

Name _____

Add Dollars and Cents

Essential Question How can you find sums of decimal amounts in dollars and cents?

Unlock the Problem

Carlos bought a new skateboard for \$99.46 and a helmet and pads for \$73.49. How much did Carlos spend in all?

- What operation can you use to find the amount Carlos spent?

You add money amounts in the same way as you add whole numbers. Use the decimal point to line up the digits.

 **Use place value.**

Add. \$99.46 + \$73.49

STEP 1

Add the pennies.
Regroup 15 pennies.

$$\begin{array}{r} 1 \\ \$ 99.46 \\ + \$ 73.49 \\ \hline 5 \end{array}$$

STEP 2

Add the dimes.

$$\begin{array}{r} 1 \\ \$ 99.46 \\ + \$ 73.49 \\ \hline 95 \end{array}$$

STEPS 3 and 4

Add the ones.
Add the tens.

$$\begin{array}{r} 1 \quad 1 \\ \$ 99.46 \\ + \$ 73.49 \\ \hline 172 \quad 95 \end{array}$$

STEP 5

Insert the decimal point and dollar sign.

$$\begin{array}{r} 1 \quad 1 \\ \$ 99.46 \\ + \$ 73.49 \\ \hline \$172.95 \end{array}$$

So, Carlos spent \$172.95.

Try This! Find the sum.

A.

	\$	2	3	.	1	8	
+	\$	5	7	.	4	5	

B.

	\$	1	9	.	0	7	
+	\$	6	5	.	2	8	

Math Talk

Mathematical Practices

Explain how you know when to regroup.

Share and Show



1. Explain what is happening in Step 2.

STEPS 1 and 2

$$\begin{array}{r} 1 \\ \$84.60 \\ + \$35.70 \\ \hline 30 \end{array}$$

STEPS 3 AND 4

$$\begin{array}{r} 11 \\ \$84.60 \\ + \$35.70 \\ \hline 120\ 30 \end{array}$$

STEP 5

$$\begin{array}{r} 11 \\ \$84.60 \\ + \$35.70 \\ \hline \$120\ 30 \end{array}$$

Find the sum.

2.
$$\begin{array}{r} \$3.09 \\ + \$8.92 \\ \hline \end{array}$$

3.
$$\begin{array}{r} \$26.08 \\ + \$41.39 \\ \hline \end{array}$$

4.
$$\begin{array}{r} \$7.27 \\ + \$26.43 \\ \hline \end{array}$$

5.
$$\begin{array}{r} \$30.47 \\ + \$28.56 \\ \hline \end{array}$$

On Your Own

Find the sum.

6.
$$\begin{array}{r} \$9.57 \\ + \$4.09 \\ \hline \end{array}$$

7.
$$\begin{array}{r} \$89.36 \\ + \$3.85 \\ \hline \end{array}$$

8.
$$\begin{array}{r} \$23.75 \\ + \$10.98 \\ \hline \end{array}$$

9.
$$\begin{array}{r} \$8.52 \\ + \$36.07 \\ \hline \end{array}$$

10.
$$\begin{array}{r} \$48.92 \\ + \$7.08 \\ \hline \end{array}$$

11.
$$\begin{array}{r} \$60.45 \\ + \$17.42 \\ \hline \end{array}$$

12.
$$\begin{array}{r} \$58.02 \\ + \$73.54 \\ \hline \end{array}$$

13.
$$\begin{array}{r} \$61.74 \\ + \$60.57 \\ \hline \end{array}$$

Problem Solving



14. Lena bought new inline skates for \$49.99. The sales tax was \$4.13. How much did Lena spend in all for her new inline skates?

Name _____

Subtract Dollars and Cents**Essential Question** How can you find differences between decimal amounts in dollars and cents?**Unlock the Problem****Real World**

Sandi wanted to buy a new coat online. She figured out that the cost of the coat, with shipping, would be \$84.24. The next week, Sandi bought the same coat in a local store on sale for a total of \$52.47. How much did Sandi save by buying the coat on sale?

You subtract money amounts in the same way as you subtract whole numbers.

- Underline the information you need to solve the problem.
 - What operation can you use to find the difference between the two prices?
- _____

**Use place value.**Subtract. $\$84.24 - \52.47

Use the decimal point to line up the digits. Work from right to left. Check each place to see if you need to regroup to subtract.

STEP 1

Regroup 2 dimes and 4 pennies as 1 dime and 14 pennies. Subtract the pennies.

$$\begin{array}{r} 114 \\ \$84.\cancel{24} \\ - \$52.47 \\ \hline 7 \end{array}$$

STEP 2

Regroup 4 dollars and 1 dime as 3 dollars and 11 dimes. Subtract the dimes.

$$\begin{array}{r} 11 \\ 3\cancel{1}14 \\ \$84.\cancel{24} \\ - \$52.47 \\ \hline 77 \end{array}$$

STEPS 3 and 4

Subtract the ones. Subtract the tens.

$$\begin{array}{r} 11 \\ 3\cancel{1}14 \\ \$84.\cancel{24} \\ - \$52.47 \\ \hline 31\ 77 \end{array}$$

STEP 5

Insert the decimal point and dollar sign.

$$\begin{array}{r} 11 \\ 3\cancel{1}14 \\ \$84.\cancel{24} \\ - \$52.47 \\ \hline \$31\ 77 \end{array}$$

So, Sandi saved \$31.77.

Math Talk**Mathematical Practices**

Explain how you know in which places to regroup to subtract.

Share and Show



1. Find the difference. Regroup as needed.

$$\begin{array}{r} \$ 7.14 \\ - \$ 4.38 \\ \hline \end{array}$$

Find the difference.

2.

$$\begin{array}{r} \$ 5.89 \\ - \$ 3.16 \\ \hline \end{array}$$

3.

$$\begin{array}{r} \$ 30.07 \\ - \$ 11.32 \\ \hline \end{array}$$

4.

$$\begin{array}{r} \$ 60.00 \\ - \$ 42.75 \\ \hline \end{array}$$

5.

$$\begin{array}{r} \$ 99.08 \\ - \$ 91.36 \\ \hline \end{array}$$

On Your Own

Find the difference.

6.

$$\begin{array}{r} \$ 9.08 \\ - \$ 7.26 \\ \hline \end{array}$$

7.

$$\begin{array}{r} \$ 73.45 \\ - \$ 12.13 \\ \hline \end{array}$$

8.

$$\begin{array}{r} \$ 90.00 \\ - \$ 42.17 \\ \hline \end{array}$$

9.

$$\begin{array}{r} \$ 80.03 \\ - \$ 49.53 \\ \hline \end{array}$$

10.

$$\begin{array}{r} \$ 15.36 \\ - \$ 2.73 \\ \hline \end{array}$$

11.

$$\begin{array}{r} \$ 84.00 \\ - \$ 27.85 \\ \hline \end{array}$$

12.

$$\begin{array}{r} \$ 74.19 \\ - \$ 8.46 \\ \hline \end{array}$$

13.

$$\begin{array}{r} \$ 79.62 \\ - \$ 23.58 \\ \hline \end{array}$$

Problem Solving



14. Bert earned \$78.70 last week. This week he earned \$93.00.
How much more did he earn this week than last week?

Name _____

Order of Operations

Essential Question How can you use the order of operations to find the value of expressions?

Unlock the Problem

At a visit to the Book Fair, Jana buys 7 hardcover books and 5 paperback books. She is going to give an equal number of books to each of her three cousins. How many books will each of Jana's cousins get?

To find the value of an expression involving parentheses, you can use the order of operations. Remember, the order of operations is a special set of rules that give you the order in which calculations are done in an expression.

First, perform operations inside the parentheses.

Then, multiply and divide from left to right.

Finally, add and subtract from left to right.



Use the order of operations to find the value of $(7 + 5) \div 3$.

STEP 1

Perform operations in parentheses.

$$(7 + 5) \div 3$$

$$\underline{\hspace{2cm}} \div 3$$

STEP 2

Use the order of operations. In this case, divide.

$$12 \div 3$$

$$\underline{\hspace{2cm}}$$

So, each of Jana's cousins will get 4 books.

- What operation can you use to find the total number of books that Jana buys?

- What operation can you use to find how many books each of Jana's cousins gets?

