find the least common multiple of each pair of numbers.

ex The least common multiple of 8 and 28 is 56. multiples of 28: 28, 56 multiples of 8: 8, 16, 24, 32, 40, 48, 56	**a** The least common multiple of 8 and 12 is _____. multiples of 12: multiples of 8:
b The least common multiple of 6 and 15 is _____. multiples of 15: multiples of 6:	**c** The least common multiple of 6 and 14 is _____. multiples of 14: multiples of 6:

2 Rewrite each pair of fractions with a common denominator. (Use the least common multiples above to help.) Then use a <, >, or = to compare them in two number sentences.

Fractions	Rewritten with Common Denominator	Number Sentences
ex $\frac{6}{8}$ and $\frac{17}{28}$	$\frac{6 \times 7}{8 \times 7} = \frac{42}{56}$ $\quad \frac{17 \times 2}{28 \times 2} = \frac{34}{56}$	$\frac{42}{56} > \frac{34}{56}$ so $\frac{6}{8} > \frac{17}{28}$
a $\frac{5}{8}$ and $\frac{9}{12}$	$\frac{5 \times \_\_}{8 \times \_\_} =$ $\quad \frac{9 \times \_\_}{12 \times \_\_} =$	so $\frac{5}{8}$ $\_\_$ $\frac{9}{12}$
b $\frac{4}{6}$ and $\frac{12}{15}$	$\frac{4 \times \_\_}{6 \times \_\_} =$ $\quad \frac{12 \times \_\_}{15 \times \_\_} =$	so $\frac{4}{6}$ $\_\_$ $\frac{12}{15}$
c $\frac{5}{6}$ and $\frac{11}{14}$	$\frac{5 \times \_\_}{6 \times \_\_} =$ $\quad \frac{11 \times \_\_}{14 \times \_\_} =$	so $\frac{5}{6}$ $\_\_$ $\frac{11}{14}$

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Finding Equivalent Fractions

1 Write two fractions that are equal to the fraction shown.

ex $\frac{3}{9} = \frac{1}{3}$ and $\frac{3}{9} = \frac{6}{18}$	**a** $\frac{9}{15} =$ and $\frac{9}{15} =$
b $\frac{4}{6} =$ and $\frac{4}{6} =$	**c** $\frac{15}{18} =$ and $\frac{15}{18} =$

2 Circle the fractions that are equal to the fraction shown. Use the space at right as a work space to do calculations if needed.

Fraction	Circle the fractions that are equal to the other fraction.				
ex $\frac{1}{2}$	$\frac{4}{8}$	$\frac{3}{5}$	$\frac{2}{4}$	$\frac{7}{14}$	$\frac{5}{6}$
a $\frac{4}{12}$	$\frac{1}{3}$	$\frac{2}{10}$	$\frac{8}{24}$	$\frac{6}{14}$	$\frac{12}{36}$
b $\frac{3}{4}$	$\frac{6}{7}$	$\frac{6}{8}$	$\frac{9}{12}$	$\frac{15}{20}$	$\frac{30}{40}$
c $\frac{3}{15}$	$\frac{6}{30}$	$\frac{5}{17}$	$\frac{1}{3}$	$\frac{1}{5}$	$\frac{9}{45}$

3 If you are given one fraction, what can you do to write other fractions that are equal to that fraction?

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Rewriting & Comparing More Fractions

1 Find the least common multiple of each pair of numbers.

ex The least common multiple of 8 and 28 is 56. multiples of 28: 28, 56 multiples of 8: 8, 16, 24, 32, 40, 48, 56	**a** The least common multiple of 6 and 7 is _____. multiples of 6: multiples of 7:
b The least common multiple of 9 and 12 is _____. multiples of 9: multiples of 12:	**c** The least common multiple of 9 and 15 is _____. multiples of 9: multiples of 15:

2 Rewrite each pair of fractions with a common denominator. Then use a <, >, or = to compare them in two number sentences.

Fractions	Rewritten with Common Denominator	Number Sentences
ex $\frac{6}{8}$ and $\frac{17}{28}$	$\frac{6 \times 7}{8 \times 7} = \frac{42}{56}$ $\quad \frac{17 \times 2}{28 \times 2} = \frac{34}{56}$	$\frac{42}{56} > \frac{34}{56}$ so $\frac{6}{8} > \frac{17}{28}$
a $\frac{4}{6}$ and $\frac{5}{7}$	$\frac{4 \times \_\_}{6 \times \_\_} =$ $\quad \frac{5 \times \_\_}{7 \times \_\_} =$	so $\frac{4}{6}$ $\_\_$ $\frac{5}{7}$
b $\frac{7}{9}$ and $\frac{9}{12}$	$\frac{7 \times \_\_}{9 \times \_\_} =$ $\quad \frac{9 \times \_\_}{12 \times \_\_} =$	so $\frac{7}{9}$ $\_\_$ $\frac{9}{12}$
c $\frac{8}{9}$ and $\frac{13}{15}$	$\frac{8 \times \_\_}{9 \times \_\_} =$ $\quad \frac{13 \times \_\_}{15 \times \_\_} =$	so $\frac{8}{9}$ $\_\_$ $\frac{13}{15}$

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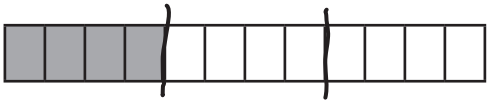
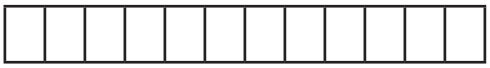
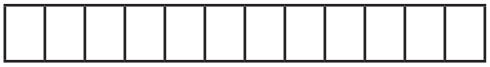
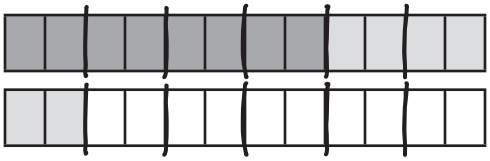
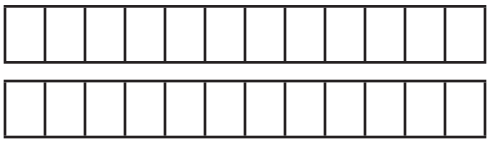
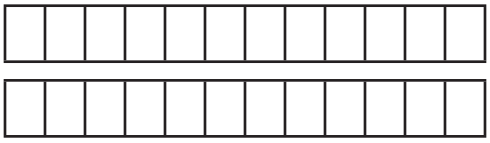
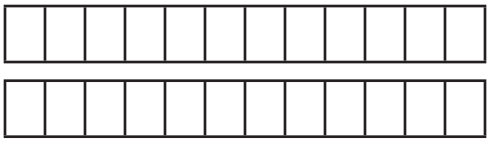
Adding Fractions

1 Each bar below is divided into 12 equal pieces. Show each fraction on a fraction bar.

ex $\frac{1}{3}$ 	**a** $\frac{2}{3}$ 
b $\frac{1}{4}$ 	**c** $\frac{3}{4}$ 
d $\frac{1}{2}$ 	**e** $\frac{5}{6}$ 

2 Rewrite each pair of fractions so that they have the same denominator. Then use the fraction bar pictures to show their sum. Write an equation to show both fractions and their sum.

