BRIDGES®
IN MATHEMATICS

Bridges in Mathematics Second Edition Grade 5 Home Connections Volumes 1 & 2

The Bridges in Mathematics Grade 5 package consists of:

Bridges in Mathematics Grade 5 Teachers Guide Units 1–8

Bridges in Mathematics Grade 5 Assessment Guide

Bridges in Mathematics Grade 5 Teacher Masters

Bridges in Mathematics Grade 5 Student Book Volumes 1 & 2

Bridges in Mathematics Grade 5 Home Connections Volumes 1 & 2

Bridges in Mathematics Grade 5 Teacher Masters Answer Key

Bridges in Mathematics Grade 5 Student Book Answer Key

Bridges in Mathematics Grade 5 Home Connections Answer Key

Bridges in Mathematics Grade 5 Components & Manipulatives

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Work Place Games & Activities

Number Corner Grade 5 Teachers Guide Volumes 1–3

Number Corner Grade 5 Teacher Masters

Number Corner Grade 5 Student Book

Number Corner Grade 5 Teacher Masters Answer Key

Number Corner Grade 5 Student Book Answer Key

Number Corner Grade 5 Components & Manipulatives

Word Resource Cards

Digital resources noted in italics.

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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 Number Corner, a collection of daily skill-building activities for students.

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Bridges Grade 5
Home Connections Volumes 1 & 2

Unit 1
Expressions, Equations & Volume

Unit 2
Adding & Subtracting Fractions

Unit 3
Place Value & Decimals

Unit 4
Multiplying & Dividing
Whole Numbers & Decimals

Unit 5
Multiplying & Dividing Fractions

Unit 6
Graphing, Geometry & Volume

Unit 7
Division & Decimals

Unit 8
Solar Design

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🏠 **What's the Problem?** page 1 of 2

ex To find 3 times any number, Maria doubles the number, then adds the number again.

a Write an expression with parentheses to show how Maria would solve 3×6.

$(2 \times 6) + 6$

b What is 3×6? 18

c What is another way to think about 3×6?

You could do 3×5, which is really easy, and then add 3 more, like this $(3 \times 5) + 3$

1 To find 4 times any number, Susan uses the Double-Double strategy (multiply by 2, then by 2 again). Susan wrote $(2 \times 9) \times 2$ to record how she would solve 4×9.

a What is 4×9?

b What is another way to solve 4×9?

2 To find 5 times any number, Kaylee first multiplies by 10 and then finds half the product.

a Write an expression with parentheses to show how Kaylee would solve 7×5.

b What is 7×5?

c What is another way to solve 7×5?

3 When given any number times 9, Jasper multiplies the number by 10 and then removes one group of the number.

a Write an expression with parentheses to show how Jasper would solve 3×9.

b What is 3×9?

c What is another way to think about 3×9?

(continued on next page)

1

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What's the Problem? page 2 of 2

4 Braden loves multiplying by 8 because he can double-double-double.

a Write an expression with parentheses to show how Braden would solve 8 × 7.

b What is 8 × 7?

c What is another way to think about 8 × 7?

5 Jonah was asked to add 4 and 7 then multiply the sum by 9. Which expression shows Jonah's problem? (The *sum* is the answer to an addition problem.)

a (4 + 7) × 9   **b** (7 − 4) × 9   **c** 4 + (7 × 9)

6 Patrick needed to multiply 4 and 6 then subtract 12 from the product. Write an expression with parentheses to show the problem. (The *product* is the answer to a multiplication problem.)

7 Violet divided 81 by 9 then multiplied the quotient by 3. Write an expression with parentheses to show the problem. (The *quotient* is the answer to a division problem.)

8 Solve.

a 54 − (3 × 8)   **b** (28 ÷ 7) × 4

9 CHALLENGE Rafael was given the problem 44 × 9. Write an expression to show how you would solve the problem.

Multiplication Connections page 1 of 2

ex To multiply a number by 5, Marissa first multiplies by 10 and then finds half the product.

> **ex** Write an expression with parentheses to show how Marissa would solve 24 × 5.
> (24 × 10) ÷ 2
>
> **ex** What is 24 × 5?
> 120

1 To multiply a number by 12, Carter likes to multiply the number by 10 and then multiply it by 2 and add the products. Here is a picture of his thinking.
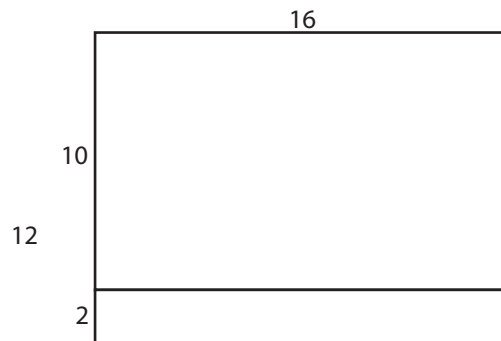
a Write an expression with parentheses to show how Carter would solve 12 × 16.

b What is 12 × 16? _____

2 To multiply a number by 99, Sofia likes to multiply by 100 and then subtract 1 group of the factor. Here is a picture of her thinking.
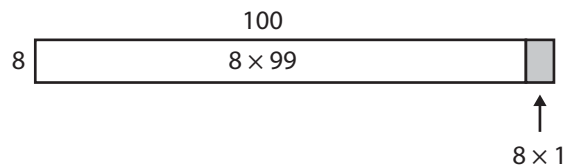
a Write an expression with parentheses to show how Sofia would solve 8 × 99.

b What is 8 × 99? _____

NAME _____ | **DATE** _____

Multiplication Connections page 2 of 2

3 Fill in the dimensions of this box: _____ × _____ × _____
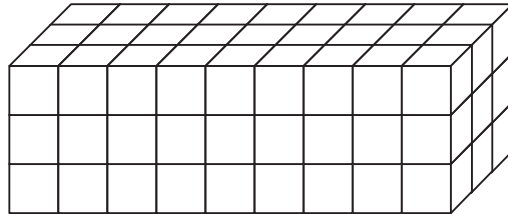
4 Solve the following problems.

$$\begin{array}{c} 2 \\ \times\ 13 \\ \hline \end{array} \qquad \begin{array}{c} 4 \\ \times\ 13 \\ \hline \end{array} \qquad \begin{array}{c} 8 \\ \times\ 13 \\ \hline \end{array} \qquad \begin{array}{c} 10 \\ \times\ 28 \\ \hline \end{array} \qquad \begin{array}{c} 28 \\ \times\ 5 \\ \hline \end{array} \qquad \begin{array}{c} 28 \\ \times\ 15 \\ \hline \end{array} \qquad \begin{array}{c} 13 \\ \times\ \\ \hline 52 \end{array}$$

5 Find the products.

a $(2 \times 5) \times 8 =$ _____

b $(2 \times 8) \times 5 =$ _____

c $(5 \times 8) \times 2 =$ _____

6 Which of the problems in item 5 is the easiest for you to solve? In other words, in which order would you prefer to multiply the three factors? Why?

7 Find the products.

a $(6 \times 7) \times 10 =$ _____

b $(6 \times 10) \times 7 =$ _____

c $(7 \times 10) \times 6 =$ _____

8 Which of the problems in item 7 is the easiest for you to solve? In other words, in which order would you prefer to multiply the three factors? Why?

NAME _____ | **DATE** _____

Better Boxes page 1 of 2

Brad found some additional boxes in his storeroom. He is wondering if these boxes will work for packaging some of his hand-stitched baseballs.

For each of the following problems, assume that a ball fits into a $1 \times 1 \times 1$ space. Use numbers, labeled sketches, or words to find the answers. Show your work.

1 How many baseballs would fit in a box that has the dimensions $(3 \times 5) \times 2$?

2 How many baseballs would fit in a box that has the dimensions $(2 \times 4) \times 5$?

3 How many baseballs would fit in a box that has the dimensions $4 \times (3 \times 6)$?

4 How many baseballs would fit in this box?
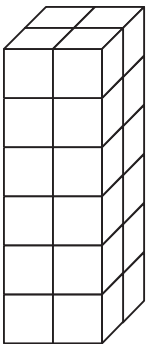
5 How many baseballs would fit in this box?

(continued on next page)

NAME | DATE
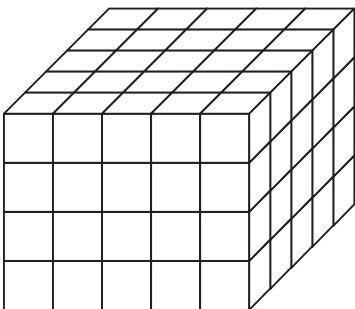
Better Boxes page 2 of 2

6 How many baseballs would fit in this box?
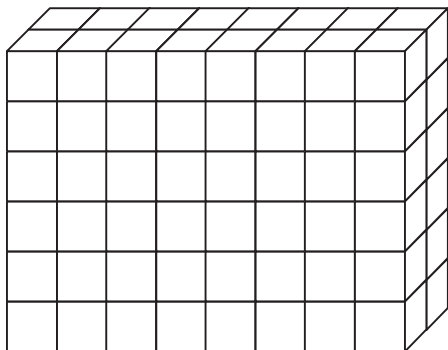
7 Brad is hoping to package exactly 48 baseballs together. He sees the side of a box in his storeroom that is 2 × 3. What is he hoping the other dimension is?

8 Brad is hoping to package exactly 64 baseballs together. He sees the side of a box in his storeroom that is 4 × 2. What is he hoping the other dimension is?

9 **CHALLENGE** Harris said that 15 × 9 is equivalent to 45 × 3 because you can multiply one dimension by 3 and divide the other dimension by 3. His partner said that only works when you double one number and halve the other. Who is right? Explain.

NAME _____ | **DATE** _____

Samantha's Strategies page 1 of 2

Samantha has been working with a variety of multiplication strategies.

1 Write an expression to describe each of the statements Samantha made.

a To solve 18×20, I find double 18 and then multiply by 10.

b To solve 16×18, I double and halve.

c To solve 31×8, I find 3×8, multiply by 10, and then add 1 group of 8.

2 Evaluate the three expressions above (in other words, solve the problems).

a

b

c

3 Fill in the blanks.

a $(5 \times 3) \times$ _____ $= 60$

b $4 \times ($ _____ $\times 9) = 72$

c $7 \times (2 \times$ _____$) = 42$

d $($ _____ $\times 5) \times 5 = 75$

e $(3 \times 3) \times$ _____ $= 27$

(continued on next page)

NAME _____ | DATE _____

Samantha's Strategies page 2 of 2

4 True or False?

a _____ $9 \times 9 = (10 \times 10) - 1$

b _____ $7 \times 21 = (20 \times 7) + (1 \times 7)$

c _____ $16 \times 20 = 10 \times (16 \times 2)$

d _____ $8 \times 13 = 2 \times 52$

e _____ $6 \times 18 = (6 \times 20) - (6 \times 2)$

5 William needs a box to hold his golf ball collection. He found a box that can fit 8 layers with 14 balls in each layer. How many golf balls can this box hold? Show your work.

6 William found a different box in his garage. The label outside said it would hold 120 golf balls. If 24 balls fit in each layer, how many layers tall is the box? Show your work.

7 **CHALLENGE** William has a total of 292 golf balls in his collection.

a Write an equation to show how many golf balls are left if William fills the two boxes described in problems 5 and 6 above.

b What are the dimensions of two different boxes that William could use to store the rest of his collection? Show your work.

8

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🏠 **Finding Factors** page 1 of 2

1 Find all the factors of each of the numbers below.

ex 15: 1, 3, 5, 15

a 21: _____, _____, _____, _____

b 28: _____, _____, _____, _____, _____, _____

c 42: _____, _____, _____, _____, _____, _____, _____, _____

d 60: _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____, _____

2 Find at least three multiples for each number below.

ex 15: 30, 45, 60

a 21: _____ , _____, _____

b 25: _____ , _____, _____

c 35: _____, _____, _____

d 42: _____, _____, _____

3 **a** List all the factors of 36.

b How do you know you have listed them all?

4 Milo is talking to his sister Lisa about factors. He said he thinks that any even number always has more factors than any odd number. Lisa said she doesn't agree with him. Explain who you agree with and why.

NAME | DATE

Finding Factors page 2 of 2

ex What factors do 12 and 24 have in common? 1, 2, 3, 4, 6, 12

5 What factors do 8 and 12 have in common?

6 What factors do 6 and 4 have in common?

ex What are two multiples that 5 and 6 have in common? 30, 60

7 What are two multiples that 4 and 8 have in common?

8 What are two multiples that 5 and 7 have in common?

9 CHALLENGE Huan is redesigning his bedroom, which is the shape of a rectangle.

    a Huan knows the area of his bedroom is 180 square feet. What are all the possible whole number dimensions of Huan's bedroom?

    b Which dimensions are the most likely dimensions for Huan's bedroom? Why?

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Piper's Ping-Pong Team page 1 of 2

Piper is the captain of her school's ping-pong team. Help Piper keep track of the team's equipment. Show your work using numbers, labeled sketches, or words.

1 Piper brought this box of ping-pong balls to practice on Tuesday.
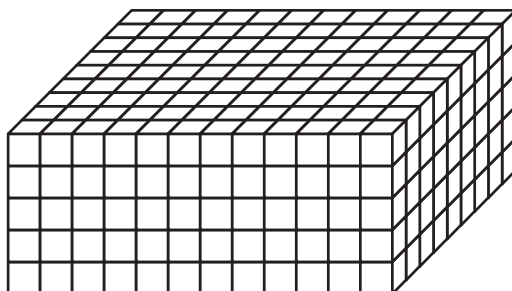
a How many ping-pong balls does the box hold if one ping-pong ball fits in a 1 unit × 1 unit × 1 unit space?

b How much cardboard does it take to make the box?

2 Piper needs to buy 320 new ping-pong balls for the team. Ping-pong balls come in sets of 16.

a How many sets of ping-pong balls should Piper buy?

b If one set of 16 ping-pong balls costs $8, how much will 320 ping-pong balls cost?

(continued on next page)

NAME _____ | DATE _____

Piper's Ping-Pong Team page 2 of 2

3 Piper saw a large box of ping-pong balls with 48 balls in each layer.

a If the box has 5 layers, how many balls can the box hold?

b If the box has 15 layers, how many balls can the box hold?

4 Is the equation true or false?

a $27 \times 15 = (20 \times 15) - (7 \times 15)$ _____

b $45 \times 18 = (40 \times 10) + (40 \times 8) + (5 \times 10) + (5 \times 8)$ _____

c $99 \times 31 = (100 \times 31) - (1 \times 31)$ _____

d $64 \times 15 = 32 \times 30$ _____

5 Write an expression for each item below.

ex To find 12 times 17, I multiply 10 times 17 and 2 times 17 and add the two products together. $(10 \times 17) + (2 \times 17)$

a To find 79 times 24, I multiply 80 times 24 and take off one group of 24.

b To find 12 times 13, I double 13 and halve 12 and then multiply.

c **CHALLENGE** To find 1,188 divided by 12, I think about 1,200 divided by 12— that's 100 groups of 12. 1,188 has 1 fewer group of 12.

NAME | **DATE**

🏠 Student Strategies page 1 of 2

1 Juliana loves multiplying by 8 because she can double-double-double.

a Write an expression to show how Juliana would solve 8×23.

b What is 8×23?

c Write an expression that shows a different way to solve 8×23.

2 Kevin was asked to add 6 and 9 then multiply by 17. Which expression shows Kevin's problem?

a $6 + 9 \times 17$ **b** $(6 + 9) \times 17$ **c** $6 + (9 \times 17)$

ex Elizabeth needed to multiply 7 and 8 and then subtract 13. Write an expression to show the problem. Then, solve the problem and write an equation.

a Expression
$(7 \times 8) - 13$

b Equation
$(7 \times 8) - 13 = 43$

3 Kaden divided 96 by 12 and then multiplied by 6. Write an expression to show the problem. Then, solve the problem and write an equation.

a Expression:

b Equation:

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Student Strategies page 2 of 2

Evaluate the following expressions.

4 $81 - (9 \times 7)$ **5** $(54 \div 6) \times 8$

How many $1 \times 1 \times 1$ cubes are in the following rectangular prisms? For each problem, write an expression and evaluate it to find the number of cubes.
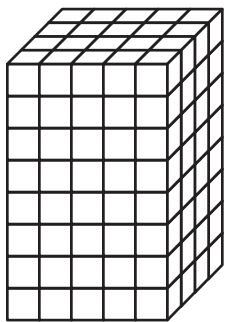
6 Expression: _____ Number of cubes: _____
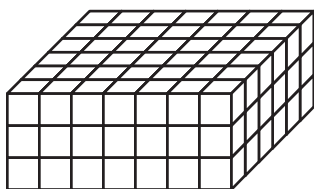
7 Expression: _____ Number of cubes: _____

8 **CHALLENGE** Chloe is sorting items at a thrift store. She finds a box of tiny blocks that has 1,344 written on the outside. She can see that each layer in the box has 64 blocks.

a How many layers of blocks are there?

b What is another way Chloe could arrange the 1,344 blocks to fit in a different box?

More Expressions & Equations page 1 of 2

1 Write a numerical expression that includes grouping symbols.

a To find 73 × 9, I find 73 times 10 and remove 1 group of 73.

b To find the volume of a box that has an 18 by 25 base and 12 layers, I multiply the area of the base times the height.

2 Write and solve an equation to represent each situation.

a To find 23 times 8, I double and halve.

b To find 24 times 17, I multiply 20 times 17 and add it to 4 times 17.

3 True or False?

a 12 × 17 = 6 × 34 _____

b 99 × 75 = (100 × 75) − 1 _____

c To find the volume of a box, I can multiply the length times the width. _____

4 Evaluate each expression (solve each problem).

a (7 × 8) × 9

b 2 (5 × 5) + 3 (4 × 4)

c (100 × 67) − (1 × 67)

d (98 × 47) + (2 × 47)

NAME | DATE

More Expressions & Equations page 2 of 2

5 How many $1 \times 1 \times 1$ cubes are in the following rectangular prisms? Write and solve equations to show.

a Equation for number of cubes:
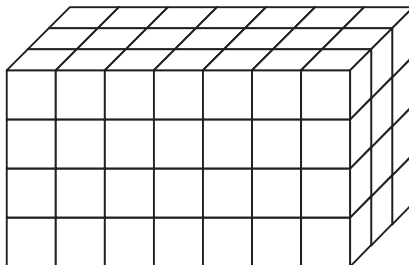
b Equation for number of cubes:
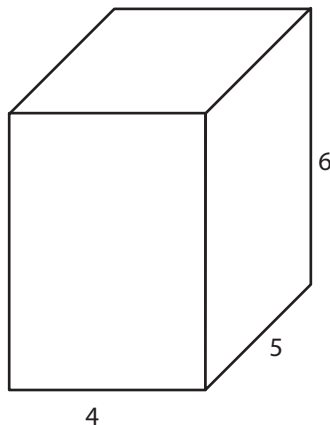
6 A box holds 125 balls. Each layer has 25 balls. How many layers does the box have? Show your work.

7 **CHALLENGE** A box holds 425 balls. Each layer has 17 balls. How many layers does the box have? Show your work.

Expressions, Equations & Stories page 1 of 2

1 Write an expression with parentheses for each statement below.

a I multiplied 7 times 8 and then I added 9. _____

b I multiplied 3 times 12 and then multiplied the product of 3 times 12 by 5.

c I subtracted 14 from 30 and then I multiplied the difference by 6.

2 Emir loves multiplying by 99 because he can use an over strategy.

a Write an expression to show how Emir would solve 99×76.

b What is 99×76? _____

c Show a different way to solve 99×76.

3 Erica likes to multiply by 25 because she can use the double-half strategy.

a Write an expression to show how Erica would solve 25×28.

b What is 25×28? _____

c Show a different way to solve 25×28.

4 Evaluate each expression.

a $(25 \times 10) \times 10 =$

b $4 (4 \times 4) + 3 (3 \times 3) =$

c $(100 \times 89) - (1 \times 89) =$

(continued on next page)

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Expressions, Equations & Stories page 2 of 2

5 For each problem below:

- Use numbers, words, or labeled sketches to solve the problem. Show all your work.
- Figure out the best way to handle the remainder, if there is one, for that situation.
- Write an equation to show each problem and the answer, labeled with the correct units.

a Thirty-eight fifth graders at Vernon Elementary are going on the field trip to the art museum. They are riding in vans that each hold 9 students. How many vans will they need for everyone to get to the art museum?

Equation _____

b When Alex and Marcus went to the store with their mom, she said they could split the change evenly. The total cost of their groceries was $57.32. She gave the cashier three $20 bills. How much money did Alex and Marcus each get?

Equation _____

c **CHALLENGE** On Friday afternoon, Maya realizes that she has put off her reading for too long and that she needs to finish her book by Monday. The book is 265 pages long. She is on page 127. How many pages will she need to read each night to finish the book before school on Monday morning?

Equation _____

NAME | DATE

🏠 Agree or Disagree? page 1 of 2

Choose 5 of the 6 problems on this page and the next. For each one you choose, write whether you agree or disagree. Then explain your thinking using numbers, words, and/or labeled sketches.

Do you agree or disagree? Explain your thinking.
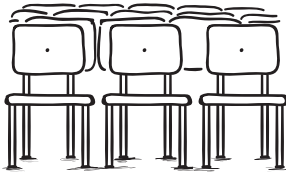
1 The 5th graders set up 20 rows of chairs with 25 chairs in each row for the assembly. Mrs. Lord asked if they'd set up enough chairs for all 552 students. Kamil said he could skip-count to find out how many chairs there were in all, and then they'd know if they had enough.

2 The track at the high school is 400 meters. After she ran 6 times around the track, Isuko said she'd gone more than 2 kilometers.
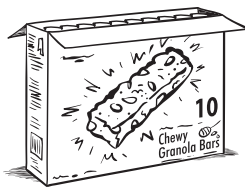
3 Mr. Madison needs 175 granola bars for the 5th grade field trip. The bars come in boxes of 10. He'll need to buy 17 boxes to have enough.

(continued on next page)

NAME | **DATE**

Agree or Disagree? page 2 of 2

Do you agree or disagree? Explain your thinking.

4 To multiply 247×4, you can do these smaller problems and add them together:

200×4

4×4

7×4

5 There are 46 kids in the After-School Club. Today they're going to the pool at the Community Center. If each minivan can take 6 kids, they'll need 8 minivans for all the kids.
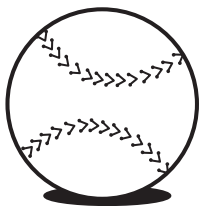
6 **CHALLENGE** Brad wants to package his baseballs in sets of 100. Bethany says the box that will take the least amount of cardboard for 100 baseballs is one with a base of 2×5 and a height of 10.

NAME _____ | **DATE** _____

🏠 Comparing Fractions page 1 of 2

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

a $\frac{1}{2}$
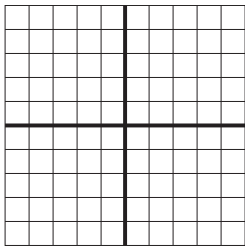
b $\frac{1}{4}$
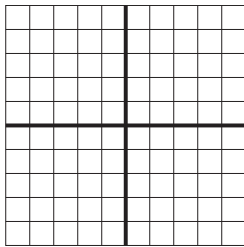
c $\frac{3}{10}$
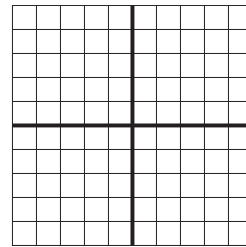
d $\frac{16}{10}$
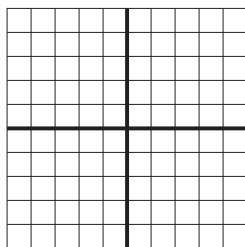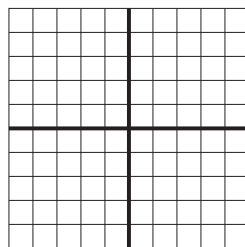
e $\frac{6}{4}$
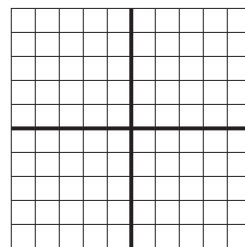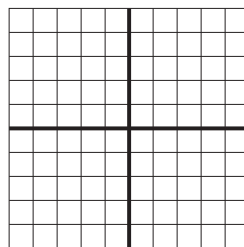
2 Use the pictures above to help complete each comparison below using <, >, or =.

ex $\frac{1}{2}$ > $\frac{3}{10}$

a $\frac{6}{4}$ _____ $1\frac{1}{2}$

b $\frac{6}{10}$ _____ $\frac{3}{4}$

c $\frac{16}{10}$ _____ $1\frac{1}{2}$

d $\frac{6}{10}$ _____ $\frac{6}{4}$

e $\frac{3}{10}$ _____ $\frac{1}{4}$

3 Add these fractions. (Hint: Think about money to help.)

a $\frac{1}{2} + \frac{1}{4} =$ _____

b $1\frac{1}{2} + \frac{3}{4} =$ _____

c $\frac{1}{2} + \frac{1}{10} =$ _____

d $\frac{3}{10} + \frac{1}{4} =$ _____

NAME | DATE

Comparing Fractions page 2 of 2

4 Francisco and his mother bought some fruit yesterday. They bought $2\frac{1}{2}$ pounds of peaches, $\frac{7}{10}$ of a pound of raspberries, and $1\frac{1}{4}$ pounds of apricots. How many pounds of fruit did they buy in all? Show all your work.