- **What if** Jana decides to keep 3 books for herself? How will this change the expression? How many books will each of Jana's cousins get?



Mathematical Practices

What operation should you do first to find the values of $(6 + 2) \times 3$ and $6 + (2 \times 3)$? What is the value of each expression?

Share and Show



Write *correct* if the operations are listed in the correct order.
If not correct, write the correct order of operations.

1. $(4 + 5) \times 2$ multiply, add

2. $8 \div (4 \times 2)$ multiply, divide

3. $12 + (16 \div 4)$ add, divide

4. $9 + 2 \times (3 - 1)$ add, multiply, subtract

Follow the order of operations to find the value of the expression.
Show each step.

5. $6 + (2 \times 5)$

6. $18 - (12 \div 4)$

7. $8 \times (9 - 3)$

8. $(12 + 8) \div 2 \times 3$

On Your Own

Follow the order of operations to find the value of the expression.
Show each step.

9. $6 + (9 \div 3)$

10. $(3 \times 6) \div 2$

11. $(49 \div 7) + 5$

12. $9 \times (8 - 2)$

13. $45 \div (17 - 2)$

14. $(32 + 4) \div 9 - 2$

15. $8 \times 9 - (12 - 8)$

16. $(36 - 4) + 8 \div 4$

Problem Solving



17. Mr. Randall bought 4 shirts, which were on sale. The shirts were originally priced \$20. The sales price of the shirts was \$5 less than the original price. Write and find the value of an expression for the total amount that Mr. Randall paid for the shirts.

Name _____

Divide by Multiples of Ten**Essential Question** How can you use patterns to divide by multiples of ten?**Unlock the Problem****Real World**

A charity asked 10 volunteers to hand out 2,000 flyers about a fund-raising event. Each volunteer will get the same number of flyers. How many flyers will each volunteer hand out?

You can use patterns and a basic fact to divide by multiples of ten.

Example 1 Find $2,000 \div 10$.

Think: I know that $2 \div 1 = 2$, so $20 \div 10 = 2$.

$$\begin{aligned} 20 \div 10 &= 2 \\ 200 \div 10 &= 20 \\ 2,000 \div 10 &= 200 \end{aligned}$$

So, each volunteer will hand out _____ flyers.

Describe the pattern used to divide 2,000 by 10.

Example 2 Find $2,800 \div 40$.

$28 \div 4 = 7$, so $280 \div 40 = \underline{\quad}$.

$$2,800 \div 40 = \underline{\quad}$$

Math Talk**Mathematical Practices**

Explain how you can use basic facts to help divide by multiples of ten.

Share and Show



1. Find $6,000 \div 20$.

Think: I can use patterns to divide, starting with $60 \div 20$.

$$6 \div 2 = \underline{\hspace{2cm}}, \text{ so } 60 \div 20 = \underline{\hspace{2cm}}.$$

$$600 \div 20 = \underline{\hspace{2cm}}$$

$$6,000 \div 20 = \underline{\hspace{2cm}}$$

Divide. Use a pattern to help.

2. $8,000 \div 20 = \underline{\hspace{2cm}}$

3. $4,000 \div 40 = \underline{\hspace{2cm}}$

4. $1,200 \div 60 = \underline{\hspace{2cm}}$

On Your Own

Divide. Use a pattern to help.

5. $9,000 \div 30 = \underline{\hspace{2cm}}$

6. $5,000 \div 50 = \underline{\hspace{2cm}}$

7. $1,800 \div 60 = \underline{\hspace{2cm}}$

8. $7,000 \div 10 = \underline{\hspace{2cm}}$

9. $3,200 \div 80 = \underline{\hspace{2cm}}$

10. $6,300 \div 90 = \underline{\hspace{2cm}}$

Problem Solving



11. A group of musicians wants to sell a total of 1,000 tickets for 20 concerts. Suppose they sell the same number of tickets for each concert. How many tickets will they sell for each concert? Explain how you solved the problem.

Name _____

Model Division with 2-Digit Divisors

Essential Question How can you use models to divide?

CONNECT You have used base-ten blocks to divide whole numbers by 1-digit divisors. You can follow the same steps to divide whole numbers by 2-digit divisors.

Unlock the Problem

Activity Materials ■ base-ten blocks

There are 154 children participating in a soccer tournament. There are 11 equal-sized teams of children. How many children are on each team?

- What do you need to find?

- What is the dividend? the divisor?

STEP 1

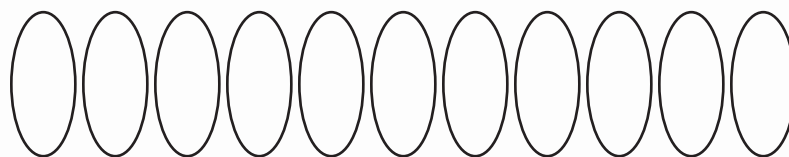
Use base-ten blocks to model 154 children. Show 154 as 1 hundred 5 tens 4 ones. Draw 11 ovals for the teams.

STEP 2

Share the base-ten blocks equally among 11 groups. Since there are not enough hundreds to share equally, regroup 1 hundred as 10 tens. There are now 15 tens. Share the tens and draw a vertical line segment for each ten.

STEP 3

If there are any tens left over, regroup each as 10 ones. Share the ones equally among 11 groups. Draw a small circle for each one.



There are _____ ten(s) and _____ one(s) in each group.

So, there are _____ children on each team.

- Explain why you need to regroup in Step 3.

Math Talk

Mathematical Practices

Explain how you can check your answer.

Share and Show



1. Use base-ten blocks to find $182 \div 14$. Describe the steps you took to find your answer.

Use base-ten blocks to divide.

2. $60 \div 12 = \underline{\quad}$

3. $135 \div 15 = \underline{\quad}$

On Your Own

Use base-ten blocks to divide.

4. $180 \div 10 = \underline{\quad}$

5. $150 \div 15 = \underline{\quad}$

6. $88 \div 11 = \underline{\quad}$

7. $96 \div 16 = \underline{\quad}$

8. $176 \div 11 = \underline{\quad}$

9. $156 \div 13 = \underline{\quad}$

Problem Solving



10. Nicole has \$250 in ten-dollar bills. How many ten-dollar bills does Nicole have?

11. At Dante's party, 16 children share 192 crayons. At Maria's party, 13 children share 234 crayons. Each party splits the crayons up equally among the children attending. How many more crayons does each child at Maria's party get than each child at Dante's party? Explain.

Name _____

Checkpoint

Concepts and Skills

Find the sum or difference.

1.
$$\begin{array}{r} \$2.87 \\ + \$8.09 \\ \hline \end{array}$$

2.
$$\begin{array}{r} \$7.65 \\ - \$5.23 \\ \hline \end{array}$$

3.
$$\begin{array}{r} \$37.05 \\ + \$14.95 \\ \hline \end{array}$$

4.
$$\begin{array}{r} \$30.00 \\ - \$12.69 \\ \hline \end{array}$$

Use base-ten blocks to divide.

5. $143 \div 11$

6. $224 \div 16$

7. $108 \div 18$

Follow the order of operations to find the value of the expression. Show each step.

8. $(8 \times 2) + 4$

9. $16 - (3 \times 5)$

10. $24 \div (15 - 7)$

11. $15 \div (9 - 4) \times 4$

Divide. Use a pattern to help.

12. $6,000 \div 30$

13. $2,000 \div 20$

14. $3,200 \div 40$

15. $8,100 \div 90$

Problem Solving



16. Ellis bought groceries that were worth \$99.86. After using coupons, the bill was \$84.92. How much did Ellis save by using coupons?
- _____

Fill in the bubble completely to show your answer.

17. Taby buys a dog leash for \$18.50 and a dog collar for \$12.75. What is the total cost of the leash and the collar?
- (A) \$5.75
- (B) \$6.25
- (C) \$30.25
- (D) \$31.25
18. Mr. Martin pays \$35.93 for shoes for himself and \$18.67 for shoes for his son. How much more do Mr. Martin's shoes cost than his son's?
- (A) \$17.26
- (B) \$17.36
- (C) \$23.24
- (D) \$54.60
19. Chris and Susan each collect baseball cards. Chris has 75 cards and Susan has 93 cards. They want to combine their collections and divide the cards evenly between them. Which expression can they use to find the number of cards each of them should have?
- (A) $75 + 93 \div 2$
- (B) $75 + (93 \div 2)$
- (C) $(75 + 93) \times 2$
- (D) $(75 + 93) \div 2$
20. A store expects 4,000 customers during its 20-hour sale. Suppose the same number of customers arrives each hour. How many customers come each hour?
- (A) 20
- (B) 200
- (C) 2,000
- (D) 8,000

Name _____

Place Value Through Millions**Essential Question** How can you read, write, and represent whole numbers through millions?**Unlock the Problem****Real World**

The population of Idaho is about 1,550,000.