Fractions to Add	Rewrite with Common Denominator	Picture and Equation
ex $\frac{2}{3} + \frac{1}{2}$	$\frac{2}{3} + \frac{1}{2} = \frac{4}{6} + \frac{3}{6}$	 $\frac{4}{6} + \frac{3}{6} = \frac{7}{6}$ or $1\frac{1}{6}$
a $\frac{2}{3} + \frac{3}{4}$	$\frac{2}{3} + \frac{3}{4} =$	
b $\frac{1}{3} + \frac{5}{6}$	$\frac{1}{3} + \frac{5}{6} =$	
c $\frac{7}{12} + \frac{3}{4}$	$\frac{7}{12} + \frac{3}{4} =$	

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Adding Fractions & Mixed Numbers

1 Rewrite each fraction in simplest form by dividing the numerator and denominator by the greatest common factor. A fraction is in its simplest form when its numerator and denominator have no common factor other than 1. You do not have to show your work if you can do it in your head.

ex $\frac{9 \div 3}{15 \div 3} = \frac{3}{5}$	**a** $\frac{4 \div \_\_}{6 \div \_\_} = \frac{\_\_}{\_\_}$	**b** $\frac{12 \div \_\_}{15 \div \_\_} = \frac{\_\_}{\_\_}$
c $\frac{12 \div \_\_}{18 \div \_\_} = \frac{\_\_}{\_\_}$	**d** $\frac{8 \div \_\_}{12 \div \_\_} = \frac{\_\_}{\_\_}$	**e** $\frac{4 \div \_\_}{12 \div \_\_} = \frac{\_\_}{\_\_}$

2 Rewrite each pair of fractions so they have the same denominator. Then find their sum. Sometimes, you will need to find the least common multiple. Sometimes you might be able to reduce each fraction to its simplest form to find a common denominator.

ex a $\frac{5}{8} + \frac{7}{12}$ ↓ ↓ $\frac{15}{24} + \frac{14}{24} = \frac{29}{24}$ and $\frac{29}{24} = 1\frac{5}{24}$	**ex b** $\frac{2}{6} + \frac{8}{12}$ ↓ ↓ $\frac{1}{3} + \frac{2}{3} = \frac{3}{3}$ and $\frac{3}{3} = 1$
a $\frac{3}{4} + \frac{2}{8}$	**b** $\frac{6}{8} + \frac{9}{12}$
c $3\frac{6}{12} + 4\frac{1}{2}$	**d** $1\frac{5}{8} + 2\frac{3}{4}$

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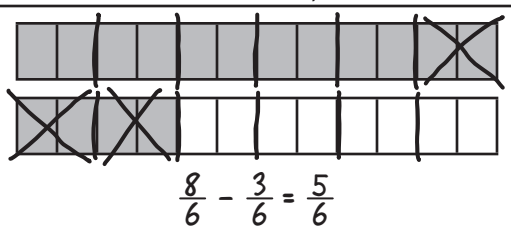
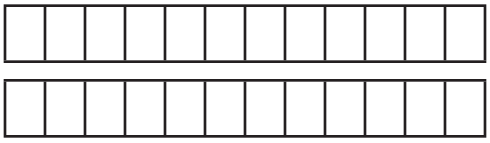
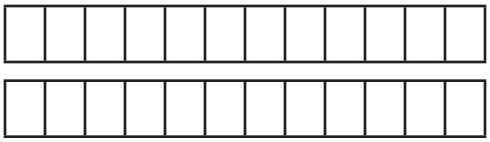
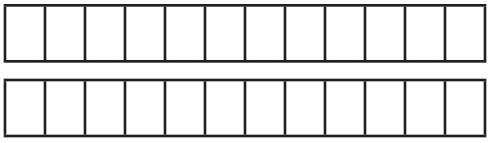
Fraction Subtraction

1 Rewrite each pair of fractions so they have the same denominator. Then use the fraction bar pictures to show their difference. Write an equation to show both fractions and their difference.

Fractions	Rewrite with Common Denominator	Picture and Equation
ex $\frac{4}{3} - \frac{1}{2}$	$\frac{4}{3} - \frac{1}{2} = \frac{8}{6} - \frac{3}{6}$	 $\frac{8}{6} - \frac{3}{6} = \frac{5}{6}$
a $\frac{3}{4} - \frac{2}{3}$	$\frac{3}{4} - \frac{2}{3} =$	
b $\frac{5}{6} - \frac{1}{3}$	$\frac{5}{6} - \frac{1}{3} =$	
c $\frac{15}{12} - \frac{3}{4}$	$\frac{15}{12} - \frac{3}{4} =$	

CHALLENGE

2 Add each pair of numbers.

a $\frac{4}{12} + \frac{7}{15} =$

b $463\frac{7}{12} + 129\frac{13}{36} =$

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More Fraction Subtraction

1 Rewrite each improper fraction as a mixed number.

ex $\frac{16}{12} = 1\frac{4}{12}$ **a** $\frac{12}{8} =$ **b** $\frac{15}{6} =$ **c** $\frac{17}{8} =$ **d** $\frac{14}{3} =$

2 Rewrite each mixed number as an improper fraction.

ex $1\frac{2}{8} = \frac{10}{8}$ **a** $1\frac{5}{12} =$ **b** $2\frac{5}{6} =$ **c** $3\frac{1}{4} =$ **d** $4\frac{2}{3} =$

3 Rewrite each pair of fractions so that they have the same denominator. Then find the difference. Sometimes, you will need to find the least common multiple. Sometimes you might be able to reduce each fraction to its simplest form to find a common denominator.

ex a

$\frac{5}{8} - \frac{7}{12}$

$\frac{15}{24} - \frac{14}{24} = \frac{1}{24}$

ex b

$\frac{8}{6} - \frac{8}{12}$

$\frac{4}{3} - \frac{2}{3} = \frac{2}{3}$

a

$\frac{7}{4} - \frac{4}{8}$

b

$\frac{15}{12} - \frac{3}{8}$

c

$2\frac{3}{8} - 1\frac{1}{3}$

d

$3\frac{5}{8} - 1\frac{3}{4}$

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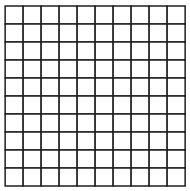
Modeling Decimals

The base ten models below can be used to represent decimal numbers.