5 **CHALLENGE** Write three fraction addition problems in which the fractions have different denominators and the sum is 1.

ex $\frac{1}{2} + \frac{2}{4} = 1$

a

b

c

6 **CHALLENGE** Fill in the missing numerators and denominators to make each comparison true.

a $\frac{\boxed{}}{2} > \frac{4}{2}$　　　　**b** $1\frac{1}{4} = 1\frac{\boxed{}}{12}$　　　　**c** $\frac{16}{32} < \frac{\boxed{}}{8}$

NAME | DATE

🏠 More Adding Fractions page 1 of 2

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

	First	Second	Add Them	Sum
a	$\frac{1}{2}$	$\frac{3}{8}$		
b	$\frac{3}{4}$	$\frac{3}{8}$		
c	$\frac{5}{8}$	$\frac{1}{2}$		
d	$\frac{3}{4}$	$\frac{7}{8}$		
e	$\frac{1}{4}$	$\frac{2}{3}$		
f	$\frac{3}{4}$	$\frac{2}{3}$		
g	$\frac{5}{6}$	$\frac{3}{4}$		
h	$\frac{1}{2}$	$\frac{5}{6}$		

NAME _____ | **DATE** _____

More Adding Fractions page 2 of 2

Show your work for each problem using numbers, sketches, or words.

2 Abby and Lauren are preparing for a dance performance. On Monday, they practiced for $\frac{2}{3}$ of an hour. On Tuesday, they practiced for $\frac{5}{6}$ of an hour. How long did they practice on Monday and Tuesday together?

3 On Wednesday, Abby and Lauren could not practice together, so they practiced separately. Abby practiced for $\frac{11}{12}$ of an hour and Lauren practiced for $\frac{2}{3}$ of an hour. How long did they practice on Wednesday?

4 **CHALLENGE** If you are adding two fractions that are both greater than $\frac{1}{2}$, what must be true about the sum? Give three examples to support your thinking.

The sum must be:

5 **CHALLENGE** If you are adding two fractions that are both less than $\frac{1}{2}$, what must be true about the sum? Give three examples to support your thinking.

The sum must be:

NAME _____ | DATE _____

🏠 Cafeteria Problems page 1 of 2

1 The cafeteria at King Elementary asked the students to vote on their favorite main dishes. The circle graphs below show the results. Use the information to answer the questions below.

Fourth Grade Favorites   **Fifth Grade Favorites**   **Key**

Cheese Pizza
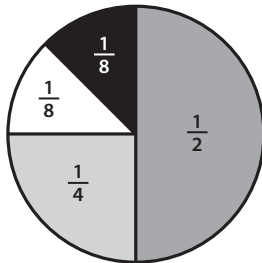
Turkey Burgers

Chicken Nuggets
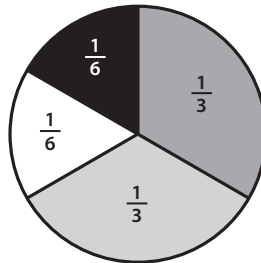
Super Salad

a What fraction of the fourth graders did *not* vote for super salad? Show your work.

b What fraction of the fifth grade voted for turkey burgers or chicken nuggets? Show your work.

c 192 fourth graders voted. How many of them voted for turkey burgers? Show your work.

d 174 fifth graders voted. How many of them voted for chicken nuggets?

(continued on next page)

NAME | DATE

Cafeteria Problems page 2 of 2

2 What is:

a $\frac{1}{2}$ of 60?

b $\frac{1}{3} \times 60$?

c $\frac{1}{2}$ of 100?

d $\frac{1}{5} \times 100$?

3 While waiting for his grandma to arrive, Patrick spent $\frac{1}{2}$ of an hour on the phone with a friend and $\frac{1}{4}$ of an hour listening to the radio. How long did Patrick spend waiting for his grandma? Write your answer both in minutes and as a fraction of an hour.

4 Beth walked $\frac{1}{3}$ of a mile from her house to her friend's house, $\frac{1}{4}$ of a mile to the post office, and then another $\frac{1}{2}$ of a mile from the post office back home. How far did Beth walk?

5 **CHALLENGE** Rodney and Josiah each bought a package of the same kind of cookies at the store. Rodney ate $\frac{1}{2}$ package of cookies on Monday and $\frac{1}{3}$ of the same package on Tuesday. Josiah ate $\frac{5}{12}$ of his package on Monday and $\frac{1}{2}$ of the package on Tuesday. Who ate more? How much more?

Adding & Subtracting Fractions page 1 of 2

1 Solve the problems on this page. If your answer is an improper fraction, find its equivalent mixed number.

$$\frac{3}{4} + \frac{1}{2} = \frac{3}{4} + \frac{2}{4} = \frac{5}{4} = 1\frac{1}{4}$$

$\frac{5}{4}$ is an improper fraction because 5 is greater than 4. $\frac{4}{4}$ is equal to 1, so $\frac{5}{4}$ is equal to $1\frac{1}{4}$.

a $1\frac{5}{10} - \frac{4}{10} =$

b $\frac{7}{4} - \frac{3}{4} =$

c $\frac{4}{12} + 1\frac{2}{3} =$

d $1\frac{2}{3} + \frac{1}{6} =$

e $\frac{5}{10} - \frac{1}{4} =$

f $4\frac{30}{60} + 1\frac{1}{4} =$

2 Find two different ways to show that $\frac{1}{3} + \frac{1}{4}$ is *not* equal to $\frac{2}{7}$. You can use numbers, words, and labeled sketches.

Adding & Subtracting Fractions page 2 of 2

3 Dan must do homework for $\frac{1}{2}$ an hour and clean his room for $\frac{1}{3}$ of an hour before he can play. What fraction of an hour must Dan do homework and clean before he can play?

4 Danielle found a nickel on the playground at school. She also found $0.20 on the sidewalk.

   a How much money did she find?

   b What fraction of a dollar did Danielle find?

5 **CHALLENGE** Mariah has an after-school babysitting job. This is a record of the number of hours she worked last week.

Day of the Week	Baby-sitting Hours
Monday	$2\frac{1}{2}$
Tuesday	$3\frac{1}{2}$
Wednesday	$2\frac{1}{4}$
Thursday	$3\frac{2}{3}$

Mariah gets paid $6 per hour. How much money did she earn babysitting last week? Show your work.

NAME _____ | **DATE** _____

Fraction Action page 1 of 2

1 Color some of the circles in each set to show the fractions below.

a $\frac{1}{2}$
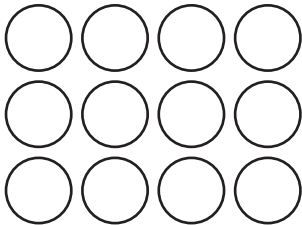
b $\frac{1}{4}$
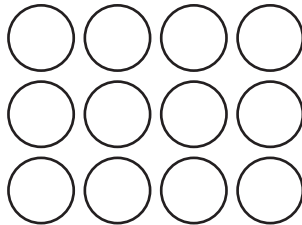
c $\frac{3}{4}$
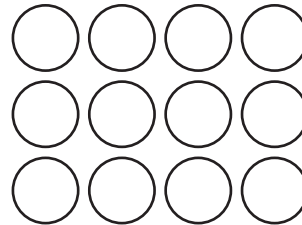
d $\frac{1}{6}$
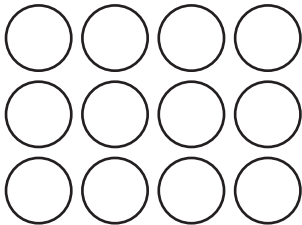
e $\frac{2}{6}$
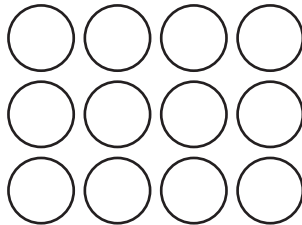
f $\frac{5}{6}$
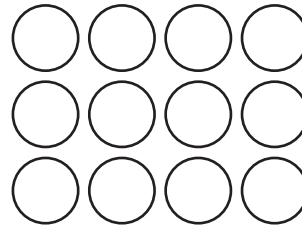
g $\frac{1}{3}$
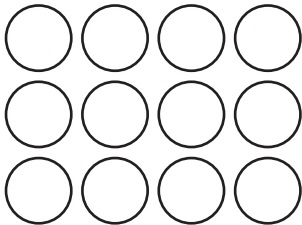
h $\frac{3}{3}$
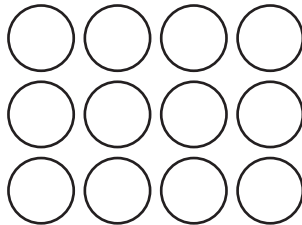
i $\frac{0}{3}$
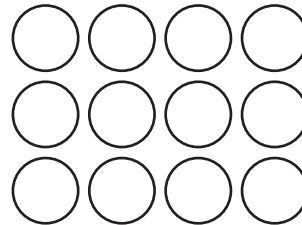
2 Add the following fractions. If the sum is greater than 1, write the answer as both an improper fraction and a mixed number.

ex $\frac{1}{2} + \frac{3}{4} = \frac{5}{4} = 1\frac{1}{4}$

a $\frac{0}{3} + \frac{2}{8}$

b $\frac{1}{4} + \frac{5}{6}$

c $\frac{1}{6} + \frac{1}{3}$

d $\frac{3}{3} + \frac{3}{4}$

NAME _____ | DATE _____

Fraction Action page 2 of 2

3 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 in all yesterday?

a Estimate the answer. _____

b Find the exact answer. Show all your work.

4 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 in all?

a Estimate the answer. _____

b Find the exact answer. Show all your work.

5 **CHALLENGE** Camila had a large collection of basketball cards. She gave half of them to her friend Erin and a sixth of them to her brother. She still has 150 cards left. How many cards did she start with? Show all your work.

NAME _____ | **DATE** _____

Using a Ratio Table page 1 of 2

1 Use a ratio table to multiply the numbers.

ex 23 × 26

1	2	4	10	20	26
23	46	92	230	460	598

a 35 × 44

1	2	4	40	44
35				

b 39 × 20

1	2	20
39		

c 18 × 65

1	2	20	18
65			

d 4 × 18

e 75 × 15

1	100	50	25	75
15				

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NAME _____ | DATE _____

Using a Ratio Table page 2 of 2

2 True or False?

a $98 \times 34 = (100 \times 34) - (2 \times 34)$ ____

b $46 \times 28 = 23 \times 56$ ____

3 Veronica has to multiply 398×18. She says she can multiply 400×18 and then take away one group of 18.

a Do you agree with Veronica? Explain.

b Write an expression that shows Veronica's thinking.

c What is 398×18? Show your work.

4 **CHALLENGE** The aquarium has 198 fish tanks with 15 fish in each. They also have 297 tanks with 12 crustaceans in each. Does the aquarium have more fish or more crustaceans? How many more? Make an estimate and explain your reasoning. Then determine the actual answer.

a Estimate and reasoning:

b Actual answer: (Show your work.)

c Is your answer reasonable? (Think about your estimate.)

NAME _____ | DATE _____

🏠 In the Library page 1 of 2

1 The librarian at our school asked the fourth and fifth graders to vote on their favorite kind of book. The circle graphs below show the results. Use the information to answer the questions below.

Fourth Grade Favorites   **Fifth Grade Favorites**   **Key**
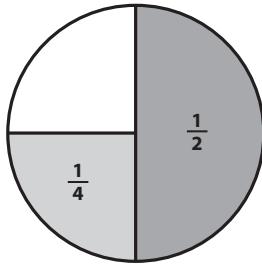
- Fiction
- Fantasy
- Nonfiction
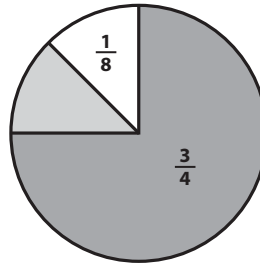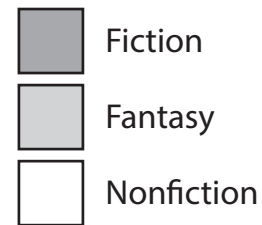
a What fraction of the fourth graders said they liked nonfiction books best? How do you know?

b If there are 96 fourth graders, how many like fantasy books best? Show your work.

c What fraction of the fifth graders said they like fantasy books best? How do you know?

d If there are 112 fifth graders, how many like nonfiction books best? Show your work.

e What fraction of the fifth graders said they liked fiction books best? How do you know?

(continued on next page)

NAME | DATE

In the Library page 2 of 2

2 Madeline walked $1\frac{1}{2}$ miles to her Aunt Jenny's house yesterday morning. After visiting with Aunt Jenny, Madeline walked $\frac{3}{4}$ of a mile to the park, where her mother picked her up. How many miles in all did she walk yesterday? Show all your work.

3 Sara and her mother bought some vegetables at the farmer's market yesterday. They bought $2\frac{3}{4}$ pounds of cabbage, $\frac{1}{2}$ a pound of onions, and $1\frac{3}{8}$ pounds of carrots. How many pounds of vegetables did they buy in all? Show all your work.

4 **CHALLENGE** Madison went to the mall with her big sister last weekend. Their mom dropped them off at 1:00 and said, "I'll pick you up at 2:30." The girls spent $\frac{5}{6}$ of an hour at the toy store, $\frac{2}{3}$ of an hour at the pet store, and $\frac{1}{2}$ an hour at the food court. When they got back to the bench to meet their mom, she was already there. She said, "Where have you been? I've been waiting _____ of an hour for you!" How long had their mom been waiting for them?

NAME _____ | **DATE** _____

📖 Fraction Addition & Subtraction Story Problems page 1 of 2

1 Find the sum or the difference for each pair of numbers. Show all your work.

a $\frac{5}{14} + \frac{4}{5} =$

b $\frac{7}{9} - \frac{4}{7} =$

c $1\frac{7}{15} + \frac{3}{9} =$

d $2\frac{1}{3} - 1\frac{3}{5} =$

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 have when they were finished? Show all your work.

(continued on next page)

NAME _____ | **DATE** _____

Fraction Addition & Subtraction Story Problems page 2 of 2

3 Lisa drank $\frac{7}{16}$ of a bottle of water during the soccer game. Julianne drank $\frac{2}{3}$ of the water in a bottle that was the same size as Lisa's. Who drank more water and by exactly how much? Show all of your work.

4 **CHALLENGE** Austin went to the science museum. He was there for 2 hours. He spent $\frac{3}{5}$ of his time doing experiments. Then, he spent $\frac{1}{3}$ of his time at the water station. Finally, he spent the rest of his time looking at skeletons. How long did Austin spend looking at skeletons? Show all your work, and express your answer as a number of minutes and as a fraction of an hour.

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NAME _____ | **DATE** _____

🏠 **Find the Greater Fraction** page 1 of 2

1 Find the least common multiple for each pair of numbers. Show all your work.

ex 3 and 5

3: 3, 6, 9, 12, ⑮ 18
5: 5, 10, ⑮ 20
The LCM is 15.

a 4 and 6

b 3 and 7

c 5 and 8

d 6 and 9

2 Use the least common multiple to find equivalent fractions for each fraction pair. Then, use the symbol < or > to show the bigger fraction.

ex $\frac{3}{4}$ and $\frac{4}{6}$

⬜4 4, 8, ⑫ 16
⬜6 6, ⑫ 18, 24

$\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$ $\frac{4}{6} = \frac{4 \times 2}{6 \times 2} = \frac{8}{12}$

$\frac{9}{12} > \frac{8}{12}$ so $\frac{3}{4} > \frac{4}{6}$

a $\frac{5}{8}$ and $\frac{2}{3}$

b $\frac{1}{6}$ and $\frac{2}{9}$

c $\frac{7}{12}$ and $\frac{5}{8}$

(continued on next page)

NAME | DATE

Find the Greater Fraction page 2 of 2

Solve the story problems below. Show your work using numbers, sketches, or words.

3 Matthew read $\frac{2}{3}$ of a book. Craig read $\frac{4}{5}$ of the same book. Who read more? How much more?

4 Carlos had two extra sandwiches. They were exactly the same size. He gave $\frac{7}{9}$ of the first sandwich to his friend Ben and $\frac{4}{6}$ of the second sandwich to his friend Corey.

a Whose piece is bigger, Corey's or Ben's?

b CHALLENGE If Carlos ate the remaining pieces of the two sandwiches, did he get more or less than Corey? Did he get more or less than Ben?

NAME _____ | **DATE** _____

🏠 Working with Fractions page 1 of 2

Which is greater, $\frac{2}{3}$ or $\frac{4}{5}$? Exactly how much difference is there between these two fractions? If you want to compare, add, or subtract two fractions, rewrite them so they both have the same denominator. To do this:

- Find the least common multiple of the denominators of the fractions.

   multiples of 3   3, 6, 9, 12, 15
   multiples of 5   5, 10, 15
   The least common multiple of 3 and 5 is 15.

- Multiply the numerator and denominator of each fraction by the same number so the denominators are equal.

$$\frac{2 \times 5}{3 \times 5} = \frac{10}{15} \qquad \frac{4 \times 3}{5 \times 3} = \frac{12}{15} \qquad \frac{4}{5} \text{ is greater than } \frac{2}{3} \text{ by exactly } \frac{2}{15}.$$

---

1 Find the least common multiple (LCM) of each pair of numbers.

ex 4 and 10   **a** 5 and 6   **b** 2 and 7

   4, 8, 12, 16, 20
   10, 20
   20 is the LCM of 4 and 10

2 Add or subtract the fractions by rewriting them so they have common denominators. Hint: Use the information from problem 1 to help.

ex $\frac{3}{4} - \frac{7}{10} =$ **a** $\frac{4}{5} + \frac{5}{6} =$ **b** $\frac{4}{7} - \frac{1}{2} =$

   $\frac{3 \times 5}{4 \times 5} = \frac{15}{20}$ $\frac{7 \times 2}{10 \times 2} = \frac{14}{20}$

   $\frac{15}{20} - \frac{14}{20} = \frac{1}{20}$

3 Find the greatest common factor for each pair of numbers below. Use extra paper if you need more space.

16	15
28	36
GCF	GCF

(continued on next page)

NAME | DATE

Working with Fractions page 2 of 2

4 Find the simplest form of each fraction below.

a $\frac{16}{28}$	b $\frac{4}{48}$
c $\frac{2}{14}$	d $\frac{28}{16}$
e $\frac{15}{36}$	f $\frac{56}{42}$

5 Add or subtract. Show your work. Hint: Use the information in problem 4 above to help.

a $\frac{16}{28} + \frac{2}{14} =$

b $\frac{15}{36} + \frac{4}{48} =$

c $\frac{28}{16} + \frac{25}{100} =$

6 Alicia says that the greatest common factor of 8 and 12 is 24. Do you agree or disagree? Explain.

7 Felix says that $\frac{11}{33}$ is in simplest form. Do you agree or disagree? Explain.

8 **CHALLENGE** List three examples of times when people need to add or subtract fractions in their daily lives.

NAME | DATE

Finding Equivalent Expressions page 1 of 2

1 Match each fraction expression on the top with an equivalent decimal expression on the bottom.

Fraction Expressions	$\frac{4}{10} + \frac{20}{100}$	$\frac{60}{100} - \frac{1}{10}$	$\frac{4}{100} + \frac{3}{10}$	$\frac{14}{10} + \frac{75}{100}$	$\frac{15}{100} - \frac{1}{10}$	$\frac{14}{100} + \frac{12}{100}$

Decimal Expressions	$0.04 + 0.3$	$1.4 + 0.75$	$0.14 + 0.12$	$0.4 + 0.20$	$0.60 - 0.1$	$0.15 - 0.1$

2 Evaluate each expression. Represent your answer as both a fraction and a decimal.

a $0.60 - 0.25$

b $0.70 - 0.55$

c $0.2 + 0.05$

d $\frac{40}{100} - \frac{1}{10}$

e $\frac{4}{10} + \frac{60}{100}$

f $\frac{9}{10} + \frac{30}{100}$

3 Students at Jonah's school can walk or run laps at recess. At the end of each month, the class that has covered the most distance is recognized by the parent group.

a Jonah and Hayley walked $4\frac{1}{3}$ laps around the track yesterday and $3\frac{1}{2}$ laps today. How many laps did they walk together in the last two days? Show your work.

b Jonah ran $1\frac{3}{4}$ laps on Monday, $2\frac{3}{10}$ laps on Tuesday, and $6\frac{1}{5}$ laps on Wednesday. How much farther did he run on Wednesday than on the other two days combined? Show your work.

NAME | DATE

Finding Equivalent Expressions page 2 of 2

4 Jonah and Hayley made brownies to bring as a class treat. Some were plain and some had sprinkles. The class ate $\frac{3}{4}$ of one pan and $\frac{1}{6}$ of another pan of the plain brownies. They ate $\frac{5}{6}$ of one pan and $\frac{1}{10}$ of another pan of brownies with sprinkles.

a If the brownie pans were the same size, did the class eat more plain brownies or more brownies with sprinkles?

b How much more? Show your work.

5 **CHALLENGE** A coach took his team out for pizza after their last game. There were 14 players, so they had to sit in smaller groups at different tables. Six players sat at one table and got 4 small pizzas to share equally. The other 8 players sat at a different table and got 6 small pizzas to share equally. Afterwards, one of the players said it wasn't fair because some kids got more pizza than others. Do you agree? Use numbers, words, or labeled sketches to explain your answer.

Candy Sales Graph & More page 1 of 2

The organizers of a concession stand were thinking about making changes to the types of candy they sold. They made a bar graph to show the profits earned at the first two games of the season for each type of candy. Use the graph to answer the questions below. Show all your work.

1 Look at the information for bubble gum.

a What was the profit for bubble gum during Game 1?

b What was the profit for bubble gum during Game 2?

c How much more profit was made on bubble gum during Game 2 than Game 1?

2 How much more profit was made on hard candy during Game 2 than Game 1?

3 How much more profit was made on sour strings during Game 2 than Game 1?

4 How much greater was the profit from sales of all three candies during Game 2 than during Game 1?

Money for Concessions

Legend
- Game 1
- Game 2

Bubble Gum   Hard Candy   Sour Strings
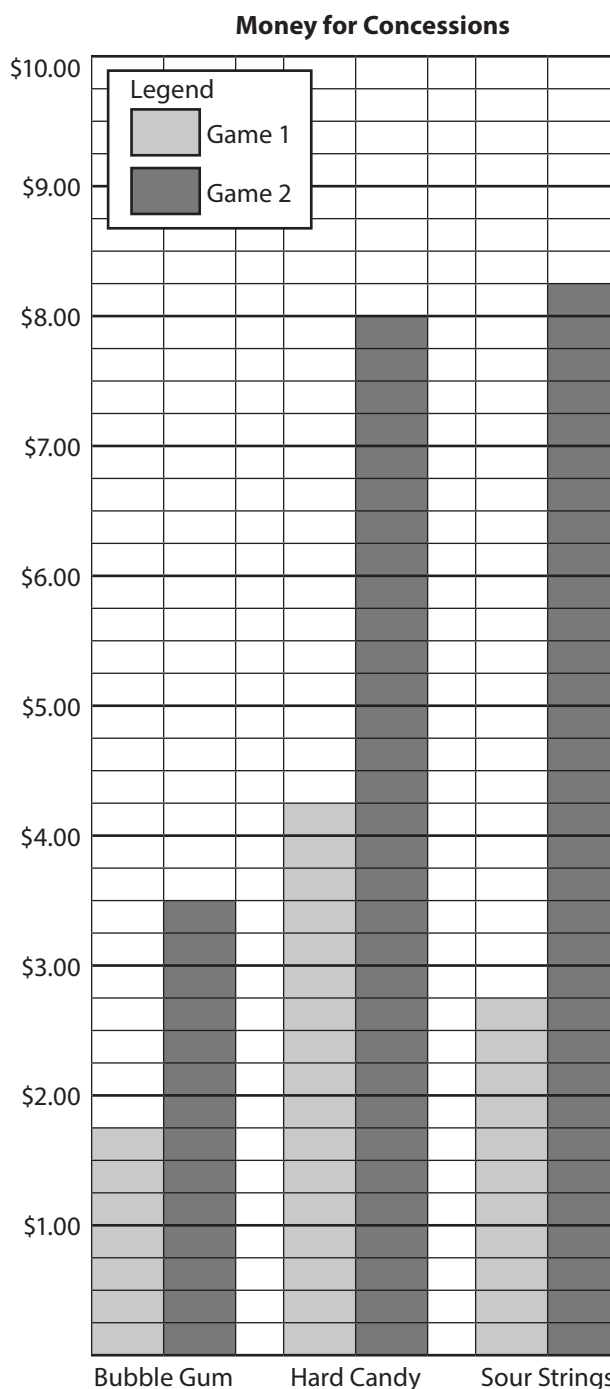
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NAME |DATE

Candy Sales Graph & More page 2 of 2

5 Evaluate (solve) the following:

  a $(12 \times 5) \times 2$

  b $10 \times (24 \div 4)$

  c $(150 \div 10) + (5 \times 5)$

6 Trina said $1.05 + $2.25 = $3.75 because a dollar and 2 quarters plus 2 dollars and a quarter equals 3 dollars and 3 quarters. Do you agree with her statement? Explain.