Write 1,550,000 in standard form, word form, and expanded form.

You know how to read and write numbers through hundred thousands. The place-value chart can be expanded to help you read and write greater numbers, like 1,550,000.

One million is 1,000 thousands and is written as 1,000,000. The millions period is to the left of the thousands period on a place-value chart.

PERIODS								
MILLIONS			THOUSANDS			ONES		
Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		1,	5	5	0,	0	0	0
		$1 \times 1,000,000$	$5 \times 100,000$	$5 \times 10,000$	$0 \times 1,000$	0×100	0×10	0×1
		1,000,000	500,000	50,000	0	0	0	0

The place value of the 1 in 1,550,000 is millions.

Standard form: 1,550,000

Word Form: One million, five hundred fifty thousand

Expanded Form: $1,000,000 + 500,000 + 50,000$

Math Talk**Mathematical Practices**

Explain how 8,000,000 is different than 800,000.

Try This! Use place value to read and write the number.

Standard Form: _____

Word Form: Sixty-two million, eighty thousand, one hundred twenty-six

Expanded Form: $60,000,000 +$ _____ $+$

$80,000 +$ _____ $+ 20 + 6$

Share and Show



1. Write the number 3,298,076 in word form and expanded form.

Word Form: _____

Expanded Form: _____

Read and write the number in two other forms.

2. fifty million, three thousand, eighty-seven

3. $60,000,000 + 400,000 + 200 + 30 + 9$

On Your Own

Read and write the number in two other forms.

4. $70,000,000 + 8,000,000 + 20,000 + 8$

5. twenty million, eleven thousand, twelve

Write the value of the underlined digit.

6. 3,356,000

7. 45,687,909

8. 70,000,044

9. 30,051,218

Problem Solving



10. According to one organization, there are about 93,600,000 pet cats and about 77,500,000 pet dogs in the U.S. Are there more pet cats or pet dogs? **Explain** how you know.

Name _____

Decimals and Place Value

Essential Question How can you use place value to read, write, and represent decimals?

CONNECT Decimals, like whole numbers, can be written in standard form, word form, and expanded form.

Unlock the Problem

One of the world's tiniest frogs lives in Asia. Adult males range in length from about 1.06 to 1.28 centimeters, about the size of a pea.

You can use a place-value chart to help you understand decimals. Whole numbers are to the left of the decimal point in the place-value chart, and decimal amounts are to the right of the decimal point. The value of each place is one-tenth of the place to its left.

 **Use a place-value chart.**

Write each of the decimals on a place-value chart. Be sure to line up each place and the decimal point.

Ones		Tenths	Hundredths
1	.	0	6
1	.	2	8

The place-value position of the digit 8 in 1.28 is hundredths. The value of the digit 8 in 1.28 is 8 hundredths, or $8 \times \frac{1}{100}$ or 0.08.

You can also write 1.28 in word form and expanded form.

Word form: one and twenty-eight hundredths

Expanded form: $1 + 0.2 + 0.08$

- What decimals do you see in the problem?

- The numbers 1.06 and 1.28 are between which two whole numbers?

Math Talk

Mathematical Practices

Explain why 1.28 is not one and twenty-eight tenths in word form.

Try This! Use place value to read and write the decimal.

Standard Form: _____

Word Form: three and forty-six hundredths

Expanded Form: $3 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$

Share and Show



1. Write the decimal 4.06 in word form and expanded form.

Word Form: _____

Expanded Form: _____

Read and write the decimal in two other forms.

2. five and two tenths

3. $6 + 0.8 + 0.09$

On Your Own

Read and write the decimal in two other forms.

4. seven and three hundredths:

5. $2 + 0.3 + 0.01$

Write the value of the underlined digit.

6. 4.56

7. 5.09

8. 7.4

9. 1.32

Problem Solving



10. James is 1.63 meters tall. Write James's height in word form.

Explain how you found your answer.

11. Ani was told to write the number four and eight hundredths. She wrote 4.8. **Explain** whether or not you think Ani is correct. If you think she is not correct, write the number correctly.

Name _____

Round Decimals

Essential Question How can you round decimal amounts, including amounts of money, to the nearest whole number or dollar?



Ami sells fruits and nuts at an outdoor market. She sold a bag of nuts that weighed 1.35 pounds. About how much did the bag of nuts weigh, rounded to the nearest whole number?

- Underline the information that you need to find.

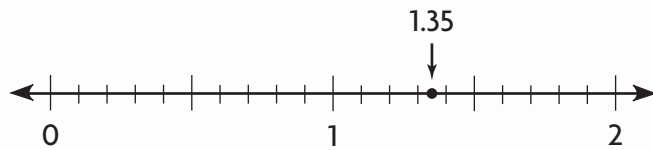
You know that you can use a number line or place value to round whole numbers. You can use the same strategies to round decimals.

Use a number line.

To round a decimal to the nearest whole number, find the whole numbers it is between.

___ < 1.35 < ___

Use a number line to see which whole number 1.35 is closer to.



1.35 is closer to ___ than ___.

So, the bag of nuts weighed about ___ pound.

**Math
Talk**

Mathematical Practices

Explain how rounding decimals is like rounding whole numbers.

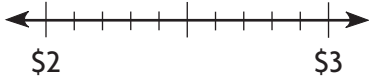
1. **What if** Ami sold a bag of nuts that weighed 2.82 pounds? About how much does the bag weigh, rounded to the nearest whole number?

2. **Describe** how you would round \$3.90 to the nearest whole dollar.

Share and Show



1. Round \$2.67 to the nearest dollar. Locate and mark \$2.67 on the number line. Which whole dollar is it closest to? _____



Round to the nearest dollar or to the nearest whole number.

2. \$0.78

3. 2.1

4. 3.5

5. \$4.50

On Your Own

Round to the nearest dollar or to the nearest whole number.

6. \$1.70

7. 2.2

8. \$3.99

9. 3.45

10. \$1.53

11. 0.9

12. \$0.19

13. 4.38

Problem Solving



14. Candice spent \$13.55 at the arts and crafts fair. How much money did Candice spend, rounded to the nearest dollar?

15. Mr. Marsh bought 2.25 pounds of American cheese. About how many pounds of cheese did Mr. Marsh buy?

Name _____

Place Value to Compare Decimals**Essential Question** How can you use place value to compare decimals?**Unlock the Problem****Real World**

Hummingbirds are small, fast, light birds that feed on flowers, trees, and insects. Suppose a particular hummingbird weighs 0.16 ounces. A nickel weighs about 0.18 ounces. Does the hummingbird weigh more or less than a nickel?

- What do you need to do to solve the problem?

- Circle the numbers you need to compare.

**Use a place-value chart.**

Write each of the decimals on a place-value chart. Be sure to line up each place and the decimal point. Then compare the numbers in each place.

Ones		Tenths	Hundredths
0	.	1	6
0	.	1	8

0 = 0 1 = _____ 6 < _____

Since 6 8, 0.16 0.18.

So, the hummingbird weighs _____ a nickel.

Math Talk**Mathematical Practices**

Explain why you start comparing the decimals by comparing the ones place.

Try This! Use a place-value chart to compare the decimals.Write $<$, $>$, or $=$.

A. 1.32 1.34

B. 0.67 0.6

C. 0.99 0.99

Share and Show



1. Use the place-value chart below to compare the decimals.

Write $<$, $>$, or $=$.

Ones		Tenths	Hundredths
3	.	0	5
3	.	0	1

$$3 = 3 \quad 0 = \underline{\quad\quad} \quad 5 \bigcirc 1$$

So, 3.05 \bigcirc 3.01.

Compare the decimals. Write $<$, $>$, $=$.