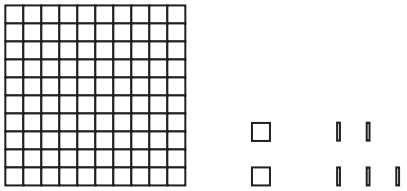
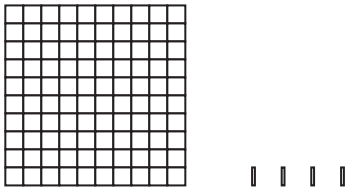
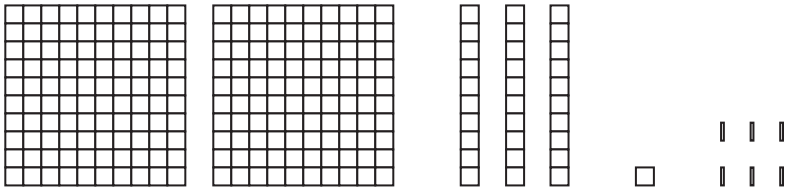
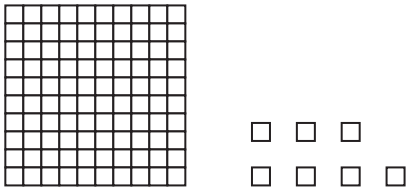
1 whole

1 tenth

1 hundredth

1 thousandth

1 Write the number that each model represents.

Model	Decimal Number
ex 	1.025
a 	
b 	
c 	

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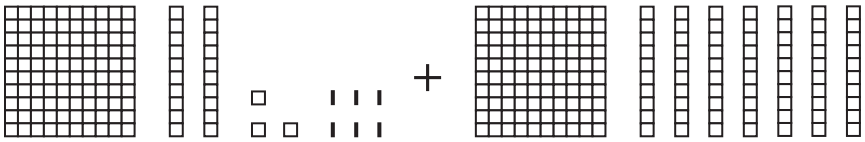
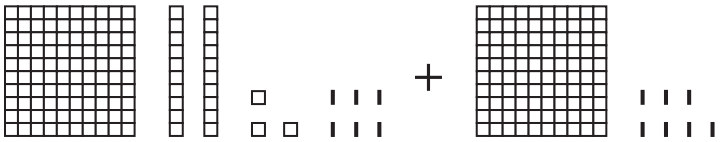
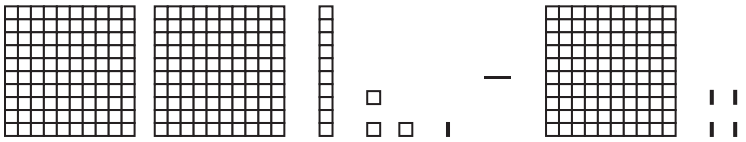
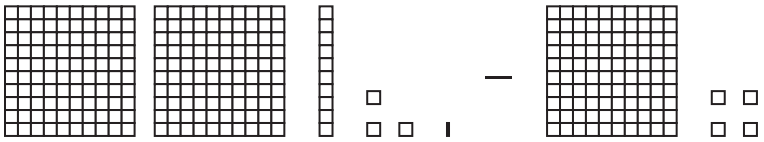
Decimal Sums & Differences

Write each expression beside the picture that represents it. Then find the sum or difference between the decimal numbers. You can use the pictures to help, or you can use the numbers. Show all your work.

1.236 + 1.007	1.236 + 1.07	1.236 + 1.7
2.131 – 1.004	2.131 – 1.04	2.131 – 1.4

Picture	Expression and Sum or Difference
1 	
2 	
3 	
4 	
5 	
6 	

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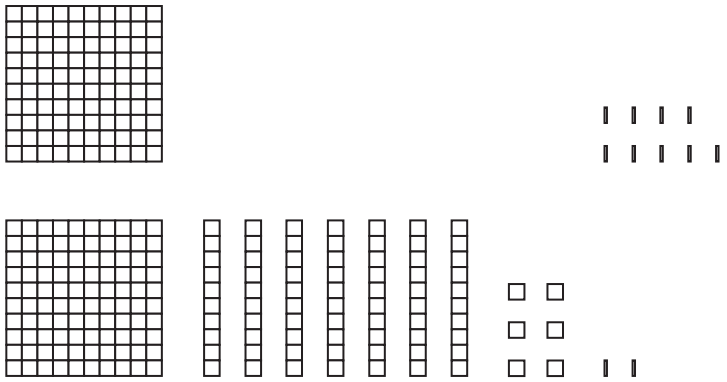
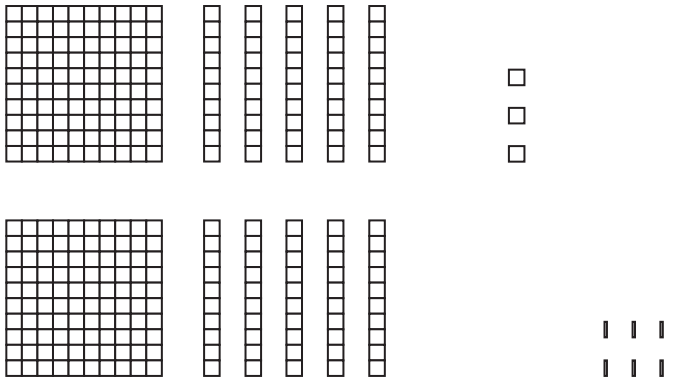
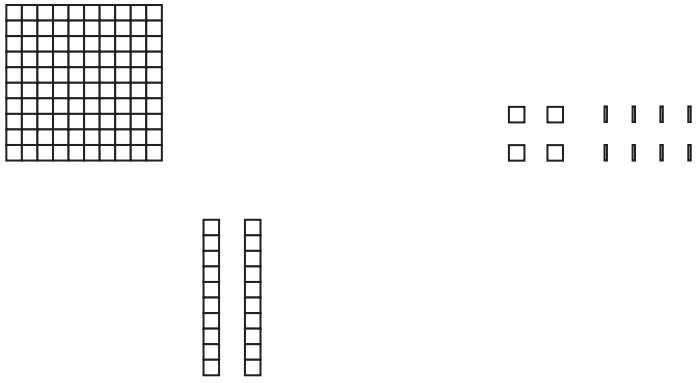
Using Models to Add & Subtract Decimals

Look at the pictures of each addition and subtraction combination. Then answer the question about the combination's sum or difference.

Picture	Numbers	Question
1 	1.009 + 1.762	Is the sum of 1.009 and 1.762 greater or less than 3? Explain how you can tell.
2 	1.530 + 1.506	Is the sum of 1.530 and 1.506 greater or less than 3? Explain how you can tell.
3 	1.048 – 0.200	Is the difference between 1.048 and 0.200 greater or less than 1? Explain how you can tell.