7 Evaluate (solve) the following:

  a $1.37 + 8.26$

  b $5.01 + 5.10$

8 **CHALLENGE** A box holds 540 balls. Each layer has 18 balls. How many layers does the box have?
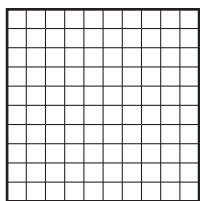
NAME | DATE

Modeling Decimals page 1 of 2

The base ten models below can be used to represent decimal numbers.

| 1 whole | 1 tenth | 1 hundredth | 1 thousandth |
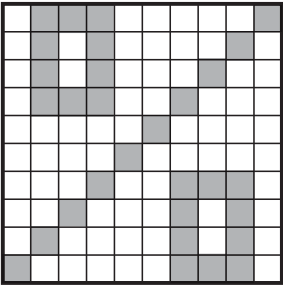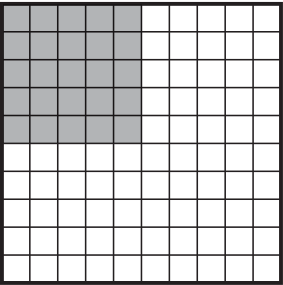
1 Write the number that each model represents.
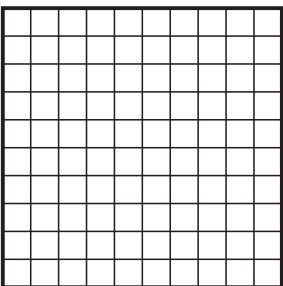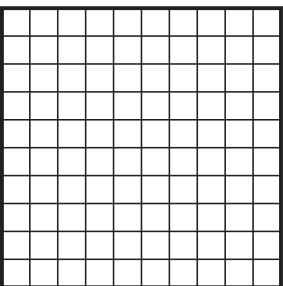
Model	Decimal Number
ex	1.025
a	
b	
c	

(continued on next page)

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NAME | **DATE**

Modeling Decimals page 2 of 2

2 For each question, fill in the missing decimal or fraction equivalent(s), or shade the grid to match the missing numbers.

a

Decimal:

Fraction Equivalent(s):

b

Decimal:

Fraction Equivalent(s):

c

Decimal: **0.2**

Fraction Equivalent(s):

d

Decimal:

Fraction Equivalent(s): $\dfrac{60}{100}$

3 **CHALLENGE** Julian walked $\frac{6}{10}$ of a mile to his friend's house and then another $\frac{35}{100}$ of a mile to the store. He walked $\frac{1}{4}$ of a mile back home. Julian's sister said he walked $1\frac{1}{5}$ miles. Do you agree? Why or why not?

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🏠 Decimal & Fraction Grids page 1 of 2

For each question, fill in the missing decimal or fraction equivalent(s), or shade the grid to match the numbers given.

1
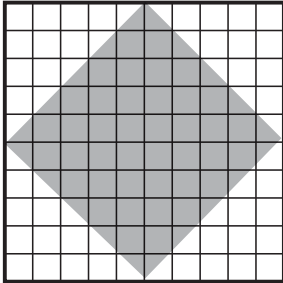
Decimal:

Fraction Equivalent(s):

2
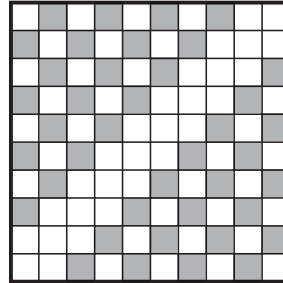
Decimal:

Fraction Equivalent(s):

3
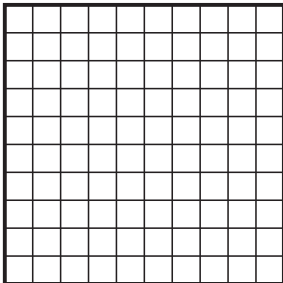
Decimal: **0.5**

Fraction Equivalent(s):

4
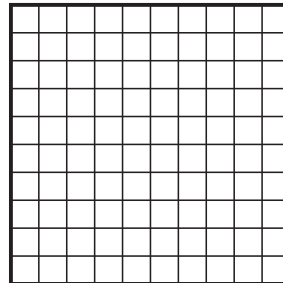
Decimal:

Fraction Equivalent(s): $\dfrac{70}{100}$

5 Use one of these symbols (< , >, or =) to compare each pair of decimal numbers.

a   6.0 ____ 6.00

b   5.514 ____ 5.541

c   13.04 ____ 13.4

d   32.130 ____ 32.103

e   10.010 ____ 10.100

(continued on next page)

NAME | DATE

Decimal & Fraction Grids page 2 of 2

6 Round each decimal to the nearest one, tenth, and hundredth. (Hint: Look at the digit to the right of the place to which you're rounding. If it's less than 5, round down. If it's 5 or more, round up.)

Number	To the Nearest 1	To the Nearest Tenth	To the Nearest Hundredth
ex 4.862	5.0	4.9	4.86
a 0.048			
b 14.964			
c 7.065			
d 194.124			

7 Complete the table below to show each fraction as a decimal, and each decimal as a fraction.

Fraction	Decimal
a $\frac{3}{4}$	
b	0.20
c $\frac{3}{100}$	
d	0.72
e $\frac{6}{10}$	

8 **CHALLENGE** Riley collected rain for several weeks in a rain gauge. He collected 1.48 inches the first week, half that much the second week, and one inch the third week. How much more rain will Riley need to collect before he has 5 inches?

48

NAME | DATE

Read, Write & Compare Decimals page 1 of 2

1 Complete the chart.

Base-Ten Numeral	Expanded Form
25.893	$(2 \times 10) + (5 \times 1) + (8 \times \frac{1}{10}) + (9 \times \frac{1}{100}) + (3 \times \frac{1}{1000})$
7.043	
4.570	
	$(3 \times 1) + (6 \times \frac{1}{10}) + (1 \times \frac{1}{100}) + (3 \times \frac{1}{1000})$
	$(6 \times 1) + (4 \times \frac{1}{10}) + (9 \times \frac{1}{100})$
0.317	
	$(1 \times 10) + (8 \times \frac{1}{10}) + (6 \times \frac{1}{100}) + (3 \times \frac{1}{1000})$

2 Complete the chart.

Base-Ten Numeral	Number Name
1.893	one and eight hundred ninety-three thousandths
0.600	
1.503	
1.013	
	two and two thousandths
0.037	
	forty thousandths

3 List the decimals from problem 2 in order from least to greatest. Include the example.

_____ < _____ < _____ < _____ < _____ < _____ < _____

Read, Write & Compare Decimals page 2 of 2

4 Fill in the bubble to show which of the two decimal numbers is greater. Use numbers, words, or labeled sketches to explain your answer. How do you know the number you've selected is greater?

○   1.200

○   1.002

5 Write four decimal numbers that are less than 1.004.

_____, _____, _____, _____

6 Write four decimal numbers that have an even number in the tenths place, an odd number in the hundredths place, and a prime number in the thousandths place.

_____, _____, _____, _____

7 **CHALLENGE** Rob babysits the kids next door every day after school for 1.5 hours. He earns $3.50 an hour. How much money will he earn in 6 weeks if school is in session 5 days a week the whole time? Show your work.

NAME _____ | **DATE** _____

🏠 **More Decimal Practice** page 1 of 2

1 Round each decimal number to the nearest whole number.

    a 9.7

    b 16.45

    c 25.3

2 Round each decimal number to the nearest tenth.

    a 1.65

    b 0.31

    c 8.07

3 <u>CHALLENGE</u> Round each decimal number to the nearest hundredth.

    a 0.351

    b 0.289

    c 3.016

4 Solve.

$$
\begin{array}{r} 8.53 \\ + 2.48 \\ \hline \end{array}
\qquad
\begin{array}{r} 8.98 \\ - 4.76 \\ \hline \end{array}
\qquad
\begin{array}{r} 17.89 \\ + 12.12 \\ \hline \end{array}
$$

5 Solve. Show your work.

    $9.98 - 2.53 =$ $7.68 + 13.07 =$ $100.03 - 16.28 =$

NAME | DATE

More Decimal Practice page 2 of 2

Story Problems

Show your work using numbers, labeled sketches, or words.

6 Rachel has $10.00. She wants to buy a book that costs $6.79. Will she have enough money left over to buy a pen for $3.50? Explain.

7 Diego has 3 dollar bills, 3 quarters, 1 dime, and 7 pennies. Sam has 2 dollar bills, 5 quarters, 6 dimes, and 9 pennies.

a Who has more money? How much more?

b How much money do the boys have in all?

Review: Show your work using numbers, labeled sketches, or words.

8 Tonya has a box that measures 12 cm by 7 cm by 19 cm. What is the volume of the box?

9 Eric is keeping track of rainwater. On Monday, it rained $1\frac{3}{4}$ cm. On Tuesday it rained $2\frac{1}{8}$ cm. How much more did it rain on Tuesday than on Monday?

NAME _____ | DATE _____

Decimal Practice page 1 of 2

1 Fill in the blanks to convert the units in each problem below.
The following information may help you:

- 1 gigabyte (GB) is equal to 1,000 megabytes (MB).
- 1 megabyte (MB) is equal to 1,000 kilobytes (KB).
- 1 kilobyte (KB) is equal to 1,000 bytes.

a 9 KB = _____ bytes

b 43 KB = _____ bytes

c 9.6 KB = _____ bytes

d 8 MB = _____ KB

e 41 MB = _____ KB

f 7.3 MB = _____ KB

g 7 GB = _____ MB

h 56 GB = _____ MB

i 2.4 GB = _____ MB

j 16 MB = _____ bytes

2 Round each decimal number to the nearest whole number.

a 5.3

b 16.8

c 21.25

(continued on next page)

NAME | DATE

Decimal Practice page 2 of 2

3 Round each number to the nearest tenth.

a 8.85

b 12.09

c 100.15

4 Round each number to the nearest hundredth.

a 24.275

b 36.308

c 3.495

5 Add or subtract the decimals.

2.03	5.01	25.67	100.00
+ 4.78	− 3.98	+ 14.32	− 96.75

6 Isabella is building a tree fort. The base of the fort is 78 inches wide by 92 inches long.

a What is the area of the base in square inches? Show your work.

b **CHALLENGE** What is the area of the base in square feet? Show your work.

NAME _____ |DATE _____

🏠 Very Small & Very Large Numbers page 1 of 2

1 Write two fractions that are equal to each decimal number.

0.1 _____ and _____   0.01 _____ and _____

0.001 _____ and _____   0.05 _____ and _____

2 Complete the chart below.

Number	0.1 less	0.1 greater	0.01 less	0.01 greater	Challenge 0.001 less	0.001 greater
1.2	1.1	1.3	1.19	1.21	1.199	1.201
8.73						
4.06						
6.9						
2.896						
6						

3 Round each number to the place shown to complete the chart below.

Number	Nearest tenth (0.1) Look at the 0.01 place.	Nearest hundredth (0.01) Look at the 0.001 place.	Challenge Nearest thousandth (0.001) Look at the 0.0001 place.
0.1629	0.2	0.16	0.163
0.9608			
0.0274			
6.0085			

(continued on next page)

NAME | DATE

Very Small & Very Large Numbers page 2 of 2

4 A micrometer is one-millionth of a meter (0.000001 m): ten thousand times as short as a centimeter (0.01 m). How many micrometers long is one edge of a centimeter cube?

5 The football team for the University of Tennessee, the Tennessee Volunteers, plays its home games in the Neyland Stadium in Knoxville, Tennessee. The stadium holds about 100,000 people. (You can do an image search on the internet to see what this many people looks like.)

a How many stadiums would it take to hold 1 million people (a bit less than the number of people living in Dallas, Texas)?

b According to estimates, there are over 300 million people living in the United States. How many Neyland Stadiums would it take to hold 300 million people?

6 The table below shows the estimated population of different countries as of 2012. Round each number to complete the table.

Country	Population	Nearest 1,000,000	Nearest 100,000	Nearest 10,000
Philippines	103,775,000	104,000,000	103,800,000	103,780,000
Iran	78,868,710			
France	65,630,690			
South Korea	48,860,500			
Argentina	42,192,490			
Sudan	34,206,710			

NAME | **DATE**

# Division Games page 1 of 6

Note to Families

One way to solve a long division problem is to picture it in the form of a rectangle. When you do this, the number you're dividing by is one of the dimensions and the number being divided is the area of the rectangle. Quotients Win will help students practice using this strategy to sketch and solve such problems as 150 ÷ 10 and 220 ÷ 22. Your fifth grader can show you how to make the sketches, and there is an example below for your reference. There are two record sheets so you can play the game twice. This Home Connection includes a second division game, Go for Zero, if you and your child want to play a more challenging game.

For Quotients Win you'll need:
- 2 pencils
- colored pencils or markers in 2 different colors
- a paperclip

For Go for Zero you'll need:
- a calculator
- pencils
- 2 game spinners (page 3 of 6)
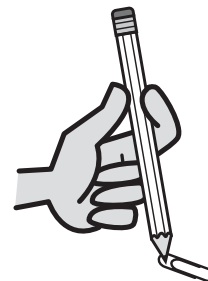
Use your pencil and the paperclip as a spinner.

Instructions for Quotients Win

1 Take turns spinning the spinner one time each. The player with the higher number gets to pick his or her color marker or colored pencil and go first.

2 Spin the spinner to see which problem on the game sheet you will solve.

3 Make a labeled sketch of the problem on the game sheet and fill in the answer. Be sure to use your colored pencil or marker to sketch the dimensions and a regular pencil for the rest of the work.

5

100 60

160 ÷ 10 = 16

6

220 ÷ 20 = _____

Theo I spun a 5, so I have to do problem 5 on the game sheet. That's 160 ÷ 10. First I'll show 10 on the side and then start filling in the array until I get to 160. My rectangle turned out to be 16 along the other side, so that's the answer.

4 Take turns spinning and solving problems until you have each gone 3 times. If you spin the number of a problem that has already been solved, spin again until you get the number of a problem that has not been solved yet. (You have to use the first number that has not been solved.) When it's the other player's turn, be sure to watch, help, and double-check his or her work.

5 At the end of the game, add your quotients and record your score at the bottom of the sheet. The player with the higher score wins.

NAME _____ | **DATE** _____

Division Games page 2 of 6

Instructions for Go for Zero

1 Take turns spinning the spinner once. The person with the higher number goes first.

2 Choose any 3-digit number that is less than or equal to 900. Enter it into the calculator and then give the calculator to your partner.

3 Player 2 uses the calculator to reduce the number to 0 by adding, subtracting, multiplying, or dividing by single-digit numbers other than zero. You can make as many as 5 calculations (but no more) to get the original number down to zero. Do your work on the calculator, but record each move on the record sheet.

4 Play back and forth until you have each had 3 turns. Then count up the total number of calculations you made and use the more or less spinner to determine the winner. If the spinner lands on "more," the player who made more calculations wins. If the spinner lands on "less," the player who made fewer calculations wins.

Example

Player 1 chooses 334.

Player 2:

- divides 334 by 2 to get 167 (calculation 1)
- subtracts 7 from 167 to get 160 (calculation 2)
- divides 160 by 8 to get 20 (calculation 3)
- divides 20 by 4 to get 5 (calculation 4)
- subtracts 5 from 5 to get 0 (calculation 5)

NAME _____ | **DATE** _____

Division Games page 6 of 6

Go for Zero Record Sheet

Player 1 Colin _____   Player 2 Zachary _____

Round 1	**Starting Number** chosen by Player 1	334	**Starting Number** chosen by Player 2	
	Calculation 1	$334 \div 2 = 167$	**Calculation 1**	
	Calculation 2	$167 - 7 = 160$	**Calculation 2**	
	Calculation 3	$160 \div 8 = 20$	**Calculation 3**	
	Calculation 4	$20 \div 4 = 5$	**Calculation 4**	
	Calculation 5	$5 - 5 = 0$	**Calculation 5**	

(continued on next page)

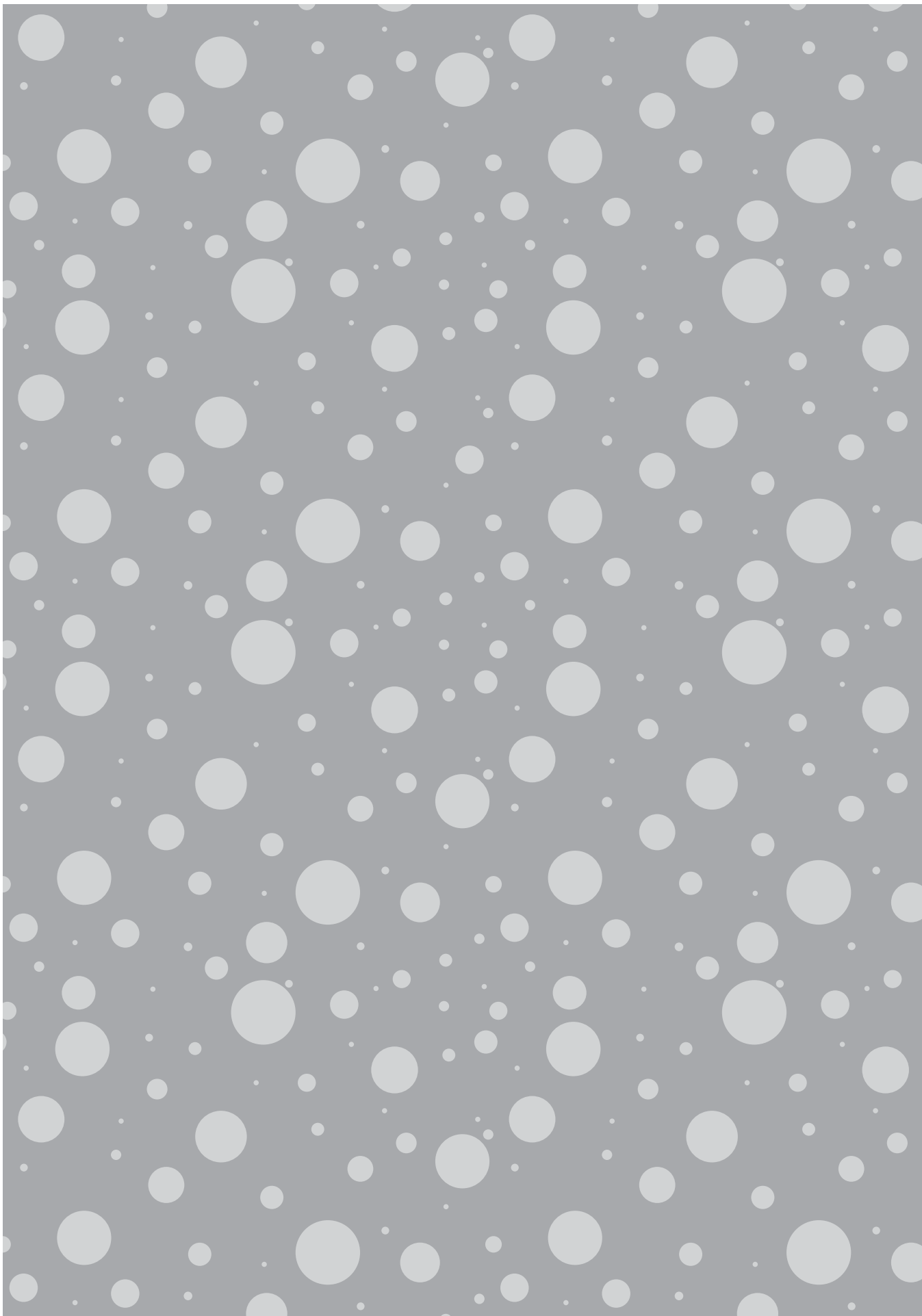## Division Games page 3 of 6

Game Spinners

Rip this page carefully out of your book to play Quotients Win or Go for Zero.

Use the Quotients Win Spinner for Quotients Win and to decide which player starts first in Go for Zero. Use the Go for Zero spinner to determine the winner in Go for Zero.

Quotients Win Spinner
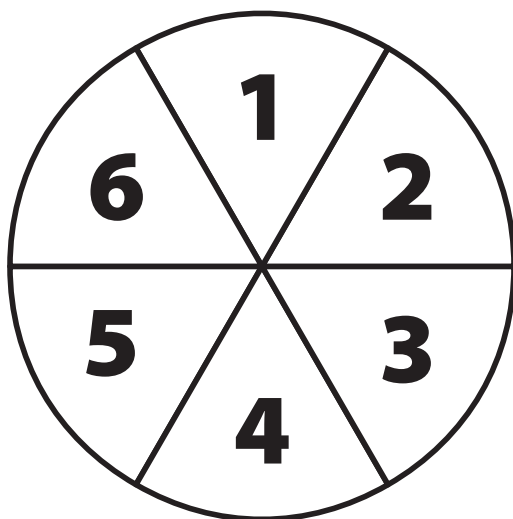
Go for Zero Spinner

(continued on next page)

60
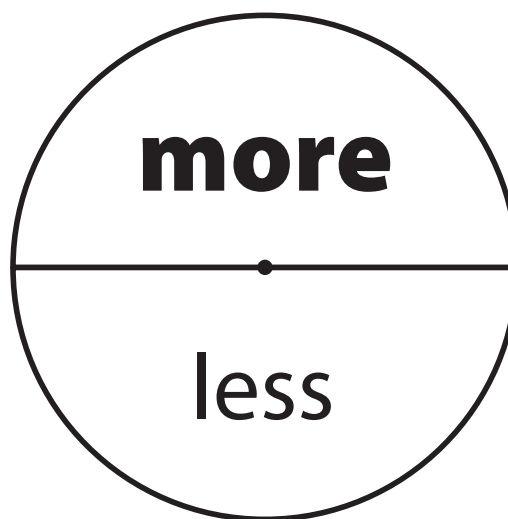
Division Games page 4 of 6

Quotients Win Game Sheet 1

Player 1 _____   Player 2 _____
Color _____   Color _____

1

$120 \div 12 =$ _____

2
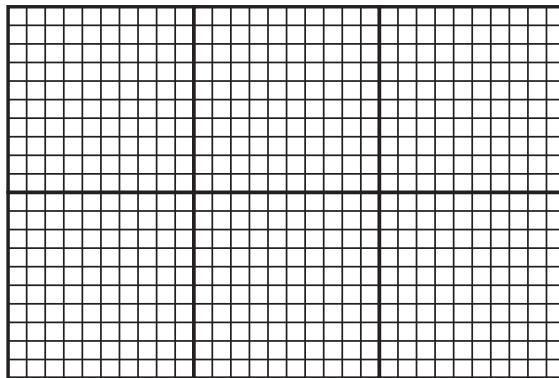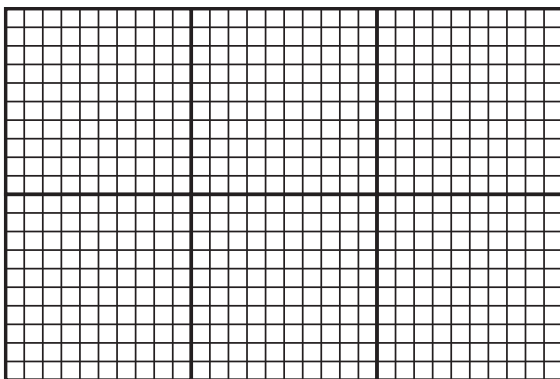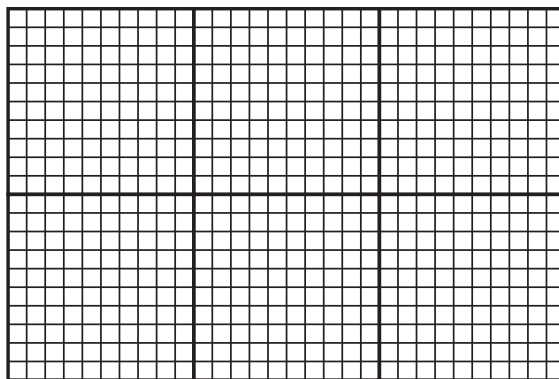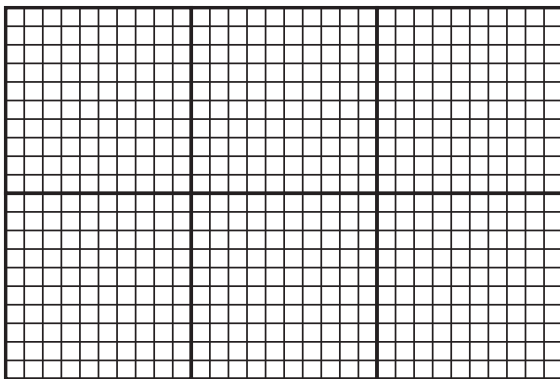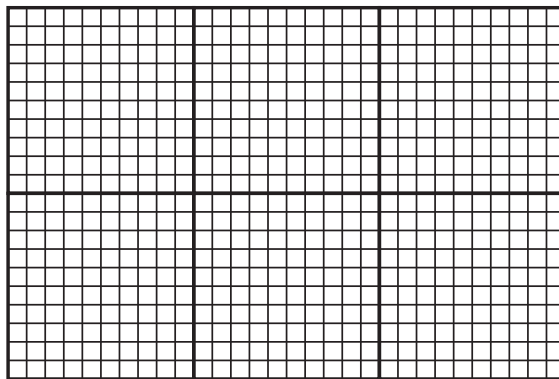
$230 \div 10 =$ _____