2. 7.24 \bigcirc 7.42 | 3. 8.80 \bigcirc 8.81 | 4. 0.11 \bigcirc 0.11 | 5. 4.33 \bigcirc 4.31

On Your Own

Compare the decimals. Write $<$, $>$, $=$.

6. 0.04 \bigcirc 0.04 | 7. 1.1 \bigcirc 1.7 | 8. 0.34 \bigcirc 0.36 | 9. 4.04 \bigcirc 4.01

10. 9.67 \bigcirc 9.63 | 11. 1.4 \bigcirc 1.42 | 12. 0.02 \bigcirc 0.2 | 13. 5.4 \bigcirc 5.40

Use a place-value chart to order the decimals from least to greatest.

14. 0.59, 0.51, 0.52 | 15. 7.15, 7.18, 7.1 | 16. 1.3, 1.33, 1.03

Problem Solving



17. Jill, Ally, and Maria ran the 50-yard dash. Jill ran the race in 6.87 seconds. Ally ran the race in 6.82 seconds. Maria ran the race in 6.93. Who ran the race the fastest? **Explain** how you can use a place-value chart to find the answer.

Name _____

Decompose Multiples of 10, 100, 1,000**Essential Question** How can you find factors of multiples of 10, 100, and 1,000?

Architects make scale models of buildings before they build the real thing. The height of an actual building is going to be 1,200 feet. The scale model is 12 feet tall. How many times the height of the model is the height of the actual building?

You can decompose a multiple of 10, 100, or 1,000 by finding factors.

One Way Use mental math and a pattern.
Decompose 1,200.

$$1,200 = \underline{\hspace{2cm}} \times 1$$

$$1,200 = \underline{\hspace{2cm}} \times 10$$

$$1,200 = \underline{\hspace{2cm}} \times 100$$

So, the building is 100 times the height of the model.

Another Way Use place value.
Decompose 1,200.

$$1,200 = 12 \text{ hundreds} = 12 \times \underline{\hspace{2cm}}$$

$$\text{So, } 1,200 = 12 \times 100.$$

- What do you need to find?

- Circle the numbers you need to use to solve the problem.



Remember
A multiple of 10, 100, or 1,000 is a number that has a factor of 10, 100, or 1,000.

Math Talk

Mathematical Practices

Explain the difference between factors and multiples.

- Explain how you use mental math and a pattern to find factors of multiples of 10, 100, or 1,000.

Share and Show



1. Complete the exercise below to decompose 2,800.

$$2,800 = \underline{\hspace{2cm}} \times 1$$

$$2,800 = \underline{\hspace{2cm}} \times 10$$

$$2,800 = \underline{\hspace{2cm}} \times 100$$

2. Complete the exercise below to decompose 930.

$$930 = \underline{\hspace{2cm}} \text{ tens} = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}}$$

Decompose each number.

3. $80 = \underline{\hspace{2cm}}$

4. $320 = \underline{\hspace{2cm}}$

5. $8,000 = \underline{\hspace{2cm}}$

On Your Own

Decompose each number.

6. $90 = \underline{\hspace{2cm}}$

7. $40 = \underline{\hspace{2cm}}$

8. $890 = \underline{\hspace{2cm}}$

9. $300 = \underline{\hspace{2cm}}$

10. $7,000 = \underline{\hspace{2cm}}$

11. $3,700 = \underline{\hspace{2cm}}$

Correct the error. Write the correct decomposition.

12. $560 = 56 \times 100$

$\underline{\hspace{2cm}}$

13. $4,300 = 43 \times 1,000$

$\underline{\hspace{2cm}}$

14. $6,000 = 60 \times 10$

$\underline{\hspace{2cm}}$

Problem Solving



15. Jon goes to the bank with \$990. How many ten-dollar bills can he get?
Show how you found your answer.

Name _____

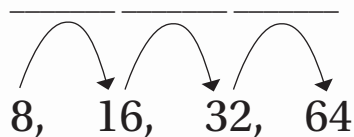
Number Patterns**Essential Question** How can you use multiplication to describe a pattern?**Unlock the Problem****Real World**

You know how to use a rule and a first term to write a sequence. Now, you will describe a sequence using a rule.

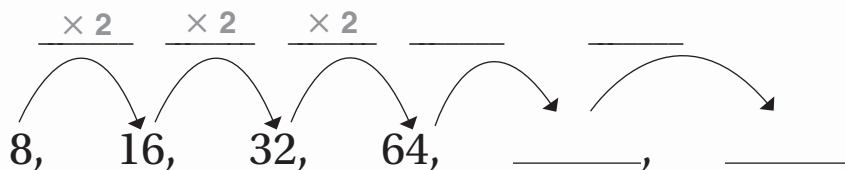
**Describe a pattern.**

A scientist counts the number of lily pads in a pond each day. She records the number of lily pads in the table below. How many lily pads will be in the pond on days 5 and 6?

Day	1	2	3	4
Lilly Pads	8	16	32	64

STEP 1 Describe the sequence.**THINK:** How do I get from one term to the next?Try multiplying by 2 since $8 \times 2 = 16$.

Write a rule to describe the number of lily pads in the pond.

RULE: _____.**STEP 2** Find the next two terms in the sequence.

So, there will be _____ lily pads on day 5 and _____ lily pads on day 6.

- Do the numbers in the sequence increase or decrease?

- Underline the information you need to find.

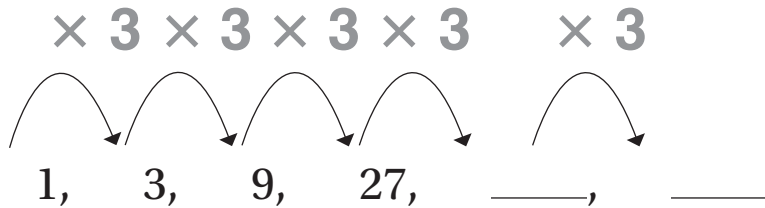
Math Talk**Mathematical Practices**

Explain how you know the rule isn't add 8.

Share and Show



1. Find the next two numbers in the pattern below.



Describe the pattern. Then find the next two numbers in the pattern.

2. 1, 2, 4, 8, _____, _____

3. 7, 14, 28, 56, _____, _____

On Your Own

Describe the pattern. Then find the next two numbers in the pattern.

4. 1, 4, 16, 64, _____, _____

5. 2, 6, 18, 54, _____, _____

Determine the pattern and use it to fill in the blanks.

6. 1, 5, 25, _____, 625

7. 3, 6, _____, 24, _____

8. 2, _____, 32, _____, 512

Problem Solving



9. A clothing store starts selling a new type of sneaker. The table shows the number of pairs of sneakers sold in the first four weeks. If the pattern continues, how many pairs of sneakers will the store sell in weeks 5 and 6? **Explain.**

Week	1	2	3	4
Pairs Sold	5	10	20	40

Name _____

✓ Checkpoint

Concepts and Skills

Round to the nearest whole dollar or to the nearest whole number.

1. \$7.23

2. 2.89

3. 0.52

4. \$9.49

Compare the decimals. Write $<$, $>$, or $=$.

5. $0.6 \bigcirc 0.60$

6. $5.08 \bigcirc 5.80$

7. $8.14 \bigcirc 8.17$

8. $7.37 \bigcirc 7.32$

Read and write the numbers in two other forms.

9. seventy-five million, three hundred thousand, two hundred seven

10. $30,000,000 + 40,000 + 6,000 + 20 + 2$

Decompose each number.

11. $20 =$ _____

12. $740 =$ _____

13. $6,000 =$ _____

Problem Solving

14. A new music website is keeping track of the number of members that join. The table shows the number of members in the first four days. If the pattern continues, how many members will the website have on day 6? **Explain** how you found your answer.