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Adding & Subtracting Decimals

1 Complete the following addition problems.

1 1 3.034 + 1.886 4.920	4.067 + 3.290	1.437 + 1.042	7.63 +4.592	4.803 + 1.420

2.45 + 1.469 = _____

3.043 + 1.588 = _____

2 Complete the following subtraction problems.

2 9 1 3.046 – 1.273 1.773	2.405 – 0.512	3.437 – 2.106	5.26 – 3.40	4.513 – 1.382

5.604 – 3.025 = _____

6.045 – 2.039 = _____

3 Circle the pairs of numbers whose sums are greater than 2.

1.26 + 0.773 1.255 + 0.094 1.53 + 0.458 1.502 + 0.6

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Decimal Addition & Subtraction

1 Fill in the missing digits below to make the inequalities true. There will be more than one correct way to fill in each missing digit.

ex 3 < 1.5___06 + 1.5	**a** 0.705 + 1.___98 < 2
b 4 < 2.406 + 1.___09	**c** 1.620 + 1.___82 > 3

2 Complete the following addition problems.

1 1 3.034 + 1.886 4.920	12.32 + 4.099	6.005 + 12.243	17.28 + 3.8	7.853 + 3.629

3.45 + 5.062 = _____ 8.049 + 4.356 = _____

3 Complete the following subtraction problems.

2 9 3.046 – 1.273 1.773	5.38 – 2.4	4.263 – 2.051	8.03 – 3.485	12.238 – 9.065

15.204 – 8.039 = _____ 13.006 – 12.058 = _____

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Decimal Story Problems

1a In the 2008 Beijing Summer Olympics, Jamaican runner Usain Bolt ran the 200 meter dash in 19.30 seconds, coming in first place and breaking the world record for that race. The runner who came in second, Churandy Martina, finished the race in 19.82 seconds. By how much did Bolt win the race? Show all your work.

b Did Bolt run the race more or less than a half-second faster than the second place finisher? Explain how you can tell.

2a In the 2008 Beijing Summer Olympics, Usain Bolt ran the 100-meter dash in 9.69 seconds. Is that less than half, exactly half, or more than half as long as it took him to run the 200-meter dash? Show all your work.

b Does your answer to part 2a make sense to you? Explain why or why not.

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Finding the Common Denominator

1 Rewrite each fraction in simplest form by dividing the numerator and denominator by the greatest common factor. A fraction is in its simplest form when its numerator and denominator have no common factor other than 1. You do not have to show your work if you can do it in your head.

ex $\frac{9 \div 3}{15 \div 3} = \frac{\quad}{\quad}$	**a** $\frac{3 \div \quad}{6 \div \quad} = \frac{\quad}{\quad}$	**b** $\frac{9 \div \quad}{15 \div \quad} = \frac{\quad}{\quad}$
c $\frac{15 \div \quad}{18 \div \quad} = \frac{\quad}{\quad}$	**d** $\frac{12 \div \quad}{18 \div \quad} = \frac{\quad}{\quad}$	**e** $\frac{8 \div \quad}{12 \div \quad} = \frac{\quad}{\quad}$

2 Rewrite each pair of fractions so that they have the same denominator. Sometimes, you will need to find the greatest common multiple. Sometimes you might be able to reduce each fraction to its simplest form to find a common denominator.

Fractions	Your Work	With a Common Denominator
ex $\frac{7}{12}$ and $\frac{5}{8}$ 12, (24) 8, 16, (24)	$\frac{7 \times 2}{12 \times 2} = \frac{14}{24}$ $\frac{5 \times 3}{8 \times 3} = \frac{15}{24}$	$\frac{14}{24}$ and $\frac{15}{24}$
a $\frac{1}{4}$ and $\frac{9}{12}$		
b $\frac{7}{8}$ and $\frac{5}{6}$		
c $\frac{7}{15}$ and $\frac{4}{6}$		

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Fraction Estimate & Check

Before you solve each problem, look carefully at the fractions and write what you know about the sum or difference. Then find the exact sum or difference. Show all your work. If your answer is greater than 1, write it as a mixed number, not an improper fraction.

Problem	What You Know Before You Start	Show your work.	Exact Sum or Difference
ex $\frac{8}{3} + \frac{9}{12}$	The sum is more than 3.	$\frac{32}{12} + \frac{9}{12} = \frac{41}{12}$ and $\frac{41}{12} = 3\frac{5}{12}$	$3\frac{5}{12}$
1 $\frac{4}{6} + \frac{8}{12}$			
2 $\frac{12}{8} + \frac{3}{4}$			
3 $\frac{3}{8} + \frac{8}{12}$			
4 $\frac{10}{8} - \frac{9}{12}$			
5 $\frac{5}{6} - \frac{3}{4}$			

NAME _____ **DATE** _____

Lauren's Puppy

1a Lauren's puppy wasn't feeling well so she took him to the vet. The puppy weighed $4\frac{3}{4}$ pounds. The vet said she would like the puppy to gain at least $\frac{9}{16}$ of a pound by the time they came back for his checkup. When they returned for the puppy's checkup, he had gained $\frac{3}{4}$ of a pound. How much more weight did the puppy gain than he needed to? Show all your work.

b How much did the puppy weigh after he had gained $\frac{3}{4}$ of a pound? Show all your work.

2 Lauren was happy that her puppy was gaining weight, so she told her friend Andre how much the puppy weighed now. Andre had a tiny chihuahua puppy, and he said, "Wow, your puppy is a pound and a half heavier than mine!" How much does Andre's puppy weigh? Show all your work.

NAME _____ **DATE** _____

Rachel & Dimitri's Trip to the Store

1 Rachel and her cousin Dimitri went to the store together. Rachel bought a magazine for $2.89 and a bottle of juice for $1.35. Dimitri bought a sandwich for $3.16 and a cup of fruit salad for $1.15. Who spent more money, Dimitri or Rachel? Exactly how much more money did he or she spend than the other? Show all your work.

2 When they got to the register, Rachel said, "Oh no, I only have 4 dollars. Can I borrow the rest of the money I need from you, Dimitri?" If Dimitri paid for his food with a $5 bill, could he give Rachel the money she needed from the change he got?

NAME _____ **DATE** _____

Order of Operations Review

The order of operations tells you how to do calculations when there is more than one kind of operation.

Order of Operations	Example
	20 – 12 ÷ (3 + 1)
1. Anything inside parentheses	20 – 12 ÷ **(3 + 1)** = 20 – 12 ÷ 4
2. Multiplication and division from left to right	20 – **12 ÷ 4** = 20 –3
3. Addition and subtraction from left to right	**20 – 3** = 17

1 Use the order of operations above to complete each equation. Show all your work.

a _____ = 463 – 180 ÷ (3 × (2 + 3))	**b** (249 – 192) ÷ 3 × 14 = _____
c _____ = 36 + 14 × (182 – 164) ÷ 12	**d** (9 ÷ 3 + 213) – 72 ÷ 4 = _____

2 Insert parentheses to make each equation true. Show all your work.

a 3 × 9 + 18 + 36 ÷ 9 = 33	**b** 2 = 140 ÷ 2 + 12 – 4 × 2

NAME _____ **DATE** _____

Reviewing Three Number Properties

If you are adding or multiplying, you can change the order of the numbers or the way they are grouped to make the calculations easier. The three properties below can make mental math easier.