3

$180 \div 18 =$ _____

4

$240 \div 10 =$ _____

5

$110 \div 10 =$ _____

6

$150 \div 15 =$ _____
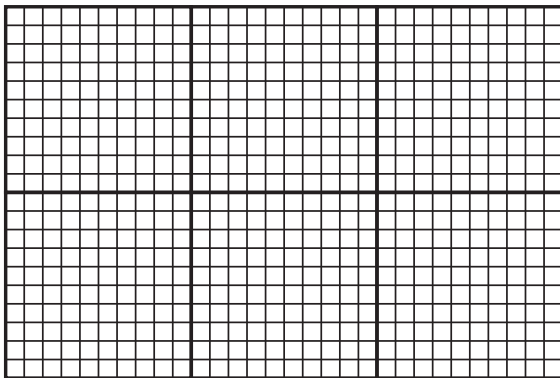
Player 1's Score _____   Player 2's Score _____

61

Division Games page 5 of 6

Quotients Win Game Sheet 2

Player 1 _____   Player 2 _____

Color _____   Color _____

1

$280 \div 10 = $ _____

2
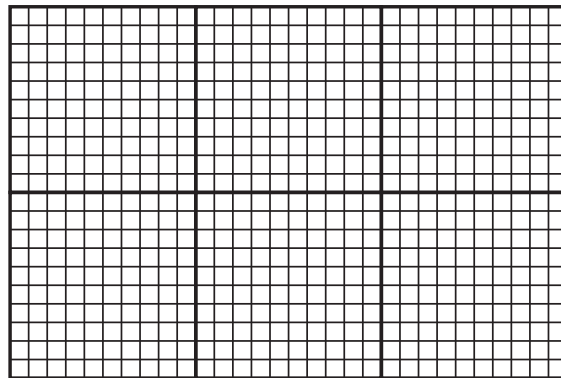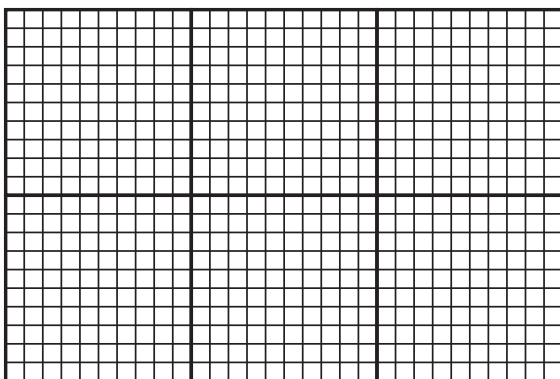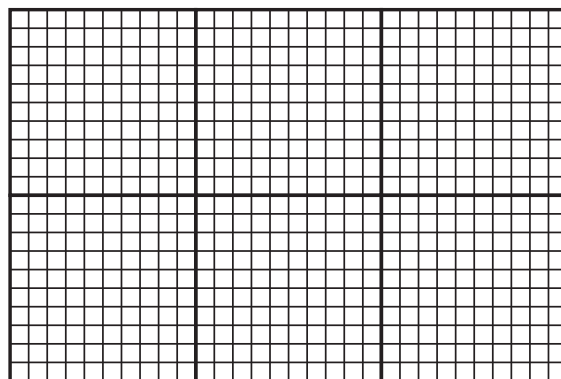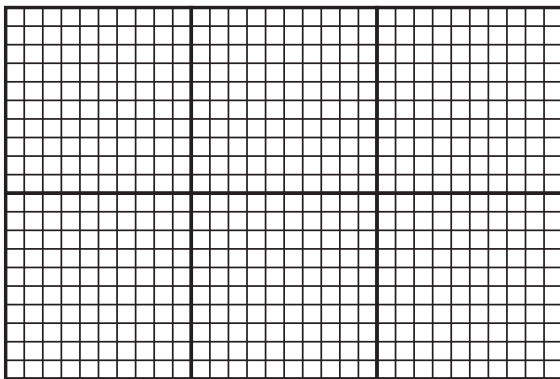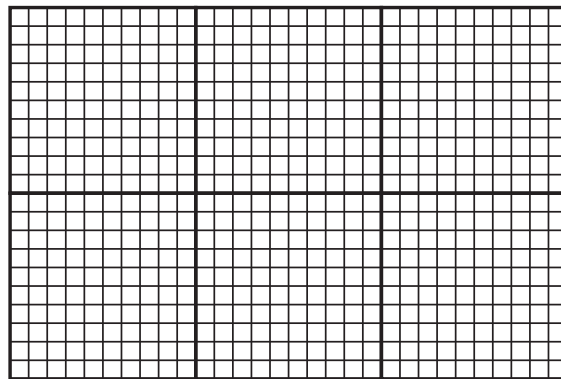
$190 \div 19 = $ _____

3

$300 \div 20 = $ _____

4

$400 \div 20 = $ _____

5

$160 \div 10 = $ _____

6

$220 \div 20 = $ _____

Player 1's Score _____   Player 2's Score _____

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NAME _____ | **DATE** _____

Division Games page 6 of 6

Go for Zero Record Sheet

Player 1 _____   Player 2 _____

Round 1	**Starting Number** chosen by Player 1		**Starting Number** chosen by Player 2	
	Calculation 1		**Calculation 1**	
	Calculation 2		**Calculation 2**	
	Calculation 3		**Calculation 3**	
	Calculation 4		**Calculation 4**	
	Calculation 5		**Calculation 5**	

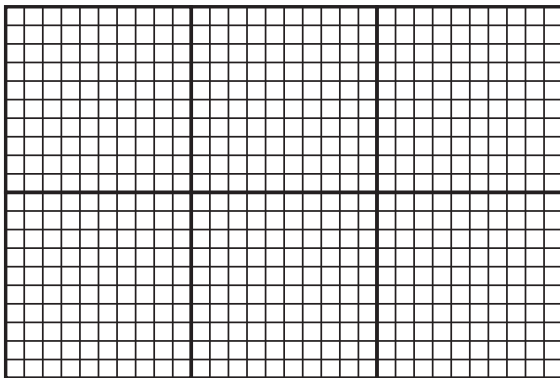|				
Round 2	**Starting Number** chosen by Player 1		**Starting Number** chosen by Player 2	
	Calculation 1		**Calculation 1**	
	Calculation 2		**Calculation 2**	
	Calculation 3		**Calculation 3**	
	Calculation 4		**Calculation 4**	
	Calculation 5		**Calculation 5**	

Round 3	**Starting Number** chosen by Player 1		**Starting Number** chosen by Player 2	
	Calculation 1		**Calculation 1**	
	Calculation 2		**Calculation 2**	
	Calculation 3		**Calculation 3**	
	Calculation 4		**Calculation 4**	
	Calculation 5		**Calculation 5**	

Total number of calculations made by player 1 _____

Total number of calculations made by player 2 _____

The winner of this game is _____

Unit 3 Review page 1 of 2

1 Find and label the location of these numbers on the number line. It's OK to add more marks to the line if you need to.

| 1.4 | 0.75 | 1.25 | 0.2 | 1.95 | 0.58 |

2 Use the symbols >, =, and < to compare each pair of decimal numbers.

94.598 ____ 94.643   94.510 ____ 94.051   94.509 ____ 94.590

3 When the odometer of a car reads 35,467.219, the 5 stands for 5 × 1,000 miles. Use expanded form to show what each of the other digits in the odometer reading means.

a The 3 in 35,467.219 means _____ × _____ miles.

b The 4 in 35,467.219 means _____ × _____ miles.

c The 6 in 35,467.219 means _____ × _____ miles.

d The 7 in 35,467.219 means _____ × _____ miles.

e The 2 in 35,467.219 means _____ × _____ of a mile.

f The 1 in 35,467.219 means _____ × _____ of a mile.

g The 9 in 35,467.219 means _____ × _____ of a mile.

4 This whole grid is worth 1. Write at least 3 different fractions and 3 different decimal numbers to name the part that is shaded.
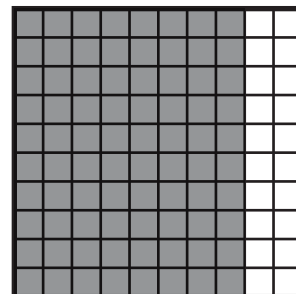
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NAME | DATE

Unit 3 Review page 2 of 2

5 Here is a chart showing the amount of rain that fell in Bookerville over the last four days.

Monday	1.35 inches
Tuesday	2.50 inches
Wednesday	3.06 inches
Thursday	2.49 inches

Bookerville has a record of 12 inches of rain in 5 days. How much will it have to rain on Friday to beat the record by one-tenth of an inch? Show all of your work below.

6 Mr. Mugwump is still confused about fractions. Use numbers, words, or labeled sketches to show him why $\frac{1}{2} + \frac{1}{3}$ does not equal $\frac{2}{5}$.

7 **CHALLENGE** Sasha has 1 kilogram of grapes. She gives 763 grams of grapes to her sister, Kari. Kari then shares 598 grams with their twin brothers. The twins divide their grams of grapes evenly. How many grams of grapes does each sibling have?

Number Review page 1 of 2

Here is a completed box challenge puzzle. If you look at it closely, you'll see that the number at the top is the product of the two numbers on the left and right, and the number at the bottom is the sum of the two numbers on the left and right.
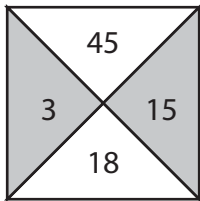
$3 \times 15 = 45$

$3 + 15 = 18$

1 Fill in the blanks to complete each of the box challenge puzzles below. Remember that the number at the top is the *product* of the two numbers on the sides, and the number at the bottom is the *sum* of the two numbers on the sides.
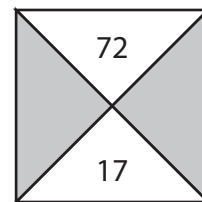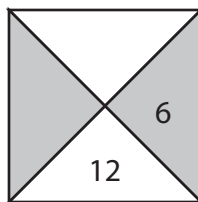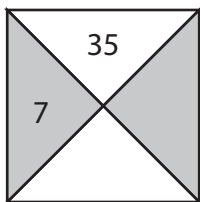
2 Evaluate each expression.

a $(14 \times 3) \times 10$

b $4 \times (9 \times 20)$

c $(600 \div 20) \times 5$

d $99 \times (99 + 1)$

3 Julia said that she solved the problem $360 \div 12$ by dividing 36 by 12 and then multiplying her answer by 10. Write an expression to show her thinking.

4 Lucas said he solved $360 \div 12$ by multiplying 12 by 3 and then multiplying the product by 10. Write an expression to show his thinking.

5 Who got the correct quotient (answer), Julia or Lucas?

6 Billy said that he thinks 30×176 is three times larger than 10×176. Do you agree or disagree? Explain your thinking.

NAME | DATE

Number Review page 2 of 2

7 Write the following decimals in standard form.

a 1,000 + 6 + 0.1 + 0.003

b Fourteen and three hundred ninety-seven thousandths

8 Write the following decimals in word form.

a 10 + 0.06 + 0.008

b 40.545

9 Write the following decimals in expanded notation.

a Seven hundred twenty-two and sixteen-thousandths

b 938.120

10 Compare the decimals. Fill in each blank with <, >, or =.

a 160.30 ⬚ 160.03   **b** 7.098 ⬚ 7.908

c 3.071 ⬚ 3.701   **d** 90.0 ⬚ 0.90

NAME _____ | DATE _____

🏠 Thinking About Strategy page 1 of 2

1 Complete the box challenges below.

a

```
    56
  8    
    15
```

b

```
    18
       
    9
```
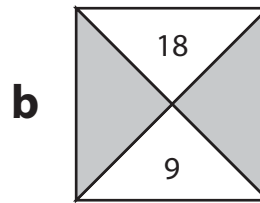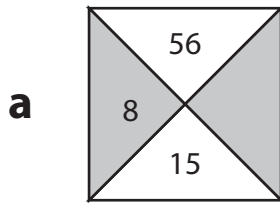
2 The craft store sells large boxes of modeling clay that hold 18 sticks each. Complete the ratio table to find out how many sticks there are in different numbers of boxes.

Large Boxes	1	2	3	5	10	50	55
Sticks of Clay	18						

3 You can also buy small boxes of modeling clay at the craft store for $3.50 each. Find out how much it would cost to buy different numbers of small boxes of clay.

Small Boxes	1	2	10	20	19	40	39
Cost	$3.50						

4 Solve the problems in the string below. Use the answers from the first few combinations to help solve the rest.

a 36×10

b 36×5

c 36×15

d 36×100

e 36×50

f $1{,}872 \div 36$

(continued on next page)

Thinking About Strategy page 2 of 2

5 Solve the problems in this string.

a 36 ÷ 18

b 72 ÷ 18

c 108 ÷ 18

d 180 ÷ 18

e 1800 ÷ 18

f 18 × 99

6 **CHALLENGE** Noah loves the Half-Tens facts and often uses them to solve multiplication problems. Make up a 2-digit by 3-digit multiplication problem for which using Half-Ten facts is efficient. Then, solve the problem using that strategy.

NAME | **DATE**

🏠 Multiplication Strategies page 1 of 2

1 The top box shows the *product* of the two middle numbers, and the bottom box shows the *sum* of the two middle numbers. Fill in the missing numbers.

a

4
16 X 0.25

b

7
0.25 X

c

6
0.75 X

d

2.25
X 0.75
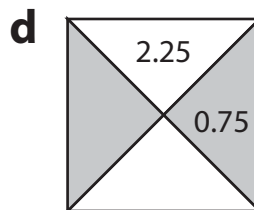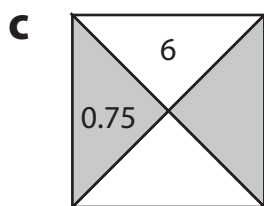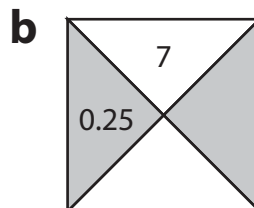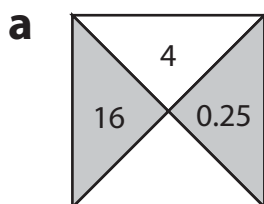
2 Find the product.

a $\frac{1}{5}$ of 40 =

b $\frac{1}{3}$ of 21 =

c $\frac{3}{5}$ of 40 =

d $\frac{2}{3}$ of 21 =

e $\frac{1}{6}$ of 24 =

f $\frac{1}{12}$ of 36 =

g $\frac{4}{6}$ of 24 =

h $\frac{4}{12}$ of 36 =

3 Matthew bought 16 gallons of gas for $4.25 per gallon. How much did he spend? Show your work.

(continued on next page)

NAME | **DATE**

Multiplication Strategies page 2 of 2

4 Tracy bought a dozen of her mother's favorite flowers for $9.00. How much did each flower cost? Show your thinking.

5 Gavin also bought a dozen flowers for his mother, but her favorite flowers cost $0.35 each. How much did Gavin spend? Show your thinking.

6 Xavier earns $12.50 for each lawn he mows. If he mowed 8 lawns last week, how much money did he earn? Show your work.

7 **CHALLENGE** Randi and her sister made balloon animals and sold them for $0.50 each at a school carnival. They made $48.00. If Randi made twice as many balloon animals as her sister, how many balloon animals did each girl make? Show your work.

NAME | DATE

Dante's Decision page 1 of 2

Dante wants to spend some of his allowance money, but he is having a hard time deciding what to buy. He loves baseball cards, packs of gum, and bouncy balls. Fill in the ratio tables and answer the questions to help Dante keep track of what he can buy.

1 Dante's favorite packs of baseball cards cost $1.70 each. Fill in the table below to show the cost of different numbers of packs of baseball cards.

Packs of Baseball Cards	1	2	4	8	9	10	15	25
Cost	$1.70							

2 Dante's favorite gum costs $0.60 a pack. Fill in the table below to show the cost of different numbers of packs of gum.

Packs of Gum	1	2	5	9	10	19	20	25
Cost	$0.60							

3 Bouncy balls come in packages that cost $3.15 each. Fill in the table below to show the cost of different numbers of packs of bouncy balls.

Packs of Bouncy Balls	1	2	3	6	9	10	12	20
Cost	$3.15							

4 Dante decided to spend only $20.00 of his allowance and save the rest for later.

a Can he buy 12 packs of baseball cards? Why or why not?

b Can he buy 30 packs of gum? Why or why not?

c How much of the $20.00 will he still have after he buys 5 packs of bouncy balls?

(continued on next page)

NAME _____ | DATE _____

Dante's Decision page 2 of 2

5 Write the following decimals in base ten numerals.

a 3,000 + 60+ 0.4 + 0.002 _____

b One hundred seventeen and three-thousandths _____

6 Write the number names (words) for the following decimals.

a 300 + 0.10 + 0.004 _____

b 13.029 _____

7 Write the following decimals in expanded form.

ex 642.835   (6 × 100) + (4 × 10) + (2 × 1) + (8 × 0.1) + (3 × 0.01) + (5 × 0.001)

a Four thousand fifty-three and two hundred sixty-nine thousandths

b 9,615.243

8 Use >, =, or < to compare each pair of decimals.

45.01 ▭ 45.10   5.055 ▭ 5.550   19.023 ▭ 19.032   70.0 ▭ 0.70

9 **CHALLENGE** Abby is going to make tie-dyed T-shirts for her class to wear on a field trip. Each shirt costs $3.95 and the dye for each shirt costs $0.50. Abby also needs to buy two boxes of salt to add to the mix for $4.50 each. If she has collected $124.70, how many tie-dyed T-shirts can Abby make? Show your work.

Using Quarters page 1 of 2

Here is an array of quarters.
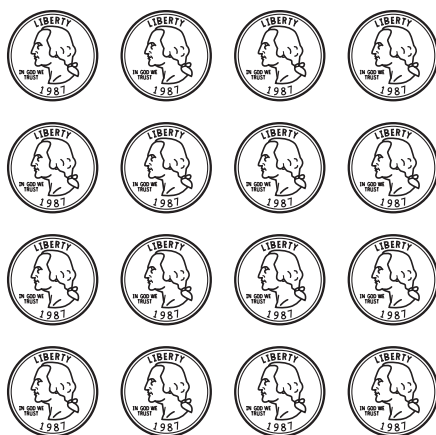
1 What is the total amount of money in this array? Use numbers, words, or labeled sketches to explain your answer.

2 Use the array to help solve these multiplication problems.

a $4 \times 25 =$ **b** $10 \times 25 =$

c $6 \times 25 =$ **d** $12 \times 25 =$

e $8 \times 25 =$ **f** $14 \times 25 =$

3 Rosie says she can solve 24×25 using the information above. Do you agree with her? Why or why not?

(continued on next page)

NAME _____ | DATE _____

Using Quarters page 2 of 2

4 Use what you know about adding and multiplying money to help solve the multiplication problems below.

ex	
25 × 36 ──── 900	I know there are four 25s in 100 (four quarters in a dollar). 36 is equal to 9 groups of 4. So, 36 × 25 is like 9 × 100.

a 25
× 24

b 25
× 32

c 25
× 40

d 25
× 34

e 50
× 2

f 50
× 16

g 50
× 24

h 50
× 32

i 50
× 33

j 50
× 17

k 75
× 2

l 75
× 16

Challenge

m 100
× 0.25

n 600
× 0.25

o 240
× 0.75

p 360
× 0.75

NAME _____ | **DATE** _____

🏠 Multiplication Models & More page 1 of 2

There are a variety of ways to multiply 2-digit by 2-digit numbers. Use the model or strategy described in each box to solve the multiplication combination in that box.

1 Make an easier combination by doubling one factor and halving the other.

ex $25 \times 48 = 50 \times 24 = 100 \times 12 = 1,200$

a $25 \times 72 =$ _____ $\times$ _____ $=$ _____ $\times$ _____ $=$ _____

2 Use an area model divided into four regions.

14×27

$$\begin{array}{r} 27 \\ \times\ 14 \\ \hline \end{array}$$

3 Use an area model divided into two regions.

13×34

$$\begin{array}{r} 34 \\ \times\ 13 \\ \hline \end{array}$$

4 Multiply to get four partial products and add them up.

$$\begin{array}{r} 35 \\ \times\ 28 \\ \hline \end{array}$$

$20 \times 30 =$ _____

$20 \times 5 =$ _____

$8 \times 30 =$ _____

$8 \times 5 =$ _____

5 Multiply by the tens and then by the ones. Add the partial products to get the answer.

$$\begin{array}{r} 25 \\ \times\ 23 \\ \hline \end{array}$$

$20 \times 25 =$ _____

$3 \times 25 =$ _____

(continued on next page)

NAME | **DATE**

Multiplication Models & More page 2 of 2

Making an estimate before solving a problem can help you decide if your answer is reasonable. Make an estimate, solve the problem, and then use your estimate to help decide if your answer makes sense.

6 The school got new dictionaries for the third, fourth, and fifth graders this year. They got 32 boxes, and there were 16 dictionaries in each box. How many dictionaries did they get altogether?

a Use rounding or another strategy to decide which estimate below is best. Circle the best estimate.

fewer than 350 dictionaries

about 600 dictionaries

more than 350 but fewer than 450 dictionaries

b Solve the problem. Show all your work.

c Is your answer reasonable? How can you tell?

7 Solve these multiplication problems.

2,000	300	300	4,000	20,000
× 14	× 70	× 12	× 4,000	× 21

Maria's Multiplication page 1 of 2

1 Maria is practicing solving problems using the standard algorithm for multiplication. She knows the first step, but then she gets stuck. Finish these problems Maria started.

$$
\begin{array}{r}
^6 \\
38 \\
\times\ 28 \\
\hline
4
\end{array}
\qquad
\begin{array}{r}
^2 \\
84 \\
\times\ 37 \\
\hline
8
\end{array}
\qquad
\begin{array}{r}
^4 \\
26 \\
\times\ 97 \\
\hline
182
\end{array}
$$

2 Fill in the boxes to complete the problems.

$$
\begin{array}{r}
23 \\
\times\ \ 11 \\
\hline
\square\,3 \\
+\,\square\square\square \\
\hline

\end{array}
\qquad
\begin{array}{r}
15 \\
\times\ \ 12 \\
\hline
\square\,0 \\
+\ 1\,\square\,0 \\
\hline

\end{array}
$$

3 Conrad always likes to use the standard algorithm. He has to solve 99×38. Can you recommend another strategy to Conrad that might be more efficient? Explain.

4 **CHALLENGE** Lydia also likes to use the standard algorithm for multiplication. She has to solve 32×8.25. Recommend another strategy to Lydia, and show her how to use that strategy to solve this problem.

(continued on next page)

Maria's Multiplication page 2 of 2

Review

5 Finish the number pattern for the rule: $2n + 1$

3, 5, _____, _____, _____, _____, _____, _____, _____, _____

6 Finish the number pattern for the rule: $4n + 1$

5, 9, _____, _____, _____, _____, _____, _____, _____, _____

7 What do you notice about the two number patterns you just completed? How are they similar? How are they different?

8 Multiply:

a $8.7 \times 10 =$ _____

b $8.7 \times 100 =$ _____

c $8.7 \times 1{,}000 =$ _____

d $8.7 \times 0.1 =$ _____

e $8.7 \times 0.01 =$ _____

f Look at the zeroes and the decimal points in your answers. What do you notice?

NAME | DATE

📖 Skills Review page 1 of 2

1 Solve each problem below using the standard multiplication algorithm.

$$706 \times 28$$

$$519 \times 37$$

$$405 \times 46$$

2 Fill in the boxes in the problems below.

a

$$
\begin{array}{r}
{}^{\boxed{}5} \\
367 \\
\times \quad \boxed{} \\
\hline
2{,}936
\end{array}
$$

b

$$
\begin{array}{r}
{}^{\boxed{}} \\
{}^{5} \\
2\boxed{}8 \\
\times \quad 37 \\
\hline
1{,}45\boxed{} \\
+6{,}24\boxed{} \\
\hline
7{,}6\boxed{}6
\end{array}
$$

c

$$
\begin{array}{r}
{}^{\boxed{}} \\
{}^{3} \\
84 \\
\times \quad 5\boxed{} \\
\hline
7\boxed{}6 \\
+4{,}2\boxed{}0 \\
\hline
4{,}\boxed{}56
\end{array}
$$

Review

3 Alexis has a treasure box. The treasure box is a rectangular prism that measures 8 inches by 12 inches by 25 inches. Use the standard algorithm to determine the volume of the box. Show your work and include units in your final answer.