Day	1	2	3	4
Members	5	15	45	135

15. A particular female Asian elephant weighs 4.63 tons. What is this decimal written in word form?
- Ⓐ four and sixty-three tenths
 - Ⓑ four and sixty-three hundredths
 - Ⓒ four hundred and sixty-three
 - Ⓓ four and sixty-three thousandths
16. Joe, Adam, Michael, and Carl all work at an office. Joe earns \$15.53 per hour. Adam earns \$15.59 per hour. Carl earns \$15.95 per hour. Michael earns \$15.91. Who earns the most money per hour?
- Ⓐ Joe
 - Ⓑ Adam
 - Ⓒ Carl
 - Ⓓ Michael
17. Which number is ninety-eight million, forty thousand, six hundred fifty three written in another form?
- Ⓐ 98,040,653
 - Ⓑ 98,400,653
 - Ⓒ 98,046,053
 - Ⓓ 98,40,653
18. Which rule describes the pattern below?
- 3, 12, 48, 192
- Ⓐ Multiply by 2.
 - Ⓑ Multiply by 3.
 - Ⓒ Add 9.
 - Ⓓ Multiply by 4.

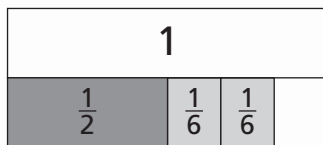
Name _____

Add Related Fractions**Essential Question** How can you add fractions when one denominator is a multiple of the other?

When you add fractions, you find how many equal-size pieces there are in all. The denominator shows the size of the pieces. To add fractions with denominators that are not the same, first find equivalent fractions with the same denominator.

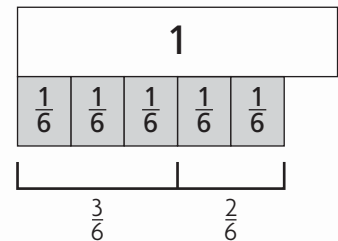
Activity**Materials** ■ fraction stripsFind $\frac{1}{2} + \frac{2}{6}$.**STEP 1** Model the problem.

Think: To add fractions, you need to count equal size pieces. The $\frac{1}{2}$ strip and the $\frac{1}{6}$ strip are different sizes.

**STEP 2** Show $\frac{1}{2}$ using $\frac{1}{6}$ strips.

$$\frac{1}{2} = \frac{\quad}{6}$$

**STEP 3** Add. Use the equivalent fraction you found. Find $\frac{3}{6} + \frac{2}{6}$.How many $\frac{1}{6}$ strips are there?

Write the sum. $\frac{3}{6} + \frac{2}{6} = \underline{\quad}$ So, $\frac{1}{2} + \frac{2}{6} = \underline{\quad}$.

- **Describe** how the sizes of the $\frac{1}{2}$ strip and the $\frac{1}{6}$ strip compare. Then describe how the denominators of the fractions $\frac{1}{2}$ and $\frac{1}{6}$ are related.

**Math
Talk****Mathematical Practices**

Explain how you know $\frac{1}{2}$ and $\frac{3}{6}$ are equivalent fractions.

Share and Show



1. **Explain** which fraction strips you could use to add $\frac{1}{3}$ and $\frac{3}{6}$.

2. Use fraction strips to add $\frac{1}{4} + \frac{2}{8}$.

$$\frac{1}{4} + \frac{2}{8} = \underline{\hspace{2cm}}$$

Add. Use fraction strips to help.

3. $\frac{1}{4} + \frac{1}{2} = \underline{\hspace{2cm}}$

4. $\frac{1}{2} + \frac{3}{8} = \underline{\hspace{2cm}}$

5. $\frac{1}{2} + \frac{3}{10} = \underline{\hspace{2cm}}$

On Your Own

Add. Use fraction strips to help.

6. $\frac{1}{3} + \frac{2}{6} = \underline{\hspace{2cm}}$

7. $\frac{1}{5} + \frac{3}{10} = \underline{\hspace{2cm}}$

8. $\frac{3}{8} + \frac{1}{4} = \underline{\hspace{2cm}}$

9. $\frac{5}{12} + \frac{1}{3} = \underline{\hspace{2cm}}$

10. $\frac{1}{3} + \frac{8}{12} = \underline{\hspace{2cm}}$

11. $\frac{8}{10} + \frac{1}{5} = \underline{\hspace{2cm}}$

Problem Solving



12. Paola used $\frac{1}{4}$ of a carton of eggs today and $\frac{4}{12}$ of the carton yesterday. What fraction of the carton of eggs did she use in all?
Explain how you found your answer.

Name _____

Subtract Related Fractions**Essential Question** How can you subtract fractions when one denominator is a multiple of the other?

When you subtract fractions, you must use equal-size pieces.

To subtract fractions with different denominators, first find equivalent fractions with the same denominator. You can also compare to find the difference.

Activity**Materials** ■ fraction stripsFind $\frac{5}{8} - \frac{1}{4}$.**One Way** Find an equivalent fraction.

Model the problem.

Think: You need to subtract $\frac{1}{4}$ from $\frac{5}{8}$, but the $\frac{1}{4}$ strip and the $\frac{1}{8}$ strips are different sizes.Show $\frac{1}{4}$ using $\frac{1}{8}$ strips.

$$\frac{1}{4} = \frac{\quad}{8}$$

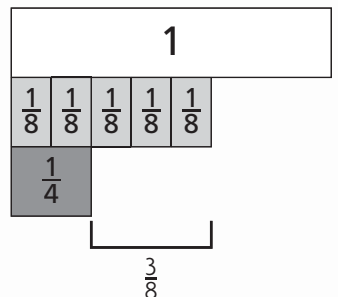
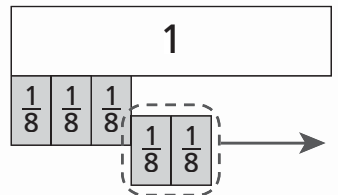
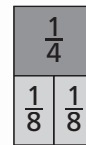
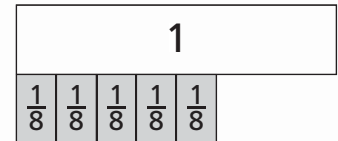
Subtract. Use the equivalent fraction you found.

Find $\frac{5}{8} - \frac{2}{8}$.Write the difference. $\frac{5}{8} - \frac{2}{8} = \underline{\hspace{2cm}}$ So, $\frac{5}{8} - \frac{1}{4} = \underline{\hspace{2cm}}$ **Another Way** Compare to find the difference.

Model the problem.

Think: The $\frac{1}{4}$ strip is the same size as two $\frac{1}{8}$ strips.Compare the $\frac{1}{4}$ strip to the five $\frac{1}{8}$ strips. Find the difference.

$$\frac{5}{8} - \frac{1}{4} = \underline{\hspace{2cm}}$$

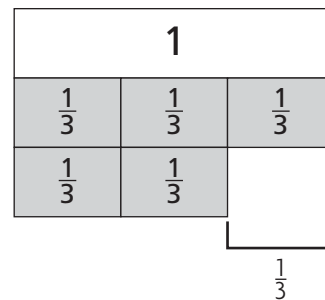
**Math Talk****Mathematical Practices**

Explain how the $\frac{1}{4}$ strip is related to the $\frac{1}{8}$ strip. Then describe how the denominators 4 and 8 are related.

Share and Show



1. A student subtracted $\frac{2}{3}$ from 1 whole as shown at the right. Explain the student's method. Then find the difference.



2. Use fraction strips to subtract $\frac{5}{6} - \frac{1}{2}$.

$$\frac{5}{6} - \frac{1}{2} = \underline{\hspace{2cm}}$$

Subtract. Use fraction strips to help.

3. $\frac{1}{2} - \frac{3}{8} = \underline{\hspace{2cm}}$

4. $1 - \frac{2}{5} = \underline{\hspace{2cm}}$

5. $\frac{2}{4} - \frac{2}{12} = \underline{\hspace{2cm}}$

On Your Own

Subtract. Use fraction strips to help.

6. $\frac{4}{5} - \frac{2}{10} = \underline{\hspace{2cm}}$

7. $\frac{7}{8} - \frac{3}{4} = \underline{\hspace{2cm}}$

8. $\frac{5}{6} - \frac{2}{3} = \underline{\hspace{2cm}}$

9. $\frac{7}{10} - \frac{2}{5} = \underline{\hspace{2cm}}$

10. $\frac{2}{6} - \frac{1}{3} = \underline{\hspace{2cm}}$

11. $\frac{6}{8} - \frac{1}{2} = \underline{\hspace{2cm}}$

Problem Solving

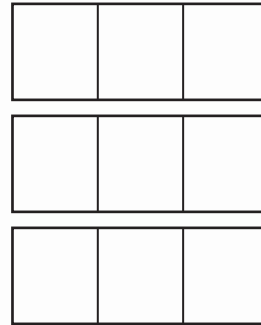


12. Boris had $\frac{2}{3}$ of a book left to read. He read $\frac{1}{6}$ of the book today. What fraction of the book does he have left to read now? Explain how you found your answer.