Commutative Property	Associative Property	Distributive Property
Changing the order of two numbers or numerical expressions when you add or multiply does not change the answer.	Changing the way you group three numbers or numerical expressions when you add or multiply does not change the answer.	You can break a number apart, multiply each part separately, and then add the products. You will still get the same answer.
$5 + 2 = 2 + 5$ $5 \times 2 = 2 \times 5$	$(38 \times 4) \times 25 = 38 \times (4 \times 25)$ $= 38 \times 100$ $= 3{,}800$	$6 \times 13 = 6 \times (10 + 3)$ $= 6 \times 10 + 6 \times 3$ $= 60 + 18$ $= 78$

1 For each problem below:

- Write it a different way so it is easier to solve in your head.
- Solve it and write the answer.
- Circle C if you switched the order of the numbers.
- Circle A if you grouped the numbers in a different way.
- Circle D if you broke the number apart and multiplied one part at a time.
- You may need to circle more than one property.

Problem	Rewrite	Answer	Property
ex $(70 + 469) + 30$	$(70 + 30) + 469$	569	(C) (A) D
a 12×23			C A D
b $(50 \times 73) \times 2$			C A D
c $15 + (135 + 86)$			C A D
d 35×8			C A D
e $25 \times (4 \times 329)$			C A D
f $(34 \times 50) \times 20$			C A D

NAME _____ **DATE** _____

Finding Patterns & Solving Problems

1 Find a pattern and use it to fill in the next 3 numbers in each sequence below. Then explain how you did it.

ex	4	7	10	13	16	19	22	25
	+3	+3	+3	+3	+3	+3	+3	
Explanation: I added 3 more each time.								
a	1	10	19	28	37	_____	_____	_____
Explanation:								
b	197	186	175	164	153	_____	_____	_____
Explanation:								
c	1	3	9	27	81	_____	_____	_____
Explanation:								
d	1	2	4	8	16	_____	_____	_____
Explanation:								

CHALLENGE

2 Look at the example from problem 1:

4, 7, 10, 13, 16, 19, 22, 25 ...

a What would be the 30th number in the sequence? Show all your work.

b What would be the 100th number in the sequence? Show all your work.

c Would the 876th number in the sequence be odd or even? Explain how you can tell.

NAME _____ **DATE** _____

Solving Equations & Pattern Problems

1 Fill in the missing numbers to make each equation true. Hint: *Remember the order of operations.*

ex a 45 – 7 = 38	**ex b** 6 = 42 ÷ 7	**a** _____ + 13 = 26 – 8
b 64 ÷ _____ = 5 + 3	**c** 84 – 12 = _____ + 60	**d** 120 ÷ 2 = _____ – 29
e 37 = 10 + _____ × 3	**f** (36 – _____) ÷ 7 = 2	**g** 32 = 4 × 2 + _____

2 Write an equation in which the missing number has to be 10.

CHALLENGE

3 Look at this sequence:

1, 10, 19, 28, 37 ...

a What would be the 50th number in the sequence? Show all your work.

b Would the 75th number in the sequence be odd or even? Explain how you can tell.

NAME _____ **DATE** _____

Variables & Expressions

Sometimes people use letters to represent unspecified amounts. Such letters are called *variables*. For example, if you worked for $6 an hour, you would multiply the time you worked by 6 to find out what you earned. If we let t represent the time you worked, we could show the amount of money you earned with this expression.

$$6 \times t$$

When we say, "evaluate the expression when $t = 3$," we mean, "figure out how much money you would make if you worked for 3 hours." To do this, substitute 3 for t and complete the calculation:

Evaluate the expression $6 \times t$ when $t = 3$.

$6 \times 3 = 18$ This means you would earn $18 if you worked for 3 hours at $6 per hour.

1 Evaluate the expression $6 \times t$ when:

a $t = 2$

b $t = 4$

c $t = 5$

d $t = 8$

2 How much money would you make if you worked 15 hours and earned $6 per hour?

3 Evaluate the following expressions when each variable has the value shown. Use order of operations when you need to.

ex $4 + b$ when $b = 10$ $4 + 10 = 14$
a $4 + b$ when $b = 23$
b $4 + b$ when $b = 103$
c $3 \times n - 2$ when $n = 2$
d $3 \times n - 2$ when $n = 4$
e $2 \times k + 12$ when $k = 7$
f $2 \times k + 12$ when $k = 10$

NAME _____ **DATE** _____

Cheetahs & Muffins

1a Isabel works at the city zoo. She is in charge of feeding the cheetahs. Each cheetah needs to eat 5 pounds of food each day. Which expression shows how much food the cheetahs will eat altogether each day? (The letter *c* stands for the number of cheetahs at the zoo.)

◯ $5 + c$ ◯ $c - 5$ ◯ $5 \times c$ ◯ $c \div 5$

b There are 6 cheetahs at the zoo now. How much food do they eat each day? Show all your work.

c The zoo is thinking about getting some more cheetahs. Isabel can afford to buy 70 pounds of food each day. How many cheetahs would that feed? Show all your work.

2a Every weekend Clarice and her dad bake some muffins and give 8 of them to their neighbors for breakfast on Sunday. Which expression shows how many muffins they have left over for themselves each week? (The letter *m* stands for the number of muffins they baked.)

◯ $8 + m$ ◯ $m - 8$ ◯ $8 \times m$ ◯ $m \div 8$

b If they baked 24 muffins last weekend, how many did they have left for themselves? Show all your work.

c If they wanted to have 12 muffins left for themselves, how many would they need to bake? Show all your work.

NAME _____ **DATE** _____

Adding Fractions with Different Denominators

Here is a quick way to add fractions with different denominators.

Original Problem	$\frac{3}{4} + \frac{5}{6}$
1. Multiply the denominators by each other to get a common denominator.	$4 \times 6 = 24$
2. Rewrite each fraction as an equivalent fraction with the common denominator.	$\frac{3 \times 6}{4 \times 6} = \frac{18}{24}$ $\frac{5 \times 4}{6 \times 4} = \frac{20}{24}$
3. Add the fractions.	$\frac{18}{24} + \frac{20}{24} = \frac{38}{24}$
4. Reduce the sum to lowest form and express as a mixed number if greater than 1.	$38 - 24 = 14$ $\frac{38}{12} = 1\frac{14}{24}$ $1\frac{14}{24} = 1\frac{7}{12}$

1 Follow the steps at left to add each pair of fractions.

a

$\frac{1}{6} + \frac{7}{9}$

b

$\frac{5}{8} + \frac{11}{12}$

c

$\frac{3}{5} + \frac{4}{11}$

d

$\frac{10}{16} + \frac{5}{9}$

NAME _____ **DATE** _____

Danny's Yard Work

1a Danny is trying to earn money to buy a new bike. His neighbor says he will pay him $4 per hour to help with yard work. His mom says she will give him a $10 bill to add to his savings after he helps his neighbor. Which expression shows how much money Danny will make? (The letter t stands for the number of hours Danny will work for his neighbor.)