81

NAME _____ | DATE _____

Skills Review page 2 of 2

4 Fill in the blanks.

a $\frac{1}{2}$ of 84 = _____   **b** $\frac{1}{4}$ of 84 = _____   **c** $\frac{1}{8}$ of 84 = _____

d $\frac{1}{2}$ of _____ = 62   **e** $\frac{1}{4}$ of _____ = 31

5 True or False?

a $\frac{1}{4}$ of 28 = $\frac{1}{8}$ of 14   **b** $\frac{1}{8}$ of 32 = $\frac{1}{4}$ of 16   **c** $\frac{1}{2}$ of 56 = $\frac{1}{4}$ of 28

6 Add or subtract. Use the space below to show your work if necessary.

$\frac{1}{2} + \frac{5}{8} =$ _____	$2\frac{1}{6} - \frac{7}{12} =$ _____	$8\frac{3}{4} + 1\frac{5}{12} =$ _____
6.89 + 8.12 = _____	10.01 − 3.72 = _____	3.12 − 2.76 = _____
$\frac{2}{3} +$ _____ $= 1\frac{4}{9}$	4.08 − _____ = 2.99	$5\frac{1}{2} -$ _____ $= 2\frac{3}{4}$

7 **CHALLENGE** Randall has $5.00 to spend on snacks at the movies. Use the table to figure out three snacks Randall can buy for $5.00. Show your thinking. Is that the only combination of three snacks Randall can buy? How do you know?

Popcorn - small	$2.75
Popcorn - medium	$2.99
Popcorn - large	$3.49
Cookie	$2.25
Lemonade	$1.19
Candy Bar	$1.29
Granola Bar	$0.89

NAME _____ | DATE _____

🏠 Number Relationships page 1 of 2

Fill in the blanks.

1 $\frac{3}{4}$ of 12 is _____, so $0.75 \times 12 =$ _____, and $75 \times 12 =$ _____.

2 $\frac{1}{4}$ of 8 is _____, so $0.25 \times 8 =$ _____, and $25 \times 8 =$ _____.

3 $\frac{1}{4}$ of 9 is _____, so $0.25 \times 9 =$ _____, and $25 \times 9 =$ _____.

4 $\frac{3}{4}$ of 82 is _____, so $0.75 \times 82 =$ _____, and $75 \times 82 =$ _____.

5 Complete the problems.

```
      873                 304
   ×   27              ×   89
    6,1  1              2,7
 + 1  ,46            + 2  ,320
                       27,  5
```

6 Fill in the table to round numbers to the nearest ten, one, tenth, and hundredth.

Round to the Nearest:	Ten	One	Tenth	Hundredth
506.308				
715.071				
80.916				

(continued on next page)

NAME | DATE

Number Relationships page 2 of 2

Story Problems

Read the story problems. Choose one problem to solve with the standard algorithm. Choose any strategy for the other problems. Show your work and explain your choices.

7 Chloe bought sets of markers for all of her classmates. Each set cost $0.99. If Chloe has 28 classmates, how much did all of the sets of markers cost?

Strategy:

Why did you choose this strategy?

8 The base of Tyler's cabin is a 56 feet by 78 feet rectangle. What is the area of the base of Tyler's cabin?

Strategy:

Why did you choose this strategy?

9 A female mouse can give birth to one dozen babies in a single litter. 78 mice each had a dozen babies, called pups. How many pups are there?

Strategy:

Why did you choose this strategy?

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🏠 Unit 4 Review page 1 of 4

Note to Families

We have been practicing division at school. First we used sketches to help, and now we are practicing using a numerical method that probably looks somewhat similar to the way you learned to do long division. Look at the comparison below, and then talk to your fifth grader as he or she completes problem 2. You might enjoy using this method to solve some long division problems yourself. If so, your child can help you.

A Familiar Way

$$
\begin{array}{r}
37 \\
13{\overline{\smash{\big)}\,481}} \\
-\ 39 \\
\hline
91 \\
-\ 91 \\
\hline
0
\end{array}
$$

A New, Similar Way

```
        2
        5    37
       10
       20
13) 481
   -260
    221
   -130
     91
    -65
     26
    -26
      0
```

Number of Groups	1	10	20	5		
Total	13	130	260	65		

1 Fill in the blanks.
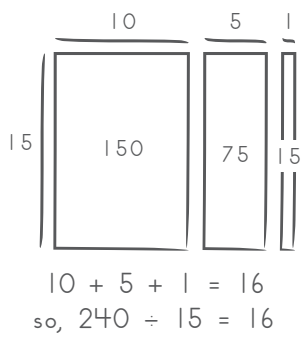
a $\frac{1}{4}$ of 36 is _____, so 0.25×36 is _____, so 25×36 is _____,

so 26×36 is _____, and 24×36 is _____.

b $\frac{1}{4}$ of 48 is _____, so $\frac{3}{4}$ of 48 is _____, so 75×48 is _____,

so $76 \times 48 =$ _____, and 74×48 is _____.

(continued on next page)

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Unit 4 Review page 2 of 4

2 Solve the division problems below. For each one, complete the ratio table first. Then you can solve the problem using only numbers, or you can use sketches and numbers together. You can also add more entries to the ratio table if you want to. The first problem has been done for you as an example.

ex

```
      1
    5   16
    10
15) 240
  -150
    90
   -75
    15
   -15
     0
```

Number of Groups	1	10	20	5		
Total	15	150	300	75		

10 + 5 + 1 = 16
so, 240 ÷ 15 = 16

a

16) 272

Number of Groups	1	10	20	5			
Total	16						

b

12) 216

Number of Groups	1	10	20	5			
Total	12						

c

17) 408

Number of Groups	1	10	20	5			
Total	17						

NAME _____ | **DATE** _____

Unit 4 Review page 3 of 4

3a Maria is planning to make friendship bracelets to sell at the farmers' market. Each bracelet costs $1.25 to make. Use the ratio table to show your strategy for finding the cost to make 19 bracelets.

Number of Bracelets	1								
Cost	$1.25								

The cost to make 19 bracelets is _____.

b Use the ratio table to show your strategy for finding how many bracelets Maria can make for $126.25.

Number of Bracelets	1								
Cost	$1.25								

Maria can make _____ bracelets for $126.25.

4 Solve the problems below. Use the standard algorithm for one problem. Use any strategies for the other problems. Show your work. Explain your choice of strategy.

$$26 \times 36 \qquad\qquad 28 \times 36 \qquad\qquad 36 \times 36$$

Why did you choose this strategy?	Why did you choose this strategy?	Why did you choose this strategy?

(continued on next page)

NAME | **DATE**

Unit 4 Review page 4 of 4

5 Fill in the boxes to complete each multiplication combination below using the standard algorithm.

$$
\begin{array}{r}
46 \\
\times\ \ 32 \\
\hline
\square\,2 \\
+\ \square\,38\,\square \\
\hline
1,\square\,7\,\square
\end{array}
\qquad
\begin{array}{r}
506 \\
\times\ \ 31 \\
\hline
\square\,06 \\
+\ 15,\square\square\,0 \\
\hline
\rule{2cm}{0pt}
\end{array}
\qquad
\begin{array}{r}
622 \\
\times\ \ 77 \\
\hline
4,3\,\square\,4 \\
+\ \square\square,540 \\
\hline
4\square,8\,\square\,4
\end{array}
$$

NAME _____ | **DATE** _____

Multiplication & Division Review page 1 of 2

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 tables.

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

3 Solve these multiplication problems using the standard algorithm.

$$
\begin{array}{r}
84 \\
\times\ 36 \\
\hline
504 \\
+\ 2{,}520 \\
\hline
3{,}024
\end{array}
\qquad
\begin{array}{r}
58 \\
\times\ 27 \\
\hline
\end{array}
\qquad
\begin{array}{r}
451 \\
\times\ 32 \\
\hline
\end{array}
\qquad
\begin{array}{r}
256 \\
\times\ 33 \\
\hline
\end{array}
$$

$$
\begin{array}{r}
177 \\
\times\ 49 \\
\hline
\end{array}
\qquad
\begin{array}{r}
305 \\
\times\ 64 \\
\hline
\end{array}
\qquad
\begin{array}{r}
573 \\
\times\ 26 \\
\hline
\end{array}
\qquad
\begin{array}{r}
837 \\
\times\ 86 \\
\hline
\end{array}
$$

(continued on next page)

NAME _____ | DATE _____

Multiplication & Division Review page 2 of 2

4   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 left over.

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

a   Which bag of candies should she buy? Show all of your work.
Hint: Can you remember a divisibility rule to help?

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

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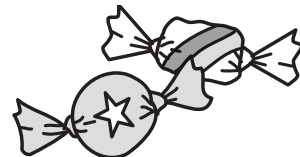
🏠 More Fractions of Wholes page 1 of 2

1 Find the products.

a $\frac{1}{4}$ of 6 = _____

b $\frac{1}{5} \times 30$ = _____

c $\frac{1}{3}$ of 27 = _____

d $\frac{3}{4}$ of 6 = _____

e $\frac{4}{5} \times 30$ = _____

f $\frac{2}{3} \times 27$ = _____

2 True or False?

a $\frac{1}{4} \times 9 = 2\frac{1}{4}$ **T F**

b $\frac{3}{5}$ of 25 = 15   **T F**

c $\frac{2}{5}$ of 15 = $5\frac{2}{5}$ **T F**

d $18 \times \frac{1}{5} = \frac{5}{18}$ **T F**

e $\frac{2}{6} \times 24 = 14$ **T F**

f $17 \times \frac{1}{3} = \frac{17}{3}$ **T F**

3 Pete rode his dirt bike $\frac{2}{3}$ of the 150-mile course. How many miles did Pete ride? Show your work.

4 Kim says that multiplying $\frac{1}{4} \times 12$ is the same as dividing 12 by 4. Do you agree with Kim? Explain your answer.

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NAME _____ | DATE _____

More Fractions of Wholes page 2 of 2

Review

5 Round each number to the nearest tenth and hundredth.

Number	Rounded to the Nearest Tenth	Rounded to the Nearest Hundredth
131.094		
45.655		
934.705		
100.550		

6 Evaluate each of the following.

a $6 \times (5 \times 12) =$ _____

b $(18 \times 13) + (2 \times 13) =$ _____

c $(75 \div 3) \times 10 =$ _____

d $(117 \times 4) - (7 \times 4) =$ _____

7 Six friends had lunch together and decided to split the bill evenly.

a If the bill was $48.60, what was each person's share? Show your work.

b After tax and tip, the bill totaled $63.00. What was each person's share? Show your work.

8 **CHALLENGE** Vivian loves to paint in the evenings after school. She is working on three paintings. She needs 4 brushes, 3 canvases, and 12 small tubes of paint. Brushes cost $0.75 each, canvases cost $5.99 each, and tubes of paint costs $1.89 each.

a Write an expression to determine Vivian's cost, then solve the problem.

b Help Vivian determine the average cost per painting. Write an expression and then solve the problem.

NAME _____ | **DATE** _____

🏠 Games, Cards & More page 1 of 2

In Target One Fractions, players choose three numbers to create a whole number and a fraction that have a product close to 1. Their score is the difference between their product and 1, and the lowest score wins the round.

1 Erica is playing Target One Fractions. She has these cards: 1, 2, 3, 4, 6.

a Which three cards should she choose to make a whole number and a fraction that have a product close to 1?

b Write an expression for the problem Erica will solve.

c Solve the problem.

d What is Erica's score for this round?

2 Jamal is playing Beat the Calculator: Fractions. Help Jamal solve the following problems. Show your work.

a $1\frac{1}{5} - \frac{3}{10} =$ _____

b $\frac{1}{3} + \frac{1}{4} + \frac{1}{2} =$ _____

c $\left(\frac{7}{8} - \frac{1}{4}\right) - \left(\frac{5}{5} - \frac{3}{3}\right) =$ _____

d $\frac{12}{24} + \frac{18}{36} + \frac{24}{48} =$ _____

(continued on next page)

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NAME | DATE

Games, Cards & More page 2 of 2

3 Billy made 60 cards to give away on Valentine's Day. Help Billy figure out how many cards he will give to his family, his teachers, and his friends. Show your work.

   a If Billy gives $\frac{1}{3}$ of his cards to his family, how many cards does Billy give his family?

   b If Billy gives $\frac{1}{4}$ of his cards to his teachers, how many cards does Billy give his teachers?

   c If Billy gives $\frac{5}{12}$ of his cards to his friends, how many cards does Billy give his friends?

4 True or False?

   a $3 \times \frac{4}{5} = 4 \times \frac{3}{5}$ T   F

   b $3 \times \frac{4}{5} = 5 \times \frac{3}{4}$ T   F

   c $3 \times \frac{4}{5} = \frac{4}{5} \times 3$ T   F

5 Madison and Noah are reading new books from the library. Noah has read $\frac{3}{8}$ of his book, which has 72 pages. Madison has read $\frac{3}{5}$ of her book, which has 55 pages. Who has read more pages? How do you know? Show your work.

6 **CHALLENGE** A rectangular solid that is 6 cm–by-6 cm-by-6 cm is painted on all six faces. Then the solid is cut into cubes that measure 2 cm on each side. How many cubes have only one face painted? Show your work.

NAME | DATE

The Tangerine Problem page 1 of 2

1 Estimate the results of 360 ÷ 24 and explain your thinking.

2 Fill in the ratio table for 24, and use it to help solve 360 ÷ 24. You can make a
sketch, or you can work with numbers only.

24									
1									

3 Ali says that if you divide 360 by 12 instead of 24, the answer will be twice as large.
Do you agree with her or not? Why?

NAME | DATE

The Tangerine Problem page 2 of 2

4 Holly and her brother Max got permission to pick tangerines from the trees in their yard and sell them to their friends and neighbors. In all, they collected 360 tangerines.

Holly thinks they should put the tangerines in bags of 24 and sell each bag for $1.50.

Max thinks they should divide the tangerines equally among 24 bags and sell each bag for $1.50.

Whose plan is better? Why? Show all of your your work below.

NAME _____ | DATE _____
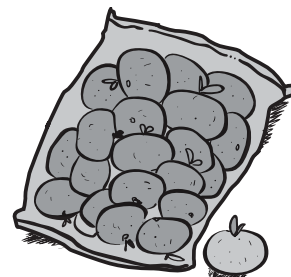
🏠 Fractions & Division page 1 of 2

1 Compete the box challenges.

ex

3 | $\frac{1}{2}$ | 6 | $6\frac{1}{2}$

a

$\frac{5}{6}$ | $3\frac{5}{6}$

b

2 | $\frac{4}{5}$
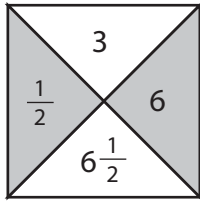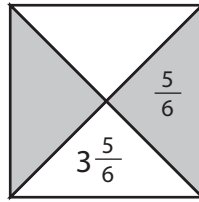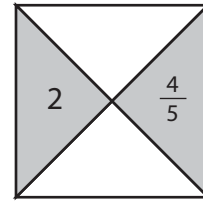
2 Find the product of each.

a $11 \times \frac{1}{8} =$

b $\frac{3}{8} \times 16 =$

c $\frac{7}{3} \times 12 =$

d $15 \times \frac{2}{3} =$

3 Fill in the blank.

a $19 \times \frac{5}{5} = $ ▢

b $\frac{12}{12} \times $ ▢ $ = 14$

4 Fill in the ratio table for 23.

Number of Groups	1	2	10	5	20	15			
Total	23								

5 Solve these two division problems using the ratio table above. You can add to the ratio table if you want to.

ex $368 \div 23 = 16$

```
      1 ⎤
      5 ⎥ 16
     10 ⎦
23 ⟌ 3 6 8
   – 2 3 0
     1 3 8
   – 1 1 5
         2 3
   –     2 3
           0
```

a $529 \div 23 = $ _____

b $414 \div 23 = $ _____

(continued on next page)

NAME | DATE

Fractions & Division page 2 of 2

6 Jill grew out her hair for several years to donate to charity. When she was finally ready to have it cut, she asked her mother to take off $10\frac{2}{3}$ inches. She liked it short so much that she got another $1\frac{7}{8}$ inches cut off.

a How much hair did Jill have cut off in all? Show your work.

b How much more hair was cut off the first time than the second? Show your work.

c Jill estimates that her hair will grow $\frac{2}{3}$ of an inch every month. How much longer will her hair be in 10 months than it is now? Show your work.

7 **CHALLENGE** Cameron loves to read and has a big collection of books. Half of them are fantasy, one-fourth of them are biographies, one-eighth of them are mysteries, and 6 of them are sports books. How many books does Cameron have in all? How many of them are fantasy, how many of them are biographies, and how many of them are mysteries? Show your work.

NAME _____ | **DATE** _____
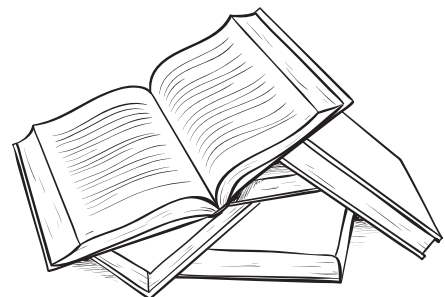
🏠 Comparing, Simplifying & Adding Fractions Review page 1 of 2

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 expressions.

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

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NAME _____ | **DATE** _____

Comparing, Simplifying & Adding Fractions Review page 2 of 2

3 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 $\dfrac{9 \div \boxed{3}}{15 \div \boxed{3}} = \dfrac{3}{5}$	**a** $\dfrac{4 \div \boxed{}}{6 \div \boxed{}} = \dfrac{}{}$	**b** $\dfrac{12 \div \boxed{}}{15 \div \boxed{}} = \dfrac{}{}$
c $\dfrac{12 \div \boxed{}}{18 \div \boxed{}} = \dfrac{}{}$	**d** $\dfrac{8 \div \boxed{}}{12 \div \boxed{}} = \dfrac{}{}$	**e** $\dfrac{4 \div \boxed{}}{12 \div \boxed{}} = \dfrac{}{}$

4 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 $\dfrac{5}{8} + \dfrac{7}{12}$ $\dfrac{15}{24} + \dfrac{14}{24} = \dfrac{29}{24}$ and $\dfrac{29}{24} = 1\dfrac{5}{24}$	**ex** $\dfrac{2}{6} + \dfrac{8}{12}$ $\dfrac{1}{3} + \dfrac{2}{3} = \dfrac{3}{3}$ and $\dfrac{3}{3} = 1$
a $\dfrac{3}{4} + \dfrac{2}{8}$	**b** $\dfrac{6}{8} + \dfrac{9}{12}$
c $3\dfrac{6}{12} + 4\dfrac{1}{2}$	**d** $1\dfrac{5}{8} + 2\dfrac{3}{4}$

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Fraction Multiplication Models page 1 of 2

1 Circle the picture that best represents each equation. Then solve the equation.

a $\frac{1}{2} \times \frac{3}{6} = $

A   B   C   D

b $\frac{1}{2} \times \frac{1}{3} = $

A   B   C   D

c $\frac{2}{5} \times \frac{3}{4} = $

A   B   C   D
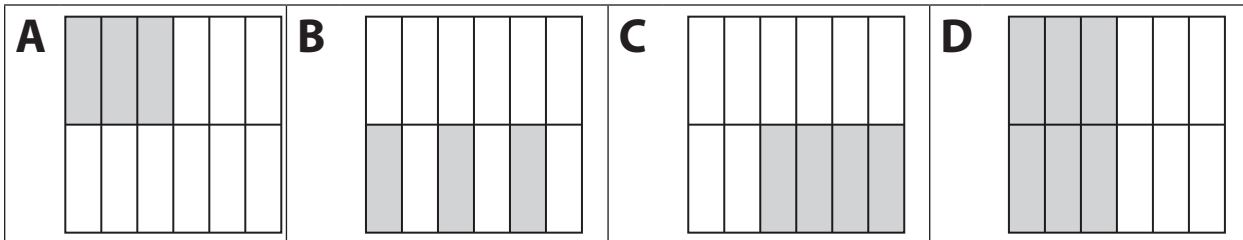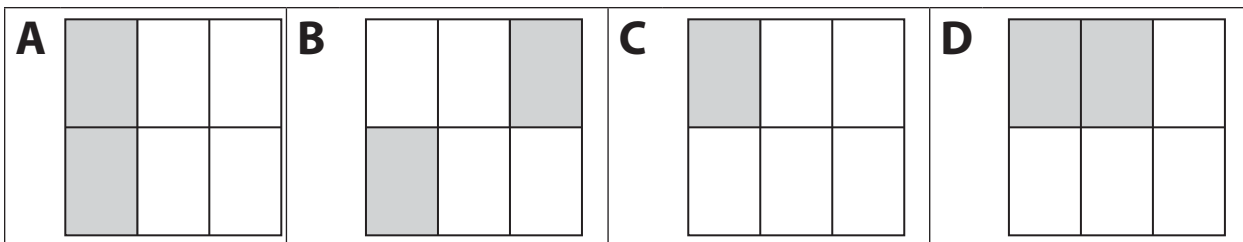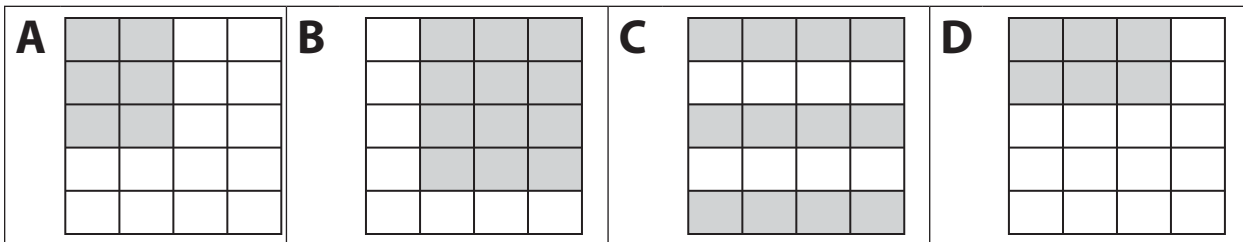
2 Use the grid to model and solve each combination. Remember to outline a rectangle to represent the whole first.

ex $\frac{2}{5} \times \frac{3}{5} = \frac{6}{25}$

$\frac{3}{5}$

$\frac{2}{5}$

a $\frac{5}{6} \times \frac{5}{6} = $

b $\frac{3}{7} \times \frac{2}{4} = $

(continued on next page)

NAME | DATE

Fraction Multiplication Models page 2 of 2

3   Betsy has $14.25 and her brother has $16.00. They want to buy two water guns that cost $12.99 each and a bag of water balloons that costs $4.79.

   a   Do they have enough money? If so, how much money will they have left over? If not, how much more money do they need? Show your work.

   b   If Betsy earns another $6, will they have enough money to buy two water guns and two bags of water balloons? Show your work.

4   Betsy made a cake for Josie's birthday party. After the party, only $\frac{1}{3}$ of the cake was left. That night, Betsy and Josie each ate another $\frac{1}{12}$ of the cake. How much of the cake was eaten in all? Show your work.

5   **CHALLENGE** Three friends were talking about races they entered over the weekend. Sherry said she ran $\frac{3}{5}$ of her 12 kilometer course before she started walking. Kyle said he ran $\frac{7}{8}$ of his 5 kilometer course before he started walking. Evan said he ran $\frac{3}{4}$ of his 8 kilometer course before he started walking. The boys argued that they each ran more than Sherry because $\frac{3}{4}$ and $\frac{7}{8}$ are greater fractions that $\frac{3}{5}$. Do you agree? Explain your thinking.

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📖 Sharing & Grouping—Multiplying & Dividing page 1 of 2

1 Read each story problem. Then:

- Write an equation (including the answer) for the problem.
- Fill in the bubble to show whether the answer means the size of each group or the number of groups.

a The swim team is going to a meet across town. There are 35 swimmers on the team, and each van can take 5 of them. How many vans will be needed to take the whole team?

Equation: _____

The answer means:

○ the size of each group (for example, the number of items each person got)

○ the number of groups

b Jacob picked 28 flowers and divided them equally between 2 vases. How many flowers did he put in each vase?

Equation: _____

The answer means:

○ the size of each group (for example, the number of items each person got)

○ the number of groups

2 Circle the equation that matches each story problem. Then fill in the correct answer.

a Alexus and her 2 sisters picked 48 strawberries and shared them equally. How many strawberries did each girl get?

$48 \div 2 =$ _____ $\qquad$ $3 \times 48 =$ _____ $\qquad$ $48 \div 3 =$ _____ $\qquad$ $48 - 3 =$ _____

b Miguel is making valentines. It takes $\frac{1}{2}$ of a sheet of paper for each valentine, and Miguel wants to make 26 valentines. How many sheets of paper will he need?