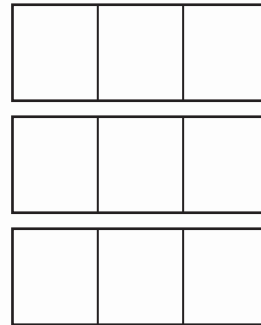
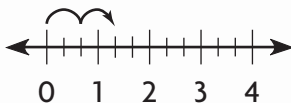
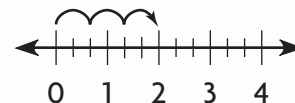
Name _____

Compare Fraction Products**Essential Question** How does the size of the product compare to the size of each factor when multiplying fractions in real-world situations?**Unlock the Problem****Real World****One Way** Use a model.**A.** Serena uses $\frac{2}{3}$ yard of fabric to make a pillow. How much fabric does she need to make 3 pillows?

- Shade the model to show 3 groups of $\frac{2}{3}$.
- Write an expression for three groups of $\frac{2}{3}$: _____ \times _____.
- What can you say about the product when $\frac{2}{3}$ is multiplied by a whole number? Write *greater than* or *less than*.
The product is _____ $\frac{2}{3}$.

**B.** Serena has 3 yards of fabric. She uses $\frac{2}{3}$ of it to make a blanket. How much fabric does she use to make the blanket?

- There are 3 wholes. Each represents one yard.
- Shade $\frac{2}{3}$ of each whole.
- Write an expression for $\frac{2}{3}$ of three wholes: _____ \times _____.
- What can you say about the product when 3 is multiplied by a fraction less than 1? Write *greater than* or *less than*.
The product is _____ 3.

**Another Way** Use a number line.**A.** Show $\frac{2}{3} \times 2$.**B.** Show $\frac{2}{3} \times 3$.**Complete each statement with *greater than* or *less than*.**

- The product of $\frac{2}{3}$ and 2 is _____ $\frac{2}{3}$.
- The product of a whole number greater than 1 and $\frac{2}{3}$ will be _____ the whole number factor.

Math Talk**Mathematical Practices**

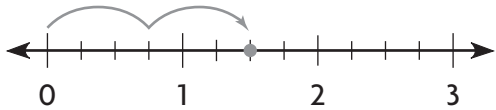
What if a different fraction was multiplied by 2 and 3? Would your statements still be true? **Explain.**

Share and Show



1. Complete the statement with *greater than* or *less than*.

$$2 \times \frac{3}{4} \text{ will be } \underline{\hspace{2cm}} \frac{3}{4}.$$



Complete each statement with *greater than* or *less than*.

2. $3 \times \frac{2}{5}$ will be _____ 3.

3. $3 \times \frac{1}{3}$ will be _____ $\frac{1}{3}$

On Your Own

Complete each statement with *greater than* or *less than*.

4. $3 \times \frac{3}{8}$ will be _____ $\frac{3}{8}$.

5. $\frac{5}{6} \times 5$ will be _____ $\frac{5}{6}$.

6. $\frac{3}{10} \times 6$ will be _____ $\frac{3}{10}$.

7. $4 \times \frac{5}{9}$ will be _____ 4.

Problem Solving



8. Celia wants to sew 4 pillows. She needs $\frac{3}{8}$ yard of fabric for each pillow. Will she need more than $\frac{3}{8}$ yard or less than $\frac{3}{8}$ yard of fabric to make all the pillows? Explain.

9. Rohan walks $\frac{3}{4}$ mile to school each day. After 5 days, will Rohan have walked more than 5 miles or less than 5 miles to school? Explain.

Name _____

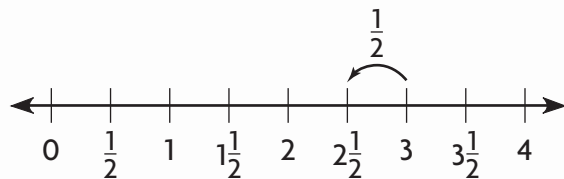
Repeated Subtraction with Fractions**Essential Question** How can you use repeated subtraction to solve problems involving division with fractions?**Unlock the Problem****Real World**

Mr. Jones is making snacks for his family. He has 3 cups of almonds and is dividing them into $\frac{1}{2}$ -cup portions. How many portions can he make?

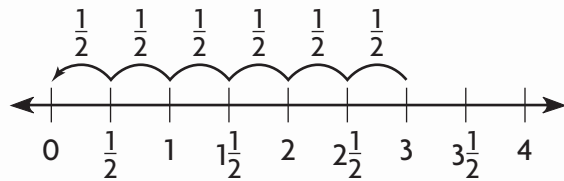
You have used repeated subtraction to divide whole numbers. Now, you will use repeated subtraction to solve a problem involving division by a fraction.

Use repeated subtraction to divide 3 by $\frac{1}{2}$.

STEP 1 Start at 3 and count back $\frac{1}{2}$.



STEP 2 Subtract by $\frac{1}{2}$ until you reach 0 or get as close to it as possible.



STEP 3 Find the number of times you counted back by $\frac{1}{2}$.

You counted _____ groups of $\frac{1}{2}$ to reach 0.

So, Mr. Jones can make _____ half-cup portions of almonds.

- What do you need to find?

- What other operation can you use instead of repeated subtraction to solve the problem?

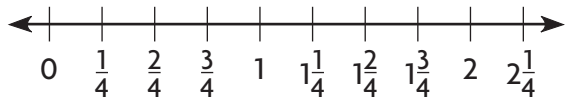
Math Talk**Mathematical Practices**

Explain why you count the number of groups of $\frac{1}{2}$.

Share and Show



1. Use repeated subtraction and the number line to find $2 \div \frac{1}{4}$.



Start subtracting at _____.

Count back by groups of _____.

How many groups did you count to reach 0? _____

Use repeated subtraction to divide.

2. $2 \div \frac{1}{3}$

3. $5 \div \frac{1}{2}$

4. $1 \div \frac{1}{8}$

On Your Own

Use repeated subtraction to divide.

5. $1 \div \frac{1}{5}$

6. $2 \div \frac{1}{2}$

7. $4 \div \frac{1}{3}$

8. $2 \div \frac{1}{5}$

9. $7 \div \frac{1}{2}$

10. $3 \div \frac{1}{4}$

Problem Solving



11. You are putting raisins into snack bags. You have 3 cups of raisins. You want to put $\frac{1}{3}$ cup of raisins in each bag. How many bags can you make?

12. Margaret is cutting straws that are 4 inches long into $\frac{1}{2}$ -inch pieces. She has two straws. She needs twenty $\frac{1}{2}$ -inch pieces. Does she have enough to cut 20 pieces? **Explain.**

Name _____

Fractions and Division**Essential Question** How can you write division problems as fractions?

Division and fractions both show sharing equal numbers of things or making equal-size groups. You can write division problems as fractions.

 **Unlock the Problem** 

Mavi and her 2 sisters want to share 4 small pizzas equally. How much pizza will each person have?

- How many people want to share the pizzas?

Think: What is 4 divided by 3, or $4 \div 3$?



Each pizza is divided into _____ equal slices.

How many slices are in 4 pizzas? _____

What fraction of the pizza is each slice? _____

How many $\frac{1}{3}$ -size slices does each sister get? _____

What fraction of the pizzas does each sister get? _____

So, $4 \div 3$ is the same as $\frac{4}{3}$.

**Math
Talk**
Mathematical Practices

How can you write $\frac{4}{3}$ as a mixed number?

Share and Show



1. Alex baked a pan of corn bread and cut it into 12 equal-size pieces. Alex and his 3 sisters want to share the pieces equally.

What division problem can you write to solve the problem? _____

Write the division problem as a fraction. _____

Write the division problem as a fraction. Write each fraction greater than 1 as a whole number or mixed number.

2. $6 \div 2$

3. $1 \div 4$

4. $1 \div 3$

5. $32 \div 8$

On Your Own

Write the division problem as a fraction. Write each fraction greater than 1 as a whole number or mixed number.