◯ $4 + t + 10$ ◯ $4 \times t + 10 \times t$ ◯ $4 \times t + 10$ ◯ $14 \times t$

b How much money will Danny make if he works for 4 hours with his neighbor? Show all your work.

c If Danny wants to earn $34, how many hours will he have to work? Show all your work.

CHALLENGE

2 Pick one of the expressions from 1a above that does *not* represent Danny's situation. Describe a situation where the expression you chose *would* represent how much money Danny would make.

a The expression I chose is:

b This expression would show how much money Danny would make if...

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Subtracting Fractions with Different Denominators

Here is a quick way to subtract fractions with different denominators.

Original Problem	$\frac{5}{6} - \frac{3}{4}$
1. Multiply the denominators by each other to get a common denominator.	$6 \times 4 = 24$
2. Rewrite each fraction as an equivalent fraction with the common denominator.	$\frac{5 \times 4}{6 \times 4} = \frac{20}{24}$ $\frac{3 \times 6}{4 \times 6} = \frac{18}{24}$
3. Subtract the smaller fraction from the larger fraction.	$\frac{20}{24} - \frac{18}{24} = \frac{2}{24}$
4. Reduce the difference to lowest form and express as a mixed number if greater than 1.	$\frac{2}{24} = \frac{1}{12}$

1 Follow the steps at left to find the difference between each pair of fractions.

a

$\frac{4}{5} - \frac{2}{7}$

b

$\frac{2}{3} - \frac{3}{5}$

c

$\frac{5}{6} - \frac{1}{4}$

d

$\frac{8}{13} - \frac{3}{8}$

NAME _____ **DATE** _____

Modeling, Adding & Subtracting Decimals

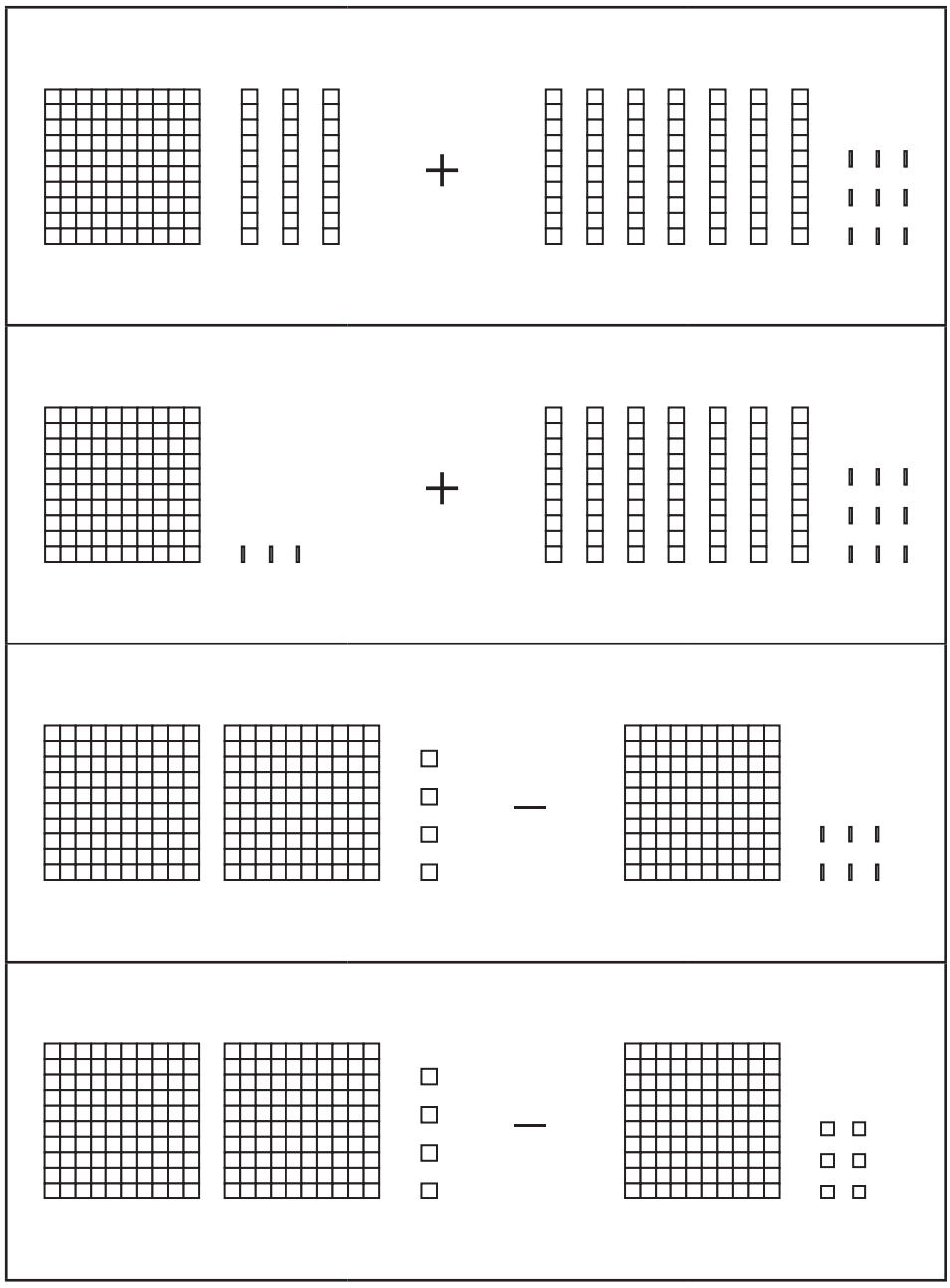
1 Draw a line to match each expression to the place value model that represents it.

a 1.3 + 0.709

b 2.04 – 1.06

c 1.003 + 0.709

d 2.04 – 1.006



2 Use a < or > sign to complete the number sentence. Use the models above to help you.

a 1.3 + 0.709 ____ 2

b 2.04 – 1.06 ____ 1

c 1.003 + 0.709 ____ 2

d 2.04 – 1.006 ____ 1

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Division Review

Make a multiplication menu for each divisor. Complete the sentence to identify a range of reasonable answers. Then use long division to find the exact answer, including the remainder if there is one.