$26 \div \frac{1}{2} =$ _____ $\qquad$ $26 \times \frac{1}{2} =$ _____ $\qquad$ $26 \times 2 =$ _____ $\qquad$ $26 - \frac{1}{2} =$ _____

NAME _____ | DATE _____

Sharing & Grouping—Multiplying & Dividing page 2 of 2

3 Circle the equation that matches each story problem. Then fill in the correct answer.
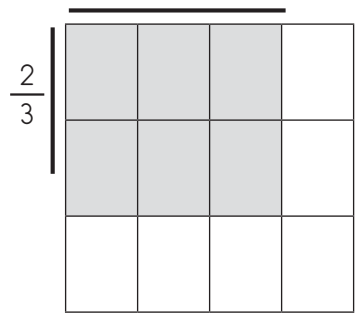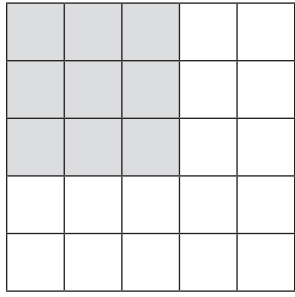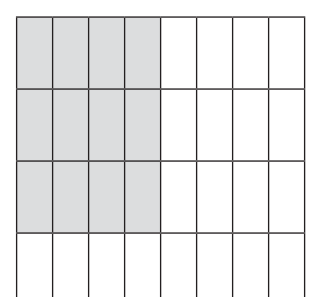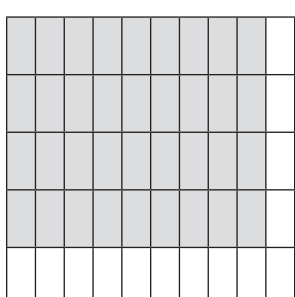
a Ling and her mother are making dumplings. It takes $\frac{3}{4}$ of an ounce of meat for each dumpling, and they are going to make 36 dumplings. How many ounces of meat will they need?

$36 \times 4 =$ _____ $3 \times 36 =$ _____ $\frac{3}{4} \div 36 =$ _____ $36 \times \frac{3}{4} =$ _____

b There was $\frac{1}{2}$ of a pan of cornbread leftover from dinner. Jake and his dad ate half of the leftover cornbread for breakfast. How much of the whole pan did they have at breakfast?

$\frac{1}{2} \times \frac{1}{2} =$ _____ $\frac{1}{4} + \frac{1}{4} =$ _____ $\frac{1}{2} \div \frac{1}{2} =$ _____ $\frac{1}{2} - \frac{1}{2} =$ _____

4 Each of the visual models below shows the results of multiplying one fraction by another. Label each of the shaded regions with its dimensions and area. Then write a multiplication equation to match.

ex Equation: $\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}$

a Equation:

b Equation:

c Equation:

NAME _____ **| DATE** _____

🏠 Operating with Fractions & Whole Numbers page 1 of 2

1 Solve each of the story problems below. For each problem:
- Choose and circle one of the numbers in parentheses, depending on how challenging you want the problem to be.
- Write an expression to represent your problem.
- Use numbers, labeled visual models, or words to solve the problem and explain your strategy.
- Complete the sentence below with your solution to the problem.

a It takes $(\frac{1}{2}, \frac{1}{3}, \frac{3}{4}, \frac{2}{3})$ of a cup of flour to make a batch of pancakes. I have 4 cups of flour. How many batches of pancakes can I make?

Expression: _____

I can make _____ batches of pancakes.

b Little Snail can crawl $(\frac{1}{4}, \frac{1}{3}, \frac{3}{4}, \frac{7}{8})$ of a mile a day. How far can he crawl in 5 days if he crawls the same distance each day?

Expression: _____

Little Snail can crawl _____ miles in 5 days.

c Keiko always takes her water bottle with her when she hikes, and she always drinks half a liter of water for every mile she hikes. Yesterday, she hiked $\frac{3}{4}$ a mile. What fraction of a liter of water did she drink?

Expression: _____

Keiko drank _____ of a liter of water.
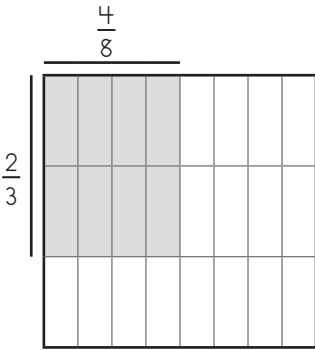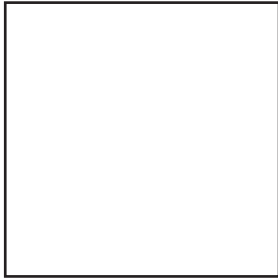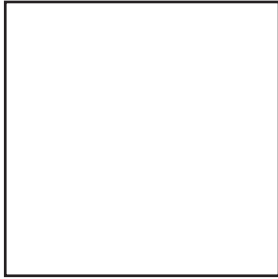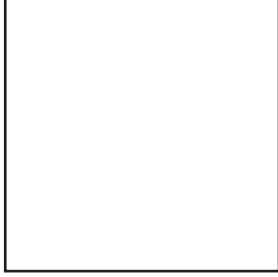
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NAME | DATE

Operating with Fractions & Whole Numbers page 2 of 2

2 Solve each of the multiplication problems below. For each:

- Divide the dimensions of each square so that you can represent each fraction as a dimension of a rectangle.
- Draw and label the dimensions and area, and write the answer.
- Write the problem and answer in words.

ex $\frac{2}{3} \times \frac{4}{8} = \frac{8}{24} = \frac{1}{3}$		Two-thirds of four-eighths is eight twenty-fourths, or $\frac{2}{3}$.
a $\frac{2}{4} \times \frac{3}{5} =$		
b $\frac{2}{3} \times \frac{4}{6} =$		
c $\frac{3}{4} \times \frac{5}{10} =$		

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🏠 Unit 5 Review page 1 of 4

1 Solve each of the story problems below. For each problem:

- Choose and circle one of the numbers in parentheses, depending on how challenging you want the problem to be.

- Write an expression to represent your problem.

- Use numbers, labeled visual models, or words to solve the problem and explain your strategy. (Someone should be able to read your paper and tell how you solved each problem without talking to you to find out.)

- Complete the sentence below with your solution to the problem.

a Mrs. Alvarez had ($\frac{1}{5}$, $\frac{1}{8}$, $\frac{3}{8}$, $\frac{2}{3}$) of a box of pencils. She divided the box equally among (3, 4, 5) students. What fraction of the box of pencils did each student get?

Expression: _____
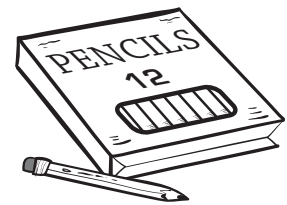
Each students got _____ of a box of pencils.

b Jake and his dad are making flags for a scouting project. They are going to make (6, 12, 18) flags. Each flag takes ($\frac{2}{3}$, $\frac{3}{4}$, $\frac{5}{6}$) of a yard of cloth. How many yards of cloth will they need in all?

Expression: _____

Jake and his dad will need _____ yards of cloth in all.

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NAME _____ | DATE _____
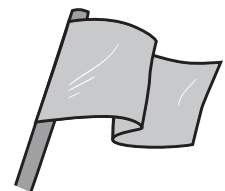
Unit 5 Review page 2 of 4

c It takes ($4\frac{1}{2}$, $4\frac{3}{4}$, $4\frac{1}{4}$) feet of craft lace to make a short lanyard for a keychain. John wants to make a lanyard for each of his (5, 6, 7) aunts and uncles. How many feet of craft lace will he need in all?

Expression: _____

John will need _____ feet of craft lace.

d The soccer team went to Pizza Palace to celebrate the end of the session. They got several rectangular pizzas for the players to share. Each player got ($\frac{1}{5}$, $\frac{1}{4}$, $\frac{3}{8}$) of one of the pizzas. Sara ate ($\frac{3}{8}$, $\frac{2}{3}$, $\frac{5}{6}$) of her share. How much of a whole pizza did Sara eat?

Expression: _____

Sara ate _____ of the whole pizza.

2 Use multiplication to check your answer for each of the division problems below.

ex $100 \div 4 =$ __25__ I know this is correct because $25 \times 4 = 100$	**ex** $\frac{1}{2} \div 2 =$ __$\frac{1}{4}$__ I know this is correct because $\frac{1}{4} \times 2 = \frac{1}{2}$
a $\frac{1}{2} \div 4 =$ _____	**b** $\frac{1}{4} \div 2 =$ _____
c $\frac{1}{3} \div 2 =$ _____	**d** $\frac{1}{4} \div 4 =$ _____

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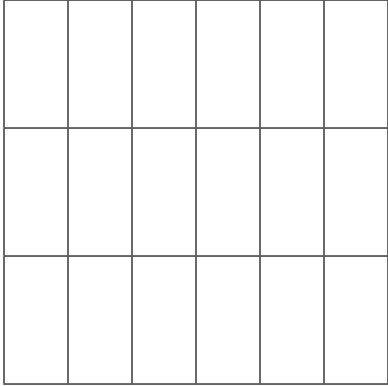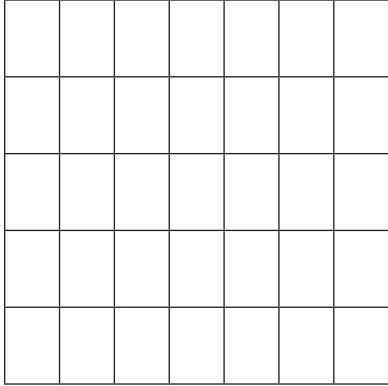
NAME _____ | DATE _____

Unit 5 Review page 3 of 4

3 Use the grids to model and solve each combination. Be sure to label your sketch and write the answer for each problem.

$\frac{2}{3} \times \frac{4}{6} =$ _____

$\frac{2}{5} \times \frac{5}{7} =$ _____

4 Solve each multiplication problem, and give the answer as a mixed number. Show all your work.

$4 \times \frac{5}{8} =$ _____

$12 \times \frac{2}{3} =$ _____

$\frac{3}{5} \times 6 =$ _____

5 Write a story problem for one of the combinations in item 4.

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Unit 5 Review page 4 of 4

6 Valerie watched her friend multiply $\frac{3}{4} \times \frac{5}{6}$. Her friend got an answer larger than $\frac{5}{6}$. Valerie thinks that the answer is not correct. Do you agree? Why or why not?

7 Fill in the bubble to show what each expression below means. Then use labeled sketches and numbers to model and solve each problem. Show your work and remember to write the answer at the bottom of each box.

$2 \div \frac{1}{3}$	$\frac{1}{4} \div 3$
○ How many groups of 2 are there in $\frac{1}{3}$?	○ How many groups of $\frac{1}{4}$ are there in 3?
○ How many groups of $\frac{1}{3}$ are there in 2?	○ What is $\frac{1}{4}$ of 3?
○ What is $\frac{1}{3}$ of 2?	○ If you split $\frac{1}{4}$ into 3 equal shares, how big is each share?
Answer: _____	Answer: _____

8 **CHALLENGE** Maria says that dividing $\frac{1}{2}$ by 3 is the same as multiplying $\frac{1}{2}$ by $\frac{1}{3}$. Do you agree with her? Why or why not? Use numbers, labeled models, or words to explain your thinking.

NAME _____ | DATE _____

🏠 Plotting Points on a Graph page 1 of 2

1 Plot and label these points on the coordinate plane below. The first one has been done as an example.

(1, 3)   (2, 6)   (3, 9)   (4, 12)   (5, 15)
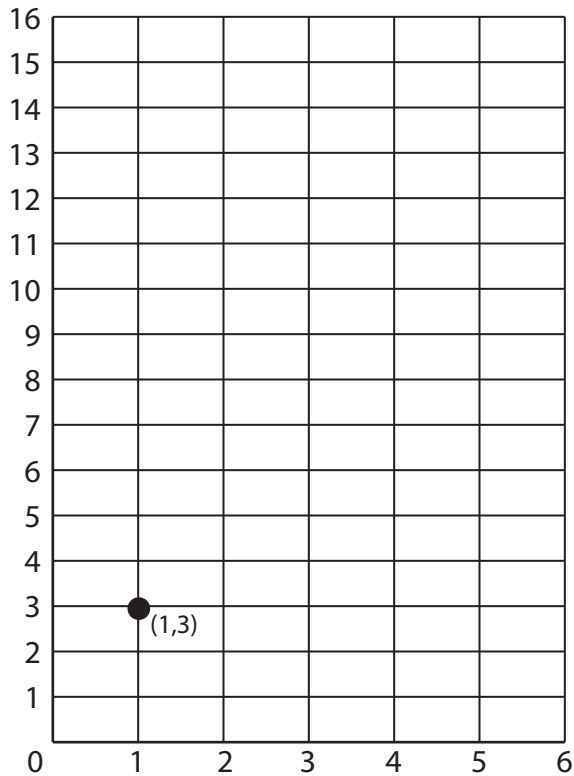
2 Amanda plotted 5 points on the coordinate plane to the right. What ordered pairs did Amanda plot?

Amanda's ordered pairs: (__1__, __2__) (____, ____)

(____, ____) (____, ____) (____, ____)

3 What is the next ordered pair if Amanda's pattern continues? (____, ____)

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NAME | **DATE**
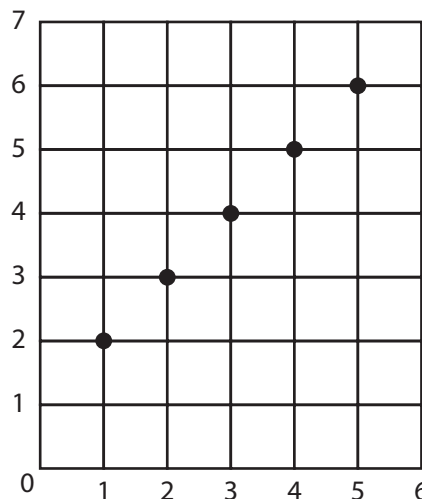
Plotting Points on a Graph page 2 of 2

4 Zoe planted a walnut tree. Every week, she measures the tree and records its growth. On the first week, the tree was $27\frac{1}{2}$ inches tall. On the second week, it was $29\frac{1}{4}$ inches tall. On the third week, it was $31\frac{1}{3}$ inches tall. How much did the tree grow from the first week until it was measured on the third week? Show your work.

5 CHALLENGE There are 8 people on a committee. Each time they meet, they shake hands with each other so that each person shakes everyone else's hand once.

a Each time they meet, how many handshakes are there? Use numbers, labeled sketches, or words to model and solve this problem. Show all your work.

b Imagine that 3 committee members arrive late. The other 5 members have already shaken hands. How many handshakes will there be when the 3 late members arrive? Use numbers, labeled sketches, or words to model and solve this problem. Show all of your work.

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More About the Short Towers Sequence page 1 of 2

1 Here are the first 3 arrangements in the Short Towers cube sequence you worked with in class. Explain to an adult at home how the towers change from one arrangement to the next, and have the adult initial the sheet to show he or she understands.

Arrangement 1	Arrangement 2	Arrangement 3	Initials

2 **a** Here is the 4th arrangement in the sequence. How many cubes are in this arrangement?
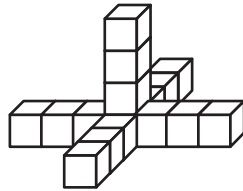
b Shanda says you don't have to count the cubes one by one to find out how many are in the 4th arrangement. She says there is 1 cube in the middle and then 5 arms of 3 cubes each.

Write an equation to show how Shanda figured out the number of cubes in the 4th arrangement.

Arrangement 4

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NAME | DATE
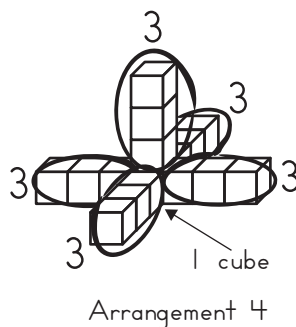
More About the Short Towers Sequence page 2 of 2

3 How many cubes are in the 5th arrangement? Use Shanda's method or come up with one of your own to figure it out without counting one by one. Label the picture of arrangement 5 and write an equation to show your thinking.
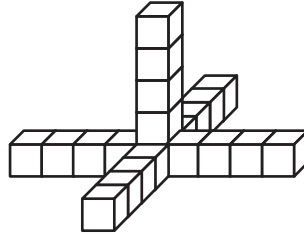
Arrangement 5

4 How many cubes would it take to build the 23rd arrangement in this sequence? Show your thinking using numbers, words, or labeled sketches.

5 CHALLENGE A certain arrangement in this sequence takes 631 cubes to build. Which arrangement is it? Show your thinking using numbers, words, or labeled sketches.

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🏠 **The Lemonade Stand** page 1 of 4

Troy and his little sister are going to sell lemonade to earn money for the wildlife refuge near their home. Troy's parents have agreed to pay for the ingredients and the cups. The kids are going to charge 50¢ a glass for their lemonade.

1 Fill in the table below to show how much money they'll earn.

Number of glasses sold	1	2	3		5		7	8	9	
Money earned	$0.50		$1.50			$3.00				$5.00

2 Use the grid below to graph the amount of money they'll earn as they sell glasses of lemonade. Give your graph a good title.

NAME _____ | DATE _____
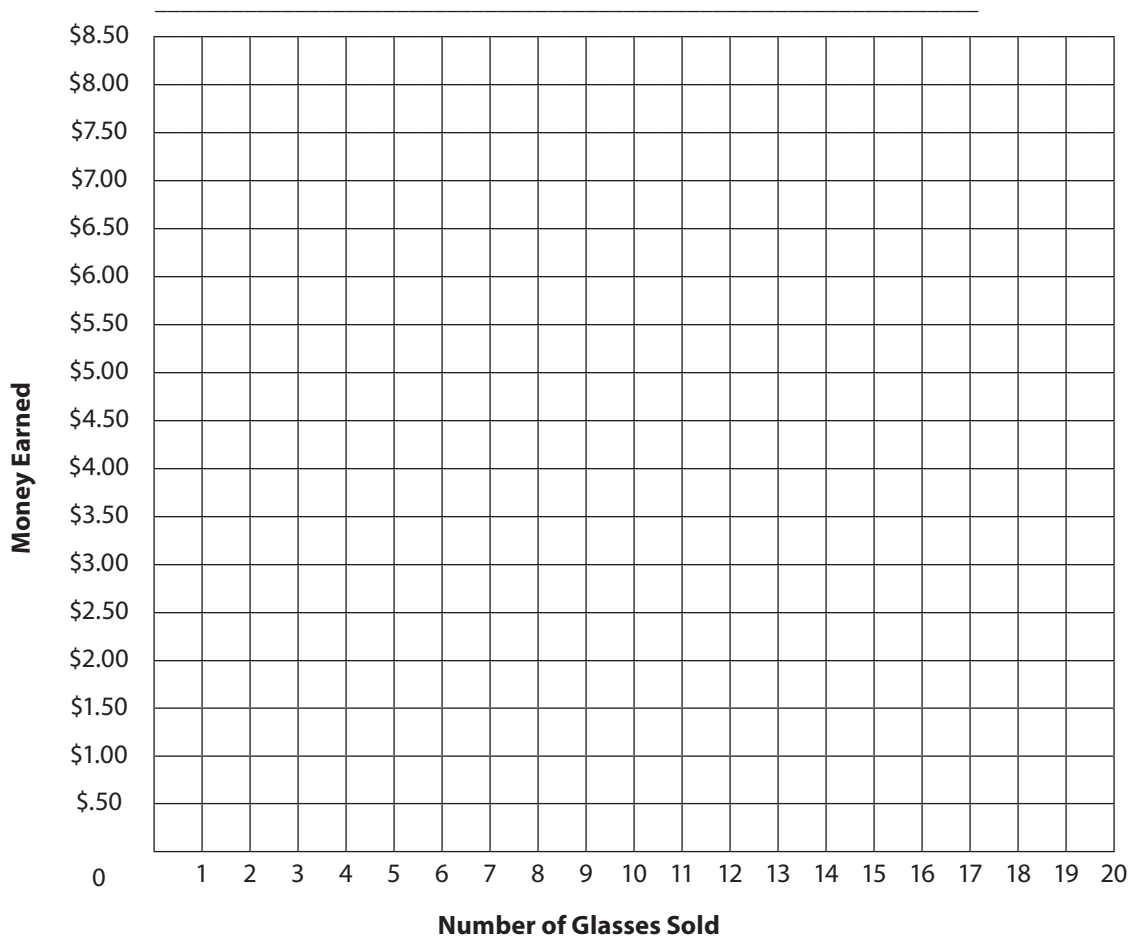
The Lemonade Stand page 2 of 4

3 Why do the points on the graph form a straight line?

4 The first day they opened their lemonade stand it was really hot. Troy and his sister sold 24 glasses of lemonade between noon and 3:00 pm. How much money did they make? Show your work.

5 Between 1:00 pm and 5:00 pm on the second day, they made $14.50. How many glasses of lemonade did they sell during those 4 hours? Show your work.

(continued on next page)

NAME | DATE

The Lemonade Stand page 3 of 4

6 What do you have to do to figure out how much money they'll earn for selling any number of glasses of lemonade? Give your answer in words, and then write an equation to match.

7 Their goal is to earn $75.00 for the wildlife refuge. How many glasses of lemonade will they need to sell to reach their goal? Show your work.

8 Here is a recipe for 1 glass of lemonade:

$1\frac{1}{2}$ tablespoons lemon juice
$\frac{1}{4}$ cup sugar
1 cup of water

The pitcher the kids were using held 8 glasses of lemonade. How much lemon juice, sugar, and water did it take to make enough lemonade to fill the pitcher?
Show your work.

(continued on next page)

NAME _____ | DATE _____

The Lemonade Stand page 4 of 4

9 <u>CHALLENGE</u> Use your answer to problem 7, along with the information below, to figure out how much it cost Troy's parents to buy the ingredients for all the lemonade they sold. (The kids did reach their goal of earning $75.00 exactly.) Show all of your work.

- A 1-quart bottle of lemon juice costs $2.95.
- There are 16 tablespoons in a cup and 4 cups in a quart.
- A 5-pound bag of sugar costs $3.29.
- There are $11\frac{1}{4}$ cups of sugar in a 5-pound bag.
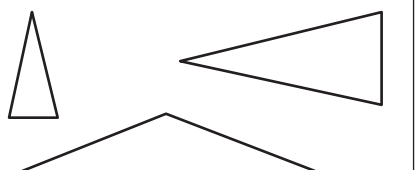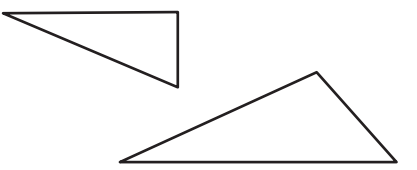
Types of Triangles page 1 of 2
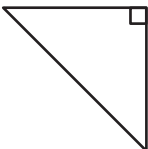
You can group triangles by the size of their angles.

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

2 Circle the *right triangle* (one right angle) that is also an *isosceles triangle* (two sides the same length).
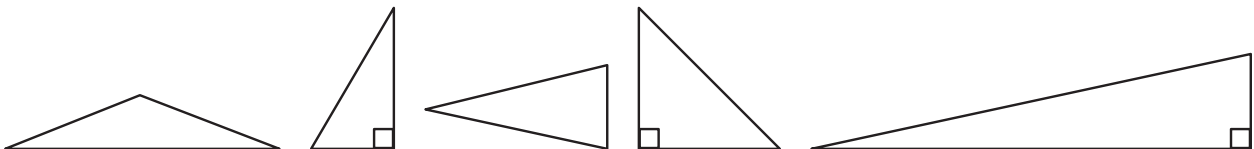
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NAME |DATE

Types of Triangles page 2 of 2

3 Circle the *right triangle* (one right angle) that is also a *scalene triangle* (no sides the same length).
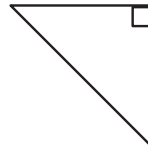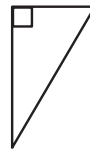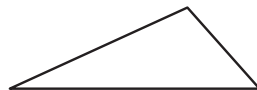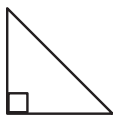
4 Draw the triangles described below.

a An obtuse isosceles triangle
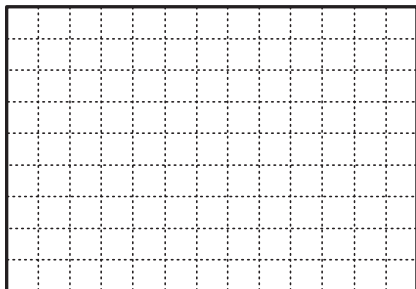
b An acute isosceles triangle
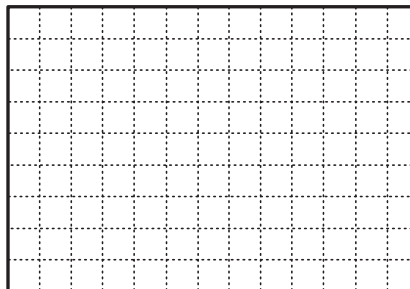
5 **CHALLENGE** Lawrence said he drew a right obtuse triangle. Rosa said that was impossible. Explain why Rosa is correct.

Hint The sum of the angle measures in any triangle is 180°.