6. $5 \div 6$

7. $3 \div 2$

8. $1 \div 8$

9. $2 \div 4$

10. $12 \div 3$

11. $9 \div 4$

12. $11 \div 2$

13. $8 \div 6$

Problem Solving



14. Stefan and his 2 friends want to share 16 muffins equally. Will each friend get more than or less than 5 whole muffins? **Explain** how you know.

Name _____

Checkpoint

Concepts and Skills

Complete each statement with *greater than* or *less than*.

1. $3 \times \frac{3}{9}$ will be _____ 3.

2. $\frac{7}{8} \times 3$ will be _____ $\frac{7}{8}$.

Add or subtract. Use fraction strips to help.

3. $\frac{1}{2} + \frac{2}{10} =$ _____

4. $\frac{1}{4} + \frac{5}{8} =$ _____

5. $\frac{4}{6} + \frac{1}{3} =$ _____

6. $1 - \frac{5}{6} =$ _____

7. $\frac{7}{8} - \frac{1}{4} =$ _____

8. $\frac{3}{5} - \frac{4}{10} =$ _____

Write the division problem as a fraction. Write each fraction greater than 1 as a whole number or mixed number.

9. $7 \div 8 =$ _____

10. $8 \div 5 =$ _____

11. $16 \div 3 =$ _____

Use repeated subtraction to divide.

12. $3 \div \frac{1}{5} =$ _____

13. $4 \div \frac{1}{2} =$ _____

14. $6 \div \frac{1}{3} =$ _____

Problem Solving

15. Manny had $\frac{3}{4}$ of his paper written. He wrote another $\frac{1}{8}$ of the paper today. What fraction of the paper does he have left to write now?

Explain how you found your answer.

Fill in the bubble completely to show your answer.

16. Mr. Martin is going to paint 5 small rooms. He needs $\frac{3}{4}$ gallon of paint for each room. How much paint will he need to paint all of the rooms?
- (A) less than $\frac{3}{4}$ gallon
- (B) more than $\frac{3}{4}$ gallon
- (C) exactly $\frac{3}{4}$ gallon
- (D) exactly 5 gallons
17. A chef is preparing individual-size pies. She has 4 cups of strawberries to put in the pies. She wants to put $\frac{1}{4}$ cup of strawberries in each pie. How many pies can she make?
- (A) 4
- (B) 8
- (C) 14
- (D) 16
18. Which shows the division problem $6 \div 4$ written as a fraction or mixed number?
- (A) $\frac{4}{6}$
- (B) $1\frac{1}{4}$
- (C) $1\frac{2}{4}$
- (D) $2\frac{2}{4}$
19. Pablo ate $\frac{1}{4}$ of a pizza yesterday and $\frac{3}{8}$ of the pizza today. What fraction of the pizza did he eat in all?
- (A) $\frac{5}{8}$
- (B) $\frac{4}{12}$
- (C) $\frac{4}{8}$
- (D) $\frac{3}{8}$

Name _____

Locate Points on a Grid**Essential Question** How can you use ordered pairs to locate points on a grid?

An ordered pair is a pair of numbers that names a point on a grid.

The first number shows how many units to move horizontally. The second number shows how many units to move vertically.

$(\underset{\uparrow}{2} \quad , \quad \underset{\uparrow}{4})$
 Move 2 units right from 0. Then move 4 units up.

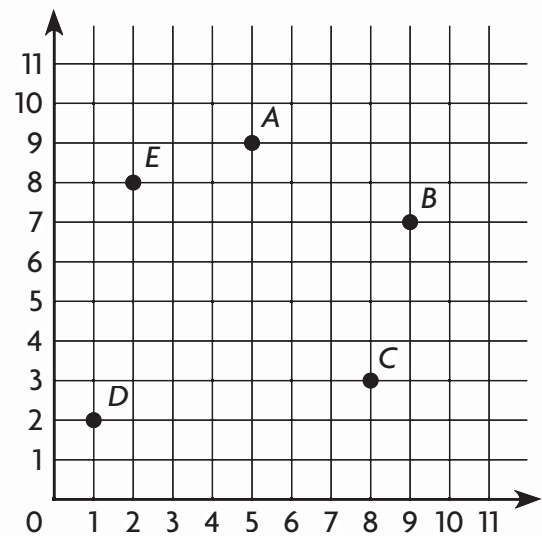
Unlock the Problem

At the airport, passengers travel from one terminal to another in shuttle buses. The shuttle buses travel in a route that begins at Terminal A. Where is Terminal A?

Count units on the grid to find out.

- Start at zero.
- Move right 5 units.
- From there, move up 9 units.

Terminal A is located at $(5, 9)$.

**Try This!**

What terminal is located at $(8, 3)$? Explain how you know.

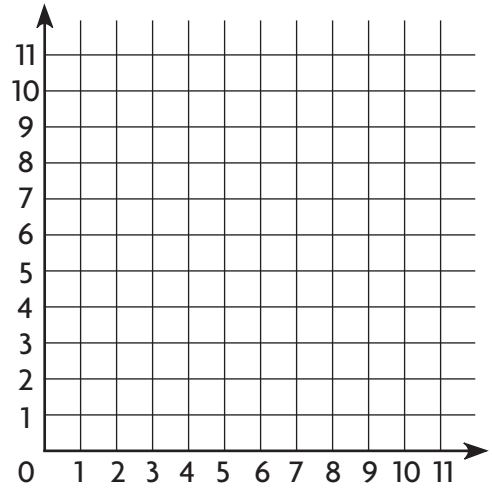
Math Talk**Mathematical Practices**

Explain why $(3, 6)$ and $(6, 3)$ are two different ordered pairs.

Share and Show



1. To graph the point $(6, 3)$, where do you start?
 In which direction and how many units will you move first? What will you do next? Describe the steps and record them on the grid.



Use the grid for Exercises 2–5. Write the ordered pair for each point.

2. <i>A</i>	3. <i>B</i>	4. <i>C</i>	5. <i>D</i>
_____	_____	_____	_____

On Your Own

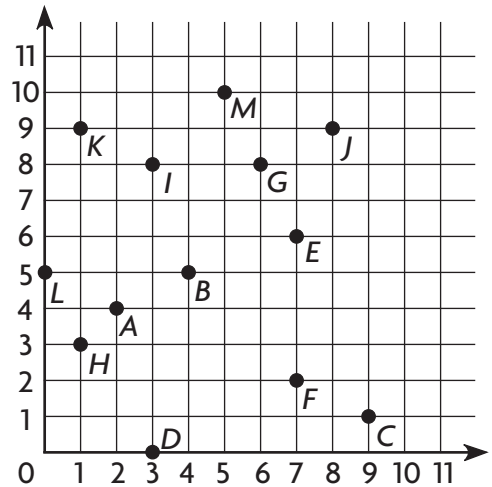
Use the grid for Exercises 6–13.

Write the ordered pair for each point.

6. <i>E</i>	7. <i>F</i>	8. <i>G</i>	9. <i>H</i>
_____	_____	_____	_____

Write the point for each ordered pair.

10. $(3, 8)$	11. $(8, 9)$	12. $(1, 9)$	13. $(0, 5)$
_____	_____	_____	_____



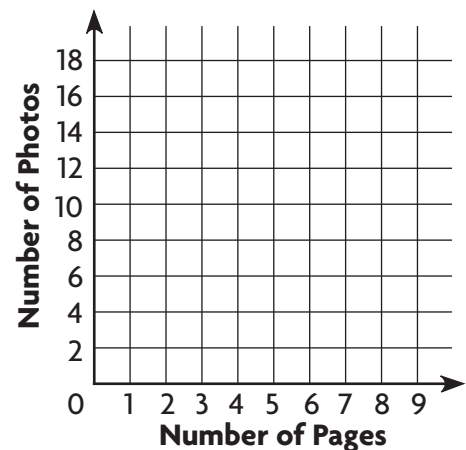
Problem Solving



There are four photos on each page of a photo album. Complete the table. Write the data in the table as ordered pairs. Then graph the ordered pairs on the grid. Use the number of pages as the first number and the number of photos as the second number in the ordered pair.

14.