Problem	Multiplication Menu	Range of Reasonable Answers	Your Work	Exact Answer
ex 307 ÷ 19	19 × 10 = 190 19 × 20 = 380 19 × 5 = 95 19 × 2 = 38	The answer will be less than 20 and greater than 10.	1 5 ⌉ 16 r3 10⌋ 19 ⌊ 307 − 190 117 − 95 22 − 19 3	16 r3
1 547 ÷ 17		The answer will be less than _____ and greater than _____.		
2 450 ÷ 16		The answer will be less than _____ and greater than _____.		

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Jorge & Maribel's Present

1 Jorge and his little sister Maribel want to earn money to buy a present for their mother. Jorge is going to get paid $6 per hour to babysit their cousin. Maribel is going to get paid $4 per hour to help their dad with yard work.

On Saturday, Jorge babysat for 4 hours and Maribel worked with her dad for 5 hours. Jorge is going to babysit again on Sunday, but Maribel won't work with their dad again. How many hours will Jorge need to babysit in order to make enough money so they can buy the present for their mother?

a Do you have enough information to answer the question?

b If the answer to question 1 was *no*, pick the piece of information that will help you solve the problem.

◯ Jorge used to make $5 per hour.

◯ Maribel is 9 years old.

◯ The present costs $73.

c Solve the problem. Show all your work. Write your final answer here: _____

NAME _____ **DATE** _____

Fraction Addition & Subtraction Review

1 Find the sum or the difference for each pair of fractions.

a $\frac{5}{6} - \frac{2}{5} =$	**b** $\frac{1}{3} + \frac{6}{7} =$

2 Annie ran $\frac{5}{8}$ of a mile. Her sister Mabel ran $\frac{7}{10}$ of a mile. Who ran farther and by exactly how much? Show all of your work.

3 Juan and his mom hiked $\frac{3}{8}$ of a mile this morning and $\frac{4}{5}$ of a mile this afternoon. How much did they hike today? Show all of your work.

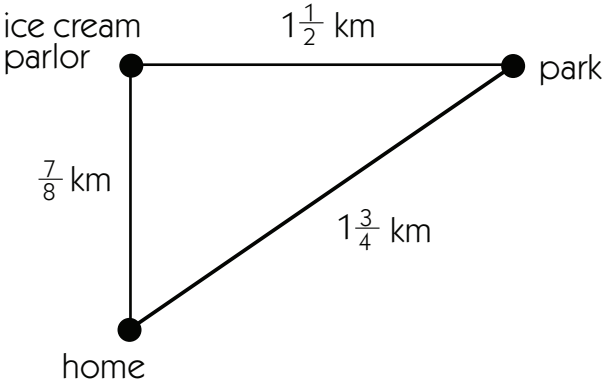
NAME _____ **DATE** _____

More Fraction Problems

1 Fill in the missing fraction or mixed number in each equation.

ex $1\frac{3}{4} + \frac{1}{4} = 2$	**a** $1 = \frac{6}{10} +$ _____	**b** $2 = 1\frac{4}{12} +$ _____
c $3 =$ _____ $+ 1\frac{7}{8}$	**d** $2 = \frac{10}{12} +$ _____	**e** $2\frac{6}{8} +$ _____ $= 4$

2 Calvin and his family were going on a walk. They wanted to walk to the park, then go to the ice cream parlor, and finally walk home. The map below shows their path and the distances between each stop. How many kilometers will they walk in all? Show all your work.



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Fraction Addition & Subtraction Story Problems

1 Find the sum or the difference for each pair of numbers.

a $\frac{5}{14} + \frac{4}{5} =$	**b** $\frac{7}{9} - \frac{4}{7} =$

2 George and his dad made some snack mix for their camping trip. To make it, they used 2 cups of mini pretzels, $\frac{3}{4}$ cup of peanuts, and $\frac{2}{3}$ cup of chocolate chips. How many cups of snack mix did they end up with? Show all of your work.

3 Lisa drank $\frac{7}{16}$ of a bottle of water during the soccer game. Julianne drank $\frac{2}{3}$ of a water bottle that was the same size as Lisa's. Who drank more water and by exactly how much?

NAME _____ **DATE** _____

Reading & Interpreting a Double Bar Graph

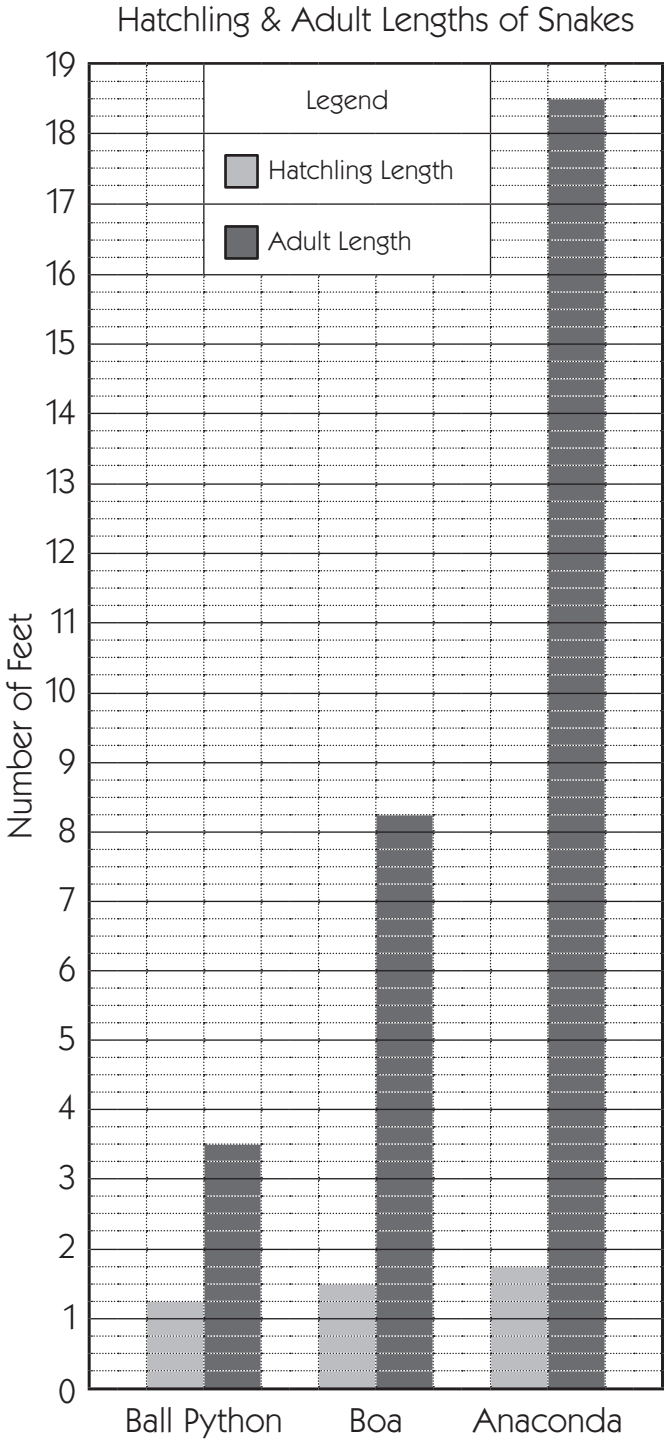
Lucy is in charge of the big snakes at the zoo. She made a bar graph to show the lengths of three different snakes when they were born (hatchling length) and when they were fully grown (adult length). Use the graph Lucy made to answer the questions below. Show all your work.