NAME | DATE
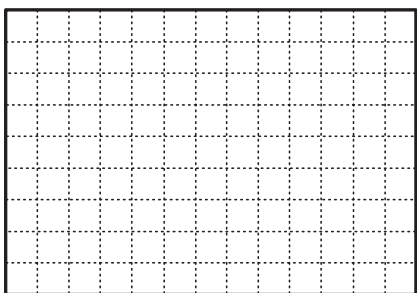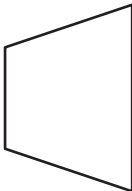
Classifying Quadrilaterals page 1 of 2

A quadrilateral is any polygon that has 4 sides. The hierarchy below shows the different types of quadrilaterals.

Any polygon with 4 sides

Quadrilateral

A quadrilateral with exactly 1 pair of parallel sides

Trapezoid

A quadrilateral with 2 pairs of parallel sides opposite each other

Parallelogram

A quadrilateral with 2 pairs of adjacent sides that are congruent

Kite

A parallelogram with 4 right angles

Rectangle

A parallelogram or kite with 4 congruent sides

Rhombus

A parallelogram or kite with 4 right angles and 4 congruent sides

Square

1 Look carefully at the figures below and on the next page. Find out how many right angles, pairs of parallel sides, and pairs of congruent sides each figure has. Then circle all the words that describe the figure. Use the hierarchy above to help.
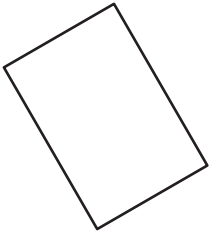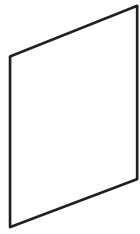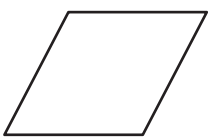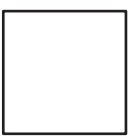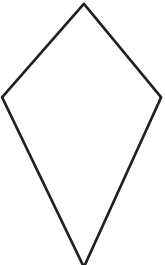
Figure	How many right angles?	How many pairs of congruent sides?	How many pairs of parallel sides?	Circle the word(s) that describe(s) the figure.
a				trapezoid parallelogram rectangle rhombus quadrilateral kite

(continued on next page)

NAME | DATE

Classifying Quadrilaterals page 2 of 2

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.
b				trapezoid parallelogram rectangle rhombus square kite
c				trapezoid parallelogram rectangle rhombus square kite
d				trapezoid parallelogram rectangle rhombus square kite
e				trapezoid parallelogram rectangle rhombus square kite
f				trapezoid kite parallelogram square rhombus quadrilateral

NAME |DATE

Measurement & Multiplication Review page 1 of 2

1 a 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 lengths of the pool will we need to swim? 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?

4 CHALLENGE How many centimeters are there in 1 meter?

a How many square centimeters are in 1 square meter?

b How many cubic centimeters are in 1 cubic meter?

(continued on next page)

NAME | DATE

Measurement & Multiplication Review page 2 of 2

5 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	63×24	39×19	28×38
Estimate	60 × 25 = 1,500		
Solution	$\begin{array}{r} 1 \\ 63 \\ \times\ 24 \\ \hline 252 \\ +\ 1{,}260 \\ \hline 1{,}512 \end{array}$		

Problem	89×22	71×52	62×42
Estimate			
Solution			

6 Circle the two numbers whose product is 627.

13

19

33

49

NAME _____ | DATE _____

🏠 Camping Trip page 1 of 2

The Zamora family is going on a camping trip next week. There are four people in the family: Mr. and Mrs. Zamora and the 11-year-old twins, Ramon and Daria. Help them do some planning for their trip. Fill in the bubble beside the correct answer to each question below.

1 Mrs. Zamora wants to cut a piece of rope that's long enough to dry the family's laundry on every day. Which of these units should she use to measure the rope?

  ○ inches   ○ feet   ○ yards   ○ miles

2 Mr. Zamora wants to figure out how far they'll have to drive to get to the campsite. He already knows it will take about a day to get there. Which of these units should he use?

  ○ inches   ○ feet   ○ yards   ○ miles

3 Ramon wants to find the area of his sleeping bag to see how much room he'll have in the family's tent. Which of these units should he use?

  ○ square inches   ○ square feet   ○ square yards   ○ square miles

4 Daria says that when they arrive she's going to measure the area of their campsite. Mrs. Zamora says the campsite is big enough for their car, their tent, their picnic table and chairs, and their campfire, with a little room left over. Which of these units should Daria use?

  ○ square inches   ○ square feet   ○ square yards   ○ square miles

5 Mr. Zamora wants to find the volume of the car's trunk so he'll know how much luggage will fit. Which of these units should he use?

  ○ cubic inches   ○ cubic feet   ○ cubic yards

6 Daria is going to collect pebbles at the lake. She wants to measure the volume of a metal lunch box to keep them in. Which of these units should she use?

  ○ cubic inches   ○ cubic feet   ○ cubic yards

NAME | DATE

Camping Trip page 2 of 2

Review

7 Jasmine is planning a large family gathering. She needs to rent at least 200 chairs. Company A charges $0.50 per chair for the first 100 and then $0.25 for every chair after that. Company B charges $0.40 per chair.

a Which company should Jasmine rent from? Explain your answer.

b How much money will she save by using that company? Show your work.

8 Frank bought several items in the produce department of his grocery store for a family gathering. He purchased 13.25 pounds of apples and twice that amount of oranges. What was the total weight of the fruit that Frank bought? Show your work.

9 **CHALLENGE** Frank also made punch to take to the family gathering. He filled a jar with $3\frac{3}{4}$ liters of punch and another jar with $5\frac{3}{4}$ liters of punch. On his way to the family gathering, some of the punch spilled out of the jars in his car. Only $1\frac{1}{2}$ liters were left in the first jar, and $3\frac{1}{4}$ liters were left in the second jar. How much of the punch was spilled?

NAME | DATE

🏠 Another Camping Trip page 1 of 2

The Eng family is going on a camping trip next week. There are 4 people in the family: Mr. and Mrs. Eng and their children, Jason and Kristen. Help them do some planning for their trip. Fill in the bubble beside the correct answer to each question below.

1 The shoelaces on Jason's tennis shoes are almost worn out. He has to measure them so he gets the right length at the store. Which of these units should he use?

○ millimeters ○ centimeters ○ meters ○ kilometers

2 Mrs. Eng says it will be a 3-minute walk from their tent to the lake. Kristen wants to measure the distance. Which of these units should she use?

○ millimeters ○ centimeters ○ meters ○ kilometers

3 Kristen wants to find the area of the floor of her family's tent to make sure everything will fit. Which of these units should she use?

○ square centimeters ○ square meters ○ square kilometers

4 Jason says that when they arrive, he's going to measure the area of the parking space to make sure their truck and bikes will fit. Which of these units should he use?

○ square centimeters ○ square meters ○ square kilometers

5 Which formula should Kristen use to find the area of the campsite?

○ $A = 2l \times 2w$ ○ $A = l \times w \times h$ ○ $A = l \times w$ ○ $A = B \times h$

6 Mr. Eng wants to find the volume of the family car trunk so he'll know how much luggage will fit back there. Which of these units should he use?

○ cubic millimeters ○ cubic centimeters ○ cubic meters

7 Jason wants to measure the volume of a shoe box to find out how many comic books he can fit into it for the trip. Which of these units should he use?

○ cubic millimeters ○ cubic centimeters ○ cubic meters

8 Which formula should Jason use to find the volume of the shoe box?

○ $V = l \times w$ ○ $V = 2l + 2w$ ○ $V = l \times w \times h$ ○ $V = l + w + h$

(continued on next page)

NAME |DATE

Another Camping Trip page 2 of 2

9 Solve the two story problems below. Show your thinking using words, numbers, or labeled sketches.

a The regular-sized box of cereal measures 6 cm by 30 cm by 20 cm. What is the volume of the cereal box?

b The large cereal box is twice as wide as the regular.
- Do you have enough information to find the volume?
- If not, what else do you need? If so, what is the volume of the large cereal box?

10 CHALLENGE Graph and label the points that represent cubes with side lengths of 1, 2, 3, and 4 centimeters and their volumes. The first one is done for you. What does the point (1,1) represent?

Volume of Cubes

Volume (in cubic centimeters)

Side Length (in centimeters)

NAME _____ | **DATE** _____
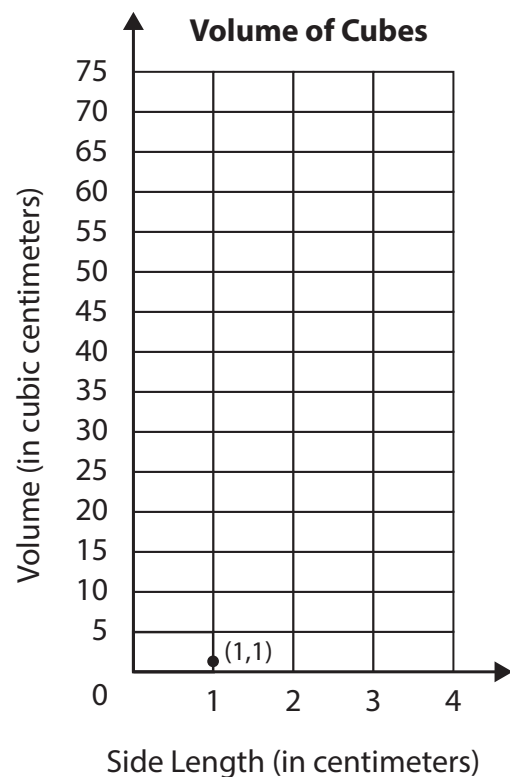
🏠 **Abby's Arrays** page 1 of 2

1 Abby is setting up an array to solve $1\frac{3}{4} \times 2\frac{1}{2}$.

    a Fill in the blanks on the array.
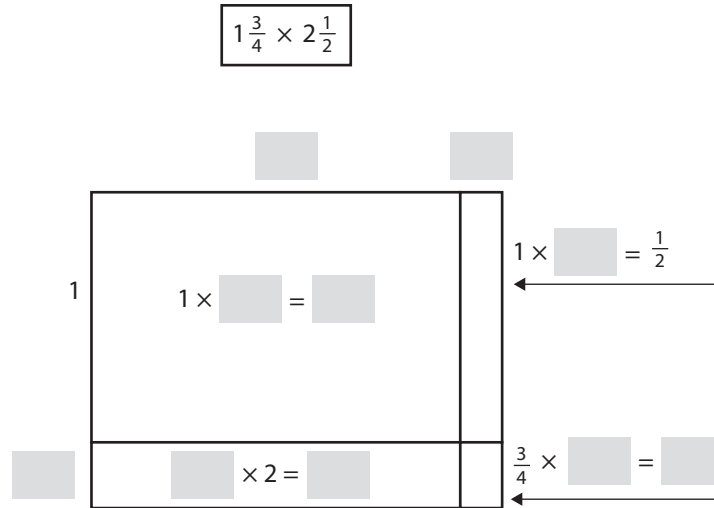
$$\boxed{1\tfrac{3}{4} \times 2\tfrac{1}{2}}$$

    b Fill in the blanks: $1\frac{3}{4} \times 2\frac{1}{2}$ = _____ + _____ + _____ + _____ = _____

2 Abby needs to solve $2\frac{1}{2} \times 3\frac{2}{5}$.

    a Sketch and label an array that shows $2\frac{1}{2} \times 3\frac{2}{5}$.

    b Use your sketch to solve the problem:

       $2\frac{1}{2} \times 3\frac{2}{5}$ = _____ + _____ + _____ + _____ = _____

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Abby's Arrays page 2 of 2

3 Use doubling and halving to fill in the blanks and solve the problems.

a $5\frac{1}{4} \times 12 = $ _____ $\times 6 = $ _____

b $16 \times 3\frac{1}{2} = 8 \times$ _____ $= $ _____

c $36 \times$ _____ $= 18 \times 9 = $ _____

d $15 \times 6\frac{2}{3} = $ _____ $\times 3\frac{1}{3} = $ _____

4 Adam made a birthday card for his sister. The rectangular card was $6\frac{1}{2}$ inches by $9\frac{1}{3}$ inches. What is the area of the birthday card? Make a labeled sketch to model and solve this problem. Show all of your work.

5 Convert these fractions to decimals.

a $\frac{8}{10} = 0.$ _____   **b** $\frac{3}{4} = 0.$ _____

c $\frac{4}{5} = 0.$ _____   **d** $\frac{6}{5} = $ __. _____

6 **CHALLENGE** Justin got a sack of jelly beans in 5 different colors. Half of them were red, $\frac{1}{6}$ were green, $\frac{1}{6}$ were yellow, $\frac{1}{12}$ were orange, and 6 were black. How many of each color did he get, and how many jelly beans were there in all? Show your work.

Unit 6 Review page 1 of 2

Use the diagrams below to answer the following questions.
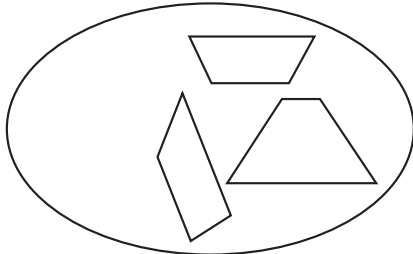
Trapezoids   **Not Trapezoids**
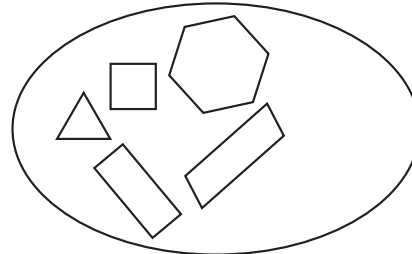
1 List three properties of a trapezoid.

2 Fill in the bubbles beside all the other names you could use for a trapezoid.
   ○ quadrilateral   ○ triangle
   ○ rectangle   ○ polygon

3 Explain why a trapezoid can't be called a parallelogram.

4 While playing Polygon Search, Shana graphed the points (1,2), (4,2), (4,5) and (1,5).

   a Graph the ordered pairs.
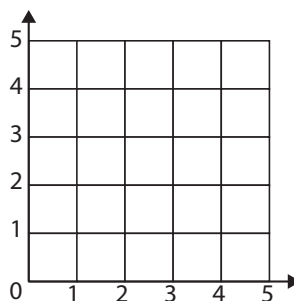
   b Name the shape that Shana drew. _____

   c List 2 properties of this shape.

(continued on next page)

NAME _____ | **DATE** _____

Unit 6 Review page 1 of 2

Cooper and Luke's Sequences

KEY
x Cooper's sequence
● Luke's sequence

5 Cooper and Luke each made a sequence with tiles. Then they graphed their sequences on the same coordinate grid.

a List the first 5 ordered pairs of Cooper's sequence:

1,2				

b List the first 5 ordered pairs of Luke's sequence:
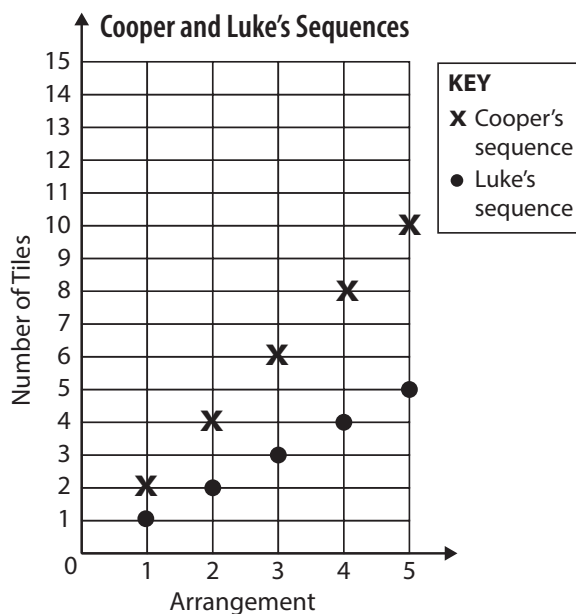
c What can you tell about the boys' tile sequences from looking at the graph they made? Fill in the bubbles beside all the correct observations.

○ Cooper used twice as many tiles as Luke in each arrangement.

○ Cooper started with 3 tiles and added 2 more tiles for each new arrangement.

○ Luke's third arrangement had 6 tiles.

○ There would be 12 tiles in Cooper's sixth arrangement.

6 A packing box is 3 feet wide, 5 feet long, and 8 feet high. What is its volume? Show your work.

7 Shanti keeps her school supplies in a little container with a base that is 7″ by 7″. The volume of the container is 343 cubic inches.

a What is the height of the container? Show your work.

b What shape is the container? How do you know?

NAME _____ | **DATE** _____

🏠 **More Array Work** page 1 of 2

Fill in the blanks on each array. Then write two equations—one multiplication and one division—to match the array.

1

```
         24
   ┌──────────────┐
[  ]│     240      │
   ├──────────────┤
[  ]│     120      │
   └──────────────┘
```

_____ × _____ = _____

_____ ÷ _____ = _____

2

```
         12
   ┌──────────────┐
20 │     [  ]      │
   │              │
   ├──────────────┤
[ ]│      72      │
   └──────────────┘
```

_____ × _____ = _____

_____ ÷ _____ = _____

3

```
      1      3/4
   ┌─────┬─────┐
3/4│ [ ] │ [ ] │
   └─────┴─────┘
```

_____ × _____ = _____

_____ ÷ _____ = _____

4

```
            [  ]                    25
   ┌────────────────────┬────────────────────┐
 8 │        240         │        [  ]         │
   └────────────────────┴────────────────────┘
```

_____ × _____ = _____

_____ ÷ _____ = _____
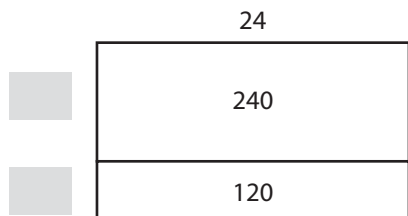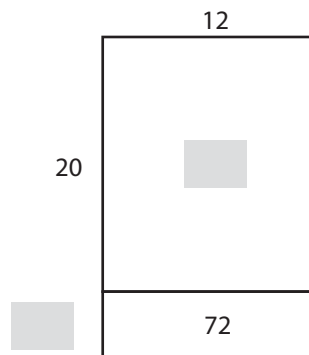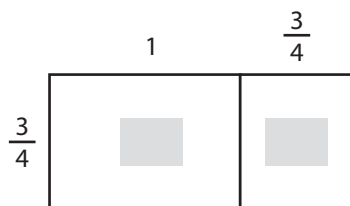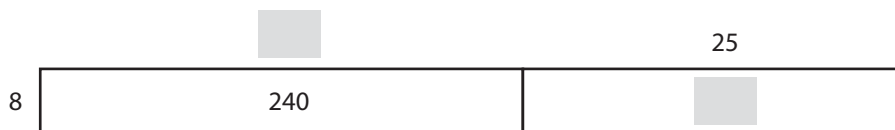
More Array Work page 2 of 2

5 Evaluate each expression.

a $(12 \times 4) \times \frac{1}{4} =$ _____

b $48 \times (6 \times \frac{1}{3}) =$ _____

c $\frac{3}{5} \times (4 \times 5) =$ _____

d $16 \times (\frac{3}{4} \times 1) =$ _____

e $\frac{1}{2} \times (6 \times \frac{2}{3}) =$ _____

6 Ben drove $\frac{4}{7}$ of the way to his friend's house before he stopped to eat lunch. If the distance to his friend's house was a total of 427 miles, how far did Ben drive before he stopped for lunch? Show your work.

7 Sage hiked $12\frac{1}{2}$ miles one day on her vacation. Her younger brother Chase hiked $\frac{1}{4}$ as far as Sage. How far did Chase hike? Show your work.

8 **CHALLENGE** Randy drank $\frac{3}{4}$ of a 250 ml container of juice for breakfast, $3\frac{5}{6}$ 150 ml water bottles throughout the day, and $\frac{7}{8}$ of a 400 ml smoothie for dinner.

a Write an expression to show how much liquid Randy drank in all.

b How many milliliters did Randy drink in all? Show your work.

c How many liters is this?

NAME _____ | DATE _____

🏠 More Roll Five & Ratio Tables page 1 of 2

Victor and Juan were playing Roll Five. They have to add, subtract, multiply or divide any of the digits on their five dice to reach their target number. Players are awarded 1 point for each digit used.

1 Victor's target number is 18. He rolled the digits 2, 2, 6, 7, and 9.

a Victor knows he can record 2×9 to make 18, but he wants to find another expression that will give him a higher score. Record an expression Victor could use.

b What is Victor's score?

c Victor thinks he can start with 7, subtract 2, subtract another 2, and then multiply by 6 to get 18. Juan says that the expression Victor recorded, $7 - 2 - (2 \times 6)$, does not reach 18. How can Victor rewrite his expression so that he gets a total of 18?

d What is Victor's score?

2 Juan's target number is 36. He rolled the digits 2, 4, 2, 5, and 8.

a Juan says that 4 less than 8 times 5 is 36. Write an expression to record his thinking, and then solve the problem to see if Juan gets his target number.

b Record another equation Juan could use to reach his target number.

3 Later, Victor was solving the problem 483 ÷ 21. He started the ratio table below. Complete the ratio table to find the quotient. Add to Victor's ratio table as needed.

1	2	3	10		
21					483

$483 \div 21 =$ _____

(continued on next page)

NAME _____ | DATE _____

More Roll Five & Ratio Tables page 2 of 2

4 Victor also needed to solve 870 ÷ 30. Help him by filling in the ratio table below to solve 870 ÷ 30.

1	2	4	10		
30					870

870 ÷ 30 = _____

5 Find the quotient of 608 ÷ 32. Model your thinking with a rectangular array or an area model.

6 Fill in chart below to round each number to the nearest one, tenth, and hundredth.

Number	Rounded to Nearest One	Rounded to Nearest Tenth	Rounded to Nearest Hundredth
1,765.087			
398.393			
110. 099			

7 **CHALLENGE** Annie needed to solve 855 ÷ 19. She thought she would solve 855 ÷ 20 and then adjust, since 20 is an easier number to work with than 19. Can she solve the problem this way? Why or why not? Explain your thinking.

NAME | DATE

🏠 **More Division with Fractions** page 1 of 2

1 Jamal can paint $\frac{1}{5}$ of his closet in 12 minutes. How long will it take him to paint the entire closet? Complete the ratio table to show the answer.

minutes	12	
amount of closet painted	$\frac{1}{5}$	

2 Frank can clean $\frac{1}{4}$ of his room in 15 minutes. How long will it take Frank to clean the entire room? Show your thinking on a ratio table.

3 Write a story problem for the expression $15 \div \frac{1}{3}$. Then solve the problem.

NOTE Remember that $15 \div \frac{1}{3}$ means, *"How many thirds are there in 15?"*

(continued on next page)

NAME _____ | **DATE** _____

More Division with Fractions page 2 of 2

Review

4 Find the sum or difference.

a $\frac{2}{3} + \frac{4}{9}$

b $\frac{3}{5} + \frac{5}{12}$

c $1\frac{1}{3} + \frac{7}{9}$

d $2\frac{4}{5} - \frac{11}{12}$

e $\frac{6}{7} - \frac{1}{2}$

f $2\frac{1}{9} - \frac{5}{6}$

5 Ling is solving the problem 125×16.

a Use the standard algorithm to find the product of 125×16.

b Use another strategy to solve 125×16. Think of the most efficient strategy you know.

6 Convert the following measurements.

a 1.2 liters = _____ ml

b 13,000 ml = _____ liters

c 26.74 liters = _____ ml

d 2,675 ml = _____ liters

e CHALLENGE 3 days = _____ seconds

NAME _____ | **DATE** _____

📖 **You Choose** page 1 of 2

1 Jade's mom made 8 cups of chicken soup. She wants to freeze the soup in $\frac{1}{2}$-cup containers. How many containers will she need to hold all of the soup?

   a Write an expression that represents the problem.

   b Solve the problem. Show your thinking with equations, a ratio table, or a rectangular array.

2 Jade's braces cost her parents $2,848. Her parents will pay $89 each month. How many months will it take them to pay for her braces?

   a Write an expression that represents the problem.

   b Solve the problem. Show your thinking with equations, a ratio table, or a rectangular array.

3 Jade's brother, Marcus, has 3 licorice ropes to share with his friends. He cut each rope into fourths. How many pieces did he have when he was finished?

   a Write an expression that represents the problem.

   b Solve the problem. Show your work.

NAME _____ | DATE _____

You Choose page 2 of 2

4 Evaluate each expression.

a $2 \times (4 + (120 \div 6)) = $ _____

b $\frac{16}{4} + (13 \times 9) = $ _____

c $(2 \times 3 \times 2) - (9 \div 3) = $ _____

d $(\frac{2}{3} \times 12) + (14 - (2 \times 2)) = $ _____

5 Find the product.

a $180 \times \frac{2}{3} = $ _____

b $\frac{4}{5} \times 22 = $ _____

c $\frac{2}{3} \times \frac{3}{4} = $ _____

6 Write a story problem for the problem $21 \times \frac{3}{7}$. Then solve the problem and show your work.

7 CHALLENGE Jasmin had a large collection of seashells from her trip to the beach. She gave $\frac{1}{2}$ of the shells to her 5 siblings to share evenly, and $\frac{1}{4}$ of the shells to her two friends to share evenly. Did a single friend or a sibling get more of the collection? How do you know?

NAME | DATE

Related Division Problems page 1 of 2

1 Eva has 680 cookies and several plates. She puts 68 cookies on each plate. How many plates does Eva use?

a Write an equation for the problem.

b Solve the problem. Show your work.

2 Max has 612 cookies and several plates. He puts 68 cookies on each plate. How many plates does Max use?

a Write an equation for the problem.

b Solve the problem. Show your work.

3 Erika has 748 cookies and several plates. She puts 68 cookies on each plate. How many plates does Erika use?

a Write an equation for the problem.

b Solve the problem. Show your work.

Related Division Problems page 2 of 2

4 Solve. *Hint: Use the results of the first problem to help with the rest.*

a 840 ÷ 84 = _____

b 924 ÷ 84 = _____

c 756 ÷ 84 = _____

d 672 ÷ 84 = _____

e 1,008 ÷ 84 = _____

Review

5 What is the volume of a box that has a length of 8 cm, a width of 14 cm, and a height of 12 cm? Show your work.

6 What is the volume of a box that has a base of area 38 cm^2 and a height of 22 cm? Show your work.

7 Fill in the blanks to make each equation true.

a 8.21 + 3.89 = _____ + 4.00

b 0.997 − _____ = 1.000 − 0.457

c 28 × 24 = (28 × 25) − (28 × _____)

d 28 × 24 = (56 × _____)

e 89 × 17 = (_____ × 17) − (1 × 17)

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More Division Practice page 1 of 2

1 Mr. Arnold's students are going on a field trip to the Art Museum. The 28 students' tickets cost $161. How much did each ticket cost?

a Solve the problem. Show your work.

b Between which two whole numbers does your answer lie? _____ and _____

c Write an equation to represent the problem and the answer.

d Explain what you did with the remainder, if any, and why.

2 Solve. Show your work.

$1065 \div 39 =$
$1953 \div 36 =$
$837 \div 45 =$

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More Division Practice page 2 of 2

3 Solve each problem. Show your work.

a 270 ÷ 27 = _____

b 540 ÷ 27 = _____

c 810 ÷ 27 = _____

d What strategy or strategies did you use for these problems?

4 Solve each problem. Show your work.

a 430 ÷ 43 = _____

b 473 ÷ 43 = _____

c 387 ÷ 43 = _____

d What strategy or strategies did you use for these problems?

5 Convert each fraction to a decimal.

a $\frac{6}{8}$ = 0._____ **b** $1\frac{3}{4}$ = 1._____

6 Convert each decimal to a fraction.

a 0.6 = _____ **b** 1.25 = _____

7 Round each number to the nearest tenth, whole number, ten, and hundred.

	tenth	whole number	ten	hundred
1,806.51				
8731.89				
603.04				

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🏠 **Division Review** page 1 of 2

Solve each problem. Be sure to show your work.

1 Kyra made 184 brownies for a potluck dinner.

    a If she arranges them on 12 plates, how many brownies will be on each plate?

    b If she arranges them on 15 plates, how many brownies will be on each plate?

    c If she arranges them on 23 plates, how many brownies will be on each plate?

    d Should Kyra arrange the brownies on 12, 15, or 23 plates? Why?

2 Solve:

    a $\frac{1}{4} \div 9 =$ _____

    b $7 \div \frac{1}{6} =$ _____

    c $\frac{1}{5} \div 8 =$ _____

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Division Review page 2 of 2

3 Solve each problem. Show your work.

a 380 ÷ 38 = _____

b 190 ÷ 38 = _____

c 570 ÷ 38 = _____

d What strategy or strategies did you use for these problems?

4 Solve each problem. Show your work.

a 670 ÷ 67 = _____

b 603 ÷ 67 = _____

c 737 ÷ 67 = _____

d What strategy or strategies did you use for these problems?

5 **CHALLENGE** Lily has 1,062 books to give away. She gave 279 books to her younger sister. She gave $\frac{1}{3}$ of her remaining books to her brother. She divided the remaining books into 15 boxes to give to a homeless shelter. If she put the same number of books into each of the 15 boxes, how many books are in each box?

Reviewing Numbers Small & Large page 1 of 2

1 Write two fractions that are equal to each decimal number.

0.2 = _____ and _____   0.02 = _____ and _____

0.002 = _____ and _____   0.06 = _____ and _____

2 Complete the chart below.

Number	0.1 less	0.1 greater	0.01 less	0.01 greater	0.001 less	0.001 greater
3.5	3.4	3.6	3.49	3.51	3.499	3.501
7.38						
12.03						
16.7						
3.784						
13						

3 Round each number to the place shown to complete the chart below.

Number	Nearest tenth (0.1) Look at the 0.01 place.	Nearest hundredth (0.01) Look at the 0.001 place.	Nearest thousandth (0.001) Look at the 0.0001 place.
0.5477	0.5	0.55	0.548
0.9403			
0.0875			
8.0035			

4 A microgram is a unit of mass that is one millionth of a gram (0.000001 g) or one thousandth of a milligram (0.001 mg). What is the mass, in micrograms, of 100 milligrams?

(continued on next page)

NAME | DATE

Reviewing Numbers Small & Large page 2 of 2

5 The football team for the University of Hawaii, the Rainbow Warriors, plays its home games in the Aloha Stadium in Honolulu, Hawaii. The stadium holds about 50,000 people.

a How many stadiums of this size would it take to hold 500,000 people (a bit less than the number of people living in Fresno, California)?

b According to estimates, there are over 100 million people living in the Philippines. How many Aloha Stadiums would it take to hold 100 million people?

6 The table below shows the estimated population of different countries as of 2014. Round each number to complete the table.

Country	Population	Nearest 1,000,000	Nearest 100,000	Nearest 10,000
Brazil	203,562,000	204,000,000	203,600,000	203,560,000
Ethiopia	87,952,991			
Italy	60,769,102			
Burma	51,419,420			
Canada	35,540,419			
Belgium	11,225,469			

NAME _____ | **DATE** _____

📖 Olympic Swimmers page 1 of 2

For each problem, first estimate the answer and then solve the problem. Show your thinking using words, numbers, or labeled sketches.

1 In the 2012 Olympics, U.S. athlete Nathan Adrian finished the 100-meter freestyle swim in 47.52 seconds. If Nathan swam at the same pace in a regular 25-meter pool, what would his time have been per lap?

Estimate _____ Answer _____

2 Dana Vollmer set a world record in the 100-meter butterfly finals in London. Her time was 55.98 seconds. If Dana swam at the same pace in a 25-meter pool, what would her time be per lap?

Estimate _____ Answer _____

3 Missy Franklin competed in seven Olympic swimming events and posted five gold medals in London. Her time in the 100-meter backstroke was 58.33 seconds. If Missy swam at the same pace in a 25-meter pool, what would her time be per lap?

Estimate _____ Answer _____

(continued on next page)

Olympic Swimmers page 2 of 2

4 In London in 2012, Michael Phelps won a gold medal for the 100-meter butterfly with a time of 51.21 seconds. If Michael had been swimming that event in a 25-meter pool, what would his time have been per lap?

Estimate _____ Answer _____

5 **CHALLENGE** In the men's 400-meter relay, each of 4 team members swims a 100-meter leg for a total of 400 meters swum. One team swam the relay with a total time of 3 minutes and 29.32 seconds.

a If each of the four members of the team posted the same time, what would their individual times be? (Hint: Think about how long it took the swimmers to swim each leg of the relay.)

Estimate _____ Answer _____

b An Olympic pool is 50 meters long, so in the 400-meter relay, each team member swims two 50-meter laps. If each member of this team swam their first lap just as fast as their second lap, how long did it take to swim each lap?

Estimate _____ Answer _____

Olympic Track Star page 1 of 2

Solve each problem. Show your thinking using words, numbers, or labeled sketches.

1 Usain Bolt won three gold medals in the Track and Field events in the 2012 Olympics in London. His times are posted below.

Race	Time in Seconds
Men's 100 meter	9.63
Men's 200 meter	19.32
Men's 4 × 100 meter relay	36.84

a Usain ran the 200-meter race in 19.32 seconds. If he ran 100 meters at that speed, what would his 100 meter time be?

b In the 4 × 100-meter relay, four runners each run a 100-meter leg. The Jamaican team ran the relay with a time of 36.84. If all four legs took the same amount of time to run, how long would one leg have taken?

c In practice, the first leg of a relay takes longer to run than the others because the first runner must start the race from a still position. If the first leg of the Jamaican team's relay took 9.72 seconds of the total time, but the other 3 legs were all equal, what was the time for one of the later legs?

Olympic Track Star page 2 of 2

2 Divide each number. Show your work.

9.6 ÷ 10 =	9.6 ÷ 100 =
16.08 ÷ 10 =	16.08 ÷ 20 =
132.22 ÷ 10 =	132.22 ÷ 100 =
78.2 ÷ 10 =	78.2 ÷ 20 =

3 Compare what happens to the quotient when you divide by 10 and by 100.

4 Compare what happens to the quotient when you divide by 10 and by 20.

5 Kary and Val were solving the following problem: $12.55 ÷ 5. Kary wrote $25.10 as her answer. Val wrote $2.51. Who is right? How do you know?

Looking for Solar Energy in Our Neighborhood page 1 of 2

Note to Families

We are beginning a unit of study about solar energy. Please take some time to locate examples of solar energy devices. Some examples include solar yard lights, solar-powered mobile device power sources, swimming pool covers, greenhouses, and certain streetlights and traffic signals. You might find them in your neighborhood, or you can take a drive around your town or city. If you are unable to find local examples of solar use, you can look in books, in magazines, or on the Internet. Take time to talk about each type of device, its purpose, and any special features the device might have.

1 Look around your neighborhood for solar energy devices. Examples might include solar water heaters, photovoltaic panels, photovoltaic signs and lights, and swimming pools with solar covers.

a For each solar device, record the type, location, and special features on the chart. Photograph or sketch devices you find in the world. Clip or print out pictures of devices you find in magazines, books, or on the Internet.

Solar Energy in My Neighborhood		
Type	**Location**	**Special Features**

NAME |DATE

Looking for Solar Energy in Our Neighborhood page 2 of 2

2   Sketch or glue pictures of the devices on your chart in the space below.

3   If you can't find evidence of solar use in your neighborhood, list several places a solar energy device could be helpful.

4   CHALLENGE Interview someone who uses solar energy, and find out about the benefits and challenges of using it.

NAME | DATE

🏠 Solar Reflection & Absorption Hunt page 1 of 2

1 On a sunny day, go outside and find the following items. Sketch and describe each item you find.

a A surface that reflects solar energy.

b Two objects that absorb solar energy.

c An item that stays cool even when it is sunny out.

d Something that casts a shadow from the sun.

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Solar Reflection & Absorption Hunt page 2 of 2

2 What temperature do you think it is outside in degrees Fahrenheit? Record your estimate and explain your thinking.

3 Use the formula below to find your estimated temperature in degrees Celsius.

$$C = (F - 32) \times \tfrac{5}{9}$$

4 At what time of day do you think it gets the hottest? Explain your reasoning.

5 Draw a diagram showing where the sun is in the sky in the morning, at noon, and in the afternoon. Label your diagram.

NAME _____ | DATE _____

🏠 Volume of Boxes page 1 of 2

Mr. Ivy's class is conducting a solar collection experiment and wants to make boxes that have a volume of 32 cubic inches.

1 List all the sets of dimensions (length, width, and height) a box with a volume of 32 cubic inches could have.

ex $1'' \times 1'' \times 32'' = 32$ cubic inches

2 The class needs patterns to help them make the boxes. Choose one of the boxes you listed above. Sketch and label a model that would help someone know how to measure and cut a piece of tagboard that could be folded and taped to make a box (without a lid) with the dimensions you chose. You can include directions for making the box if you like.

Note: Your sketch will be smaller than the actual measurements. For example, here is a sketch that would help someone know how to measure and cut a piece of tagboard that could be folded and taped to make a 3″ × 3″ × 1″ box.
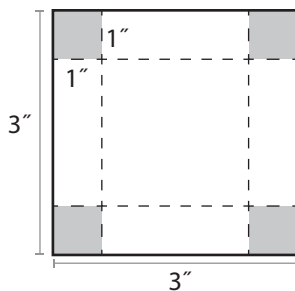
Start with a square of tagboard 5″ on each side. Cut a 1″ × 1″ square out of each corner. Fold along the dotted lines and tape the corners to make a box with a base of 3″ × 3″ and a height of 1″.

(continued on next page)

NAME | DATE

Volume of Boxes page 2 of 2

Here is what the $3'' \times 3'' \times 1''$ box from the example sketch looks like after it is built.
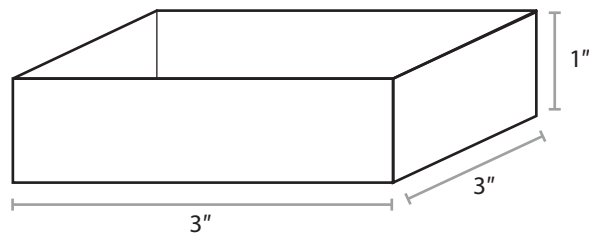
3 Now draw and label a picture to show what the box you chose will look like after it is built.

4 Which of the sides of this box you just sketched will collect the most solar energy when the box is set out in the sun? Explain your reasoning.

NAME | DATE

Volume of Earth Materials page 1 of 2

The students in Mr. Ivy's class decided to use boxes to test how earth materials collect and store solar energy.

1 A box in the classroom had a volume of 99 cubic inches. What were its dimensions, if no side had a length of 1 inch? Show your work using words, numbers, or labeled sketches.

2 Students in the class made several different boxes to help them decide which size to use. The dimensions of their boxes are listed. Find the volume of each.

Note Remember to label each answer with the correct units, cubic inches or in^3.

a $7'' \times 12'' \times 9''$	**b** $7'' \times 12'' \times 4''$
c $5'' \times 10'' \times 8''$	**d** $1'' \times 6'' \times 3''$

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Volume of Earth Materials page 2 of 2

3 The class decided to use $7'' \times 12'' \times 4''$ boxes. They put rocks in 9 boxes. How many cubic inches of rocks did they need to fill the 9 boxes? Show your work.

4 After the students filled every box with an earth material, they placed each box in the sun so that the greatest possible surface area was exposed. What is the surface area of one of the box's earth material that is exposed to the sun?

5 **CHALLENGE** When they were preparing their experiment, one of the groups realized their box full of rocks was actually $7'' \times 11'' \times 4''$, and another group discovered theirs was $8'' \times 12'' \times 4''$. How many cubic inches of rocks had the class actually used to fill all 9 boxes? Show your work.

NAME | DATE

Windows on a House page 1 of 2

1 Amber, a student in Mr. Ivy's class, went home and made a model house with dimensions 11.5″ wide by 10″ long by 8″ tall. What is the volume of Amber's model house? Show your work.

2 What is the surface area of one of the 11.5″ × 8″ walls? Show your work.

3 Amber decided to cut a window that took up $\frac{1}{8}$ of the surface area of one of the 10″ × 8″ walls. How many square inches of the wall were left? Show your work. Hint: Make a labeled sketch to help solve this problem.

(continued on next page)

NAME | **DATE**

Windows on a House page 2 of 2

4 Jeremy also made a model house over the weekend. Its dimensions were 25″ wide by 22″ long by 12″ tall. Jeremy used his brother's new roll of blue duct tape to tape along all of the edges of the house. His brother complained that Jeremy used most of his 20–foot roll of tape. Did Jeremy really use most of his brother's tape? Explain your reasoning.

5 Jeremy's brother paid $19.17 for three rolls of colored duct tape at the hardware store. How much did he pay per roll? Show your work.

Buying Materials page 1 of 2

Note to Families

In class, students have been making and insulating model houses. They can choose among several materials for their house's insulation: newspaper, felt, or fabric for walls and floors; weatherstripping, masking tape, or caulking for corners and edges; and storm windows or fabric curtains for windows. If your student isn't sure what materials to choose, suggest these possibilities.

Mr. Ivy's class made model houses with the dimensions of 11″ wide by 10″ long by 8″ tall. Each house has 56 square inches of windows. Alex's team needs to buy some insulation materials for their house. They can spend $4.50 on materials. The costs are listed in the table below.

Insulation Material	Cost
weatherstripping (electrician's tape)	$\frac{1}{2}$ yard @ $0.25
storm windows (transparency film)	8.5″ × 11″ @ $0.50 each
newspaper	1 sheet @ $0.20
felt	8.5″ × 5.5″ @ $0.35 each
polyester-blend fabric	$0.40 per 42 square inches
masking tape	1 roll @ $0.40
caulking (tacky glue)	1 bottle @ $0.50

Help Alex and his team decide how to spend their $4.50 to insulate their house.

1 Use the space below to make sketches and calculate the cost of different materials.

(continued on next page)

NAME | DATE

Buying Materials page 2 of 2

2 Fill in the Insultation Cost Sheet below to show what you think Alex's team should buy. List each item and its cost per unit, the amount needed, and the total cost for that material. When you have listed all the materials, find the total cost, and make sure that you haven't gone over $4.50.

Insulation Cost Sheet

Insulation Material	Cost per Unit (piece, sheet, etc.)	Amount Needed	Total Cost
		Total Cost of All Materials	

3 Explain the reasoning behind your selection of materials. Why did you choose these particular materials?

NAME _____ | DATE _____

Energy in Our Homes page 1 of 2

Look around your home, and answer as many of the following questions as you can:

1 If you have an attic, ask an adult at home how much insulation it has.

○ 6 inches or less   ○ 7–11 inches   ○ 12 inches or more

2 How many layers of glass do your windows have?

○ Single pane with no storm windows

○ Single pane with storm windows or double pane

○ Double pane with reflective coating or gas-filled

3 Hold your hands up near where the window meets the ledge and the edge. Do you feel a draft?

○ Yes   ○ No

4 Hold your hand up against the window. Does it feel cold (in the winter) or hot (in the summer)?

○ Yes   ○ No

5 Open your front door and check the condition of the weatherstripping between the door and the door frame.

○ None   ○ Worn out   ○ Good condition

6 Do you use awnings or shades to cover your windows in the summer?

○ Yes   ○ No

7 Are there deciduous trees on the south-facing side of your home?

○ Yes   ○ No

8 Count the number of compact fluorescent light bulbs (CFLs) you have in your home.

○ 0 CFL bulbs   ○ 1–4 CFL bulbs   ○ 5 or more CFLs

NAME | DATE

Energy in Our Homes page 2 of 2

9 How often do you turn lights off when you leave a room?

○ Almost never   ○ Sometimes   ○ Always

10 At what temperature do you set your thermostat when you are home and awake?

In heating seasons (winter):   In cooling seasons (summer):
    ○ 73° or more   ○ 74° or less
    ○ 70°–72°   ○ 75°–77°
    ○ 69° or less   ○ 78° or more

11 Ask an adult at home how often your furnace filters were cleaned or changed in the last year.

○ Not at all   ○ 1–3 times   ○ 4 or more

12 At what water temperature do you wash your clothes?

○ Mostly hot water   ○ Mostly warm water   ○ Mostly cold water

13 How much time do you spend in the shower?

○ 15 minutes or more   ○ 10 minutes   ○ 5 minutes

14 What other things do you notice about how you use energy in your home?

15 Consider the information you have gathered. Write a note to your parents explaining in what ways your home is energy efficient and what could be done to improve its efficiency.

adapted from Energy Scavenger Hunt. energyhog.org

NAME _____ **| DATE** _____

🏠 **Drawing a House to Scale** page 1 of 2

1 One team in Ms. Vega's class made a model house with dimensions 7″ wide by 10″ long by 8″ tall. They need to cut out windows that take up $\frac{1}{8}$ of the surface area of the four walls.

    a How much area do they have for windows? Show your work.

    b Decide on the size and placement of the windows on the four walls. Make a quick sketch of each wall with windows.
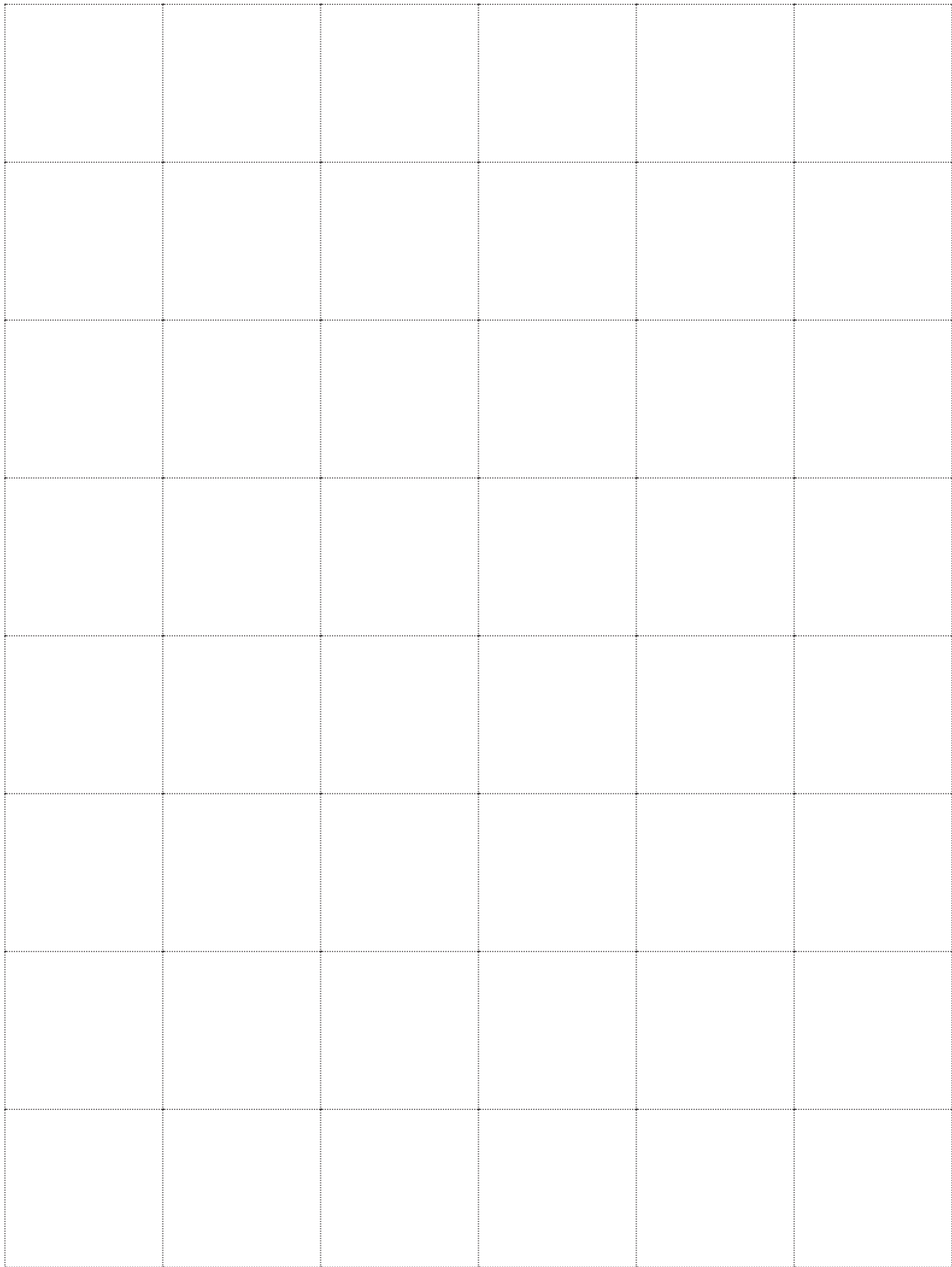
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NAME | **DATE**

Drawing a House to Scale page 2 of 2

2 Draw side views of the 4 walls and a bird's-eye view roof for this team of students, using a scale factor of $\frac{1}{3}$.

NAME | DATE

Designing a Solar House page 1 of 2

1   Design and sketch several views of a solar house. Include and label at least three solar energy features. The features can be active or passive. On the next page, describe how you incorporated the solar energy features into your design.

NAME | DATE

Designing a Solar House page 2 of 2

2   Describe how you incorporated solar energy features into your house design.

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Design Their House page 1 of 2

1 A team in Mr. Ivy's class made a model house with dimensions 15" wide by 18" long by 4" tall. What is the total volume of their house? Show your work.

2 Design a floor plan for the team that includes at least 4 rooms, and sketch it below. Label the dimensions of each room, and label your sketch with the scale factor you used.

(continued on next page)

Design Their House page 2 of 2

3 If the dimensions of the entire floor of the model house are $15'' \times 18''$, what is the area of the floor in each room? Show your work.

4 Find the volume of each room in the house. Then show that the volume of all the rooms added together equals the total volume of the house. Remember that the model house is 4" tall. Show your work.

5 **CHALLENGE** What is the volume of each room in the actual house if the scale is 25:1? Show your work.