1 How many feet did the ball python grow?

2 How much did the boa grow?

3 How much did the anaconda grow?

4 Without using numbers, describe what this graph tells you about the growth of these three snakes. Imagine you are writing to a fourth grader who cannot see this graph.



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Decimal Addition & Subtraction Review

1 Fill in the missing digit so that each sum is *greater* than 1. In some cases, there will be more than one correct answer.

ex 0.106 + 0.9__02	**a** 0.512 + 0.4___6
b 0.920 + 0.___98	**c** 0.386 + 0.61___

2 Complete the following addition problems.

1 1 3.034 + 1.886 4.920	2.006 + 7.989	3.080 + 14.513	24.38 + 5.9	7.608 + 2.600

3.27 + 5.049 = _____ 4.438 + 1.96 = _____

3 Complete the following subtraction problems.

3.046 – 1.273 1.773	3.675 – 0.947	4.438 – 2.210	10.17 – 8.99	13.154 – 8.083

9.056 – 5.27 = _____ 27.003 – 26.09 = _____

NAME _____ **DATE** _____

The Python Problem

1 Skylar and his friend Eduardo each got a hatchling ball python to keep as pets*. Skylar's python was 30.56 cm and Eduardo's python 32.73 cm long. A month later, they measured the baby snakes again. Skylar's had grown 2.59 cm and Eduardo's snake had grown 2.38 cm. Whose python was longer, Skylar's or Eduardo's? Exactly how much longer?

a Do you have enough information to answer the question?

b If the answer to question 1 was *no*, pick the piece of information that will help you solve the problem.

◯ Each boy paid $300 for his snake.

◯ There are 2.54 cm in 1 inch.

◯ Adult ball pythons are more than 1 meter long.

◯ None of the above.

c Solve the problem. Show all your work. Write your final answer here: _____

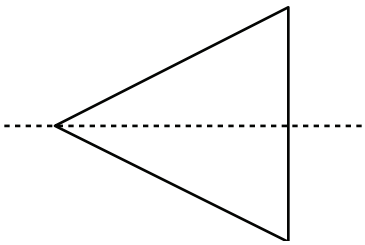
** It is a lot of work to keep a ball python as a pet in your home. They grow to more than 1 meter long and live 20 years or more. If you are thinking about getting a new pet, find out as much about that animal as you can!*

NAME _____ **DATE** _____

Drawing Lines of Symmetry

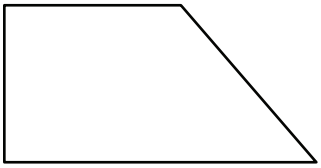
Draw all the lines of symmetry in each figure. There may be 1 line of symmetry, more than 1 line of symmetry, or no lines of symmetry.

ex



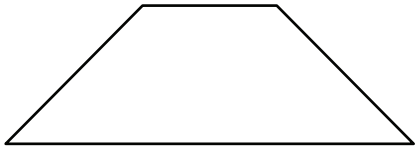
This figure has 1 line(s) of symmetry.

1



This figure has _____ line(s) of symmetry.

2

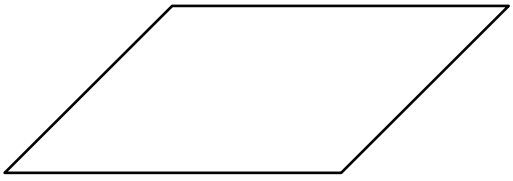


This figure has _____ line(s) of symmetry.

3

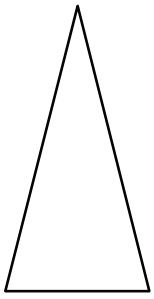
This figure has _____ line(s) of symmetry.

4



This figure has _____ line(s) of symmetry.

5



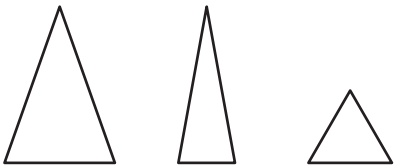
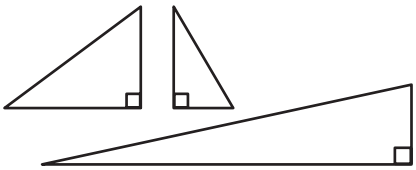
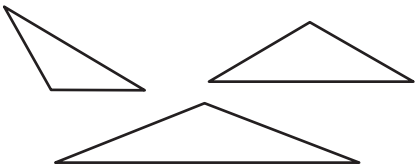
This figure has _____ line(s) of symmetry.

NAME _____ **DATE** _____

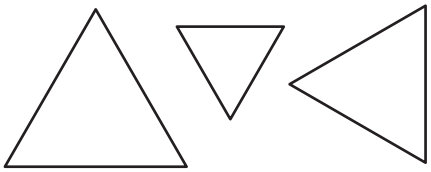
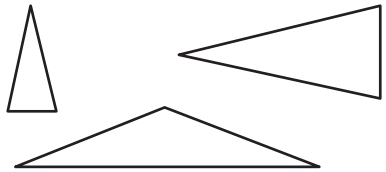
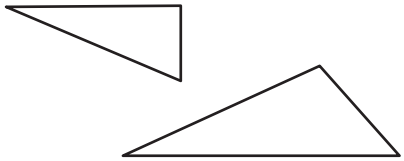
Classifying Triangles Review

Use the following information to solve the problems below.

- You can group triangles by the size of their angles

Acute triangles All 3 angles are acute.	Right triangles 1 angle is a right angle.	Obtuse triangles 1 angle is an obtuse angle.
		

- You can also group triangles by the lengths of their sides

Equilateral triangles All 3 sides are the same length.	Isosceles triangles 2 sides are the same length.	Scalene triangles No sides are the same length.
		

1 Think carefully about each kind of triangle and draw them if you like. What is the greatest possible number of lines of symmetry each kind of triangle below can have? Explain your answer with words and/or sketches.

a Acute triangles can have no more than _____ lines of symmetry.	Why?
b Right triangles can have no more than _____ lines of symmetry.	Why?
c Obtuse triangles can have no more than _____ lines of symmetry.	Why?