Number of Pages	1		3	4
Number of Photos	4	8		



Name _____

Area and Tiling**Essential Question** How can you use tiling to find the area of a rectangle?**Unlock the Problem****Real World**

Rhonda is tiling the floor of her new sunroom. The diagram shows the layout of the tiles. Each tile measures 4 square feet. What is the area of Rhonda's sunroom floor?

To find the area of the sunroom floor, you can combine the areas of the half tiles and the whole tiles.

Find the area of the sunroom floor.**STEP 1** Find the area of the half tiles.

Count the number of half tiles. _____

1 tile = 4 square feet, so 1 half tile = $4 \div 2$ or _____ square feet.

Multiply the number of half tiles by _____ square feet to find the area of the half tiles:

_____ \times _____ = _____ square feet

STEP 2 Find the area of the whole tiles.

Find the number of whole tiles: $b \times h =$ _____ \times _____ = _____ tiles

Since the area of 1 tile is _____ square feet, multiply the number of whole tiles by _____ to find the area of the whole tiles.

_____ \times _____ = _____ square feet

STEP 3 Find the total area.

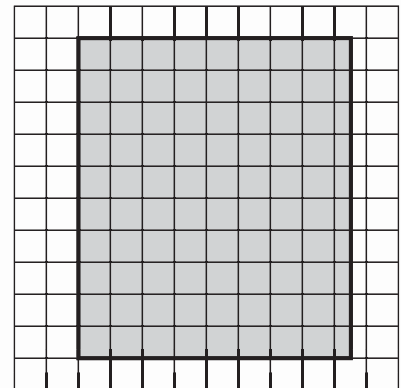
Add the areas of the half tiles and whole tiles.

half tiles **whole tiles**
 \downarrow \downarrow

_____ + _____ = _____ square feet

So, the area of Rhonda's sunroom floor is _____ square feet.

- Underline what you are asked to find.
- Circle the information you will use to solve the problem.

Rhonda's Sunroom Floor

1 tile = 4 square feet

**Remember**

The formula for the area of a rectangle is
 $A = b \times h$ or $l \times w$.

Math Talk**Mathematical Practices**

Explain how to find the area of 6 half tiles if 1 whole tile is 9 square inches.

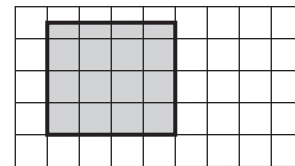
Share and Show



1. Find the area of the shaded shape.

STEP 1 Find the area of the half squares:

$$\underline{\hspace{2cm}} \text{ half squares} \times \underline{\hspace{2cm}} \text{ square yards} = \underline{\hspace{2cm}} \text{ square yards}$$



1 square = 16 square yards

STEP 2 Find the area of the whole squares:

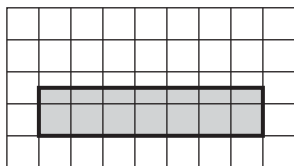
$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}} \text{ squares}$$

$$\underline{\hspace{2cm}} \text{ squares} \times \underline{\hspace{2cm}} \text{ square yards} = \underline{\hspace{2cm}} \text{ square yards}$$

STEP 3 Find the total area: $\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$ square yards

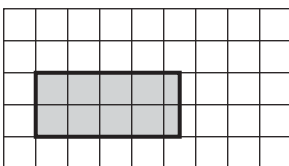
Find the area of each shaded shape. Write the area in square units.

2.



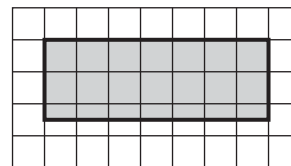
1 square = 4 square yards

3.



1 square = 9 square feet

4.

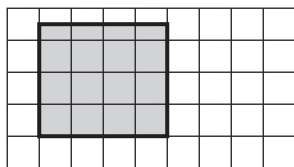


1 square = 4 square meters

On Your Own

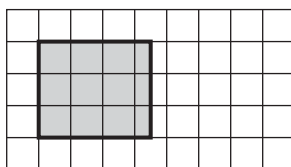
Find the area of each shaded shape. Write the area in square units.

5.



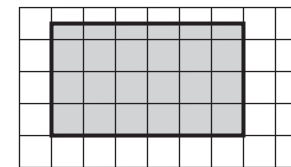
1 square = 9 square miles

6.



1 square = 16 square meters

7.



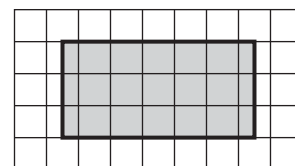
1 square = 25 square meters

Problem Solving



8. A mosaic table top is shown. Each square has an area of 5 square inches. What is the area of the table top? **Explain.**

Table Top



1 square = 5 square inches

Name _____

Multiply Three Factors

Essential Question How can you find the product of three factors?

Unlock the Problem

You can use properties of multiplication to help make multiplication of three factors easier.

Sam ships 4 boxes of car model kits to Toy Mart. Each box contains 16 cartons, with 6 kits in each carton. How many car model kits does Sam ship?

 **Example** Find $4 \times (16 \times 6)$.

STEP 1

Simplify the problem. Rewrite $4 \times (16 \times 6)$ as a product of two factors.

$$\begin{aligned}
 4 \times (16 \times 6) &= 4 \times (\underline{\quad} \times 16) && \text{Commutative Property} \\
 &= (4 \times \underline{\quad}) \times 16 && \text{Associative Property} \\
 &= \underline{\quad} \times 16
 \end{aligned}$$

So, $4 \times (16 \times 6) = 24 \times 16$.

STEP 2

Multiply.

16	
<u> </u>	
$\times 24$	
<u> </u>	← 4×16
+	<u> </u>
<u> </u>	← 20×16
	← Add.

So, Sam ships _____ car model kits.

Try This!

$$\begin{aligned}
 (18 \times 8) \times 3 &= 18 \times (\underline{\quad} \times \underline{\quad}) && \text{Associative Property} \\
 &= 18 \times \underline{\quad} \\
 &= \underline{\quad}
 \end{aligned}$$

Math Talk

Mathematical Practices

Explain how using properties makes it easier to multiply three factors.

Share and Show



1. Find the product of $7 \times (6 \times 13)$.

STEP 1 Simplify the problem.

Rewrite $7 \times (6 \times 13)$ as a product of two factors.

$$7 \times (6 \times 13) = (\underline{\quad} \times \underline{\quad}) \times 13$$

Associative Property

$$= \underline{\quad} \times \underline{\quad}$$

STEP 2 Multiply.

$$\begin{array}{r} 13 \\ \times 42 \\ \hline \end{array}$$

Find each product.

2. $3 \times (14 \times 3) = \underline{\quad}$

3. $2 \times (4 \times 13) = \underline{\quad}$

4. $(16 \times 6) \times 3 = \underline{\quad}$

On Your Own

Find each product.

5. $7 \times (17 \times 4) = \underline{\quad}$

6. $(18 \times 4) \times 6 = \underline{\quad}$

7. $9 \times (17 \times 5) = \underline{\quad}$

8. $(5 \times 26) \times 3 = \underline{\quad}$

9. $9 \times (19 \times 2) = \underline{\quad}$

10. $(21 \times 4) \times 6 = \underline{\quad}$

Problem Solving



11. There are 3 basketball leagues. Each league has 8 teams. Each team has 13 players. How many players are there in all 3 leagues?

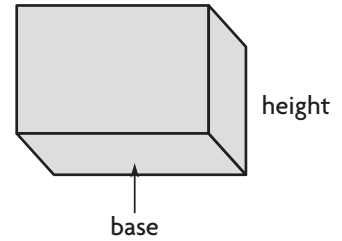
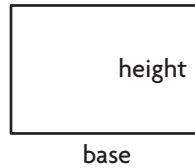
12. There are 8 boxes of tennis balls. There are 24 cans of tennis balls in each box. There are 3 tennis balls in each can. How many tennis balls are there in all?

Name _____

Find Area of the Base

Essential Question How can you find the area of the base of a rectangular prism?

Connect The base of a rectangle is different than the base of a rectangular prism. The base of a rectangle is a side, but the base of a rectangular prism is a rectangle. To find the area of a rectangle, use the formula $A = b \times h$ or $l \times w$.



Unlock the Problem Real World

Example

Ana is making a diorama for a class project. The diorama is in the shape of a rectangular prism. She wants to paint the bottom of the diorama. What is the area of the base?

The base shape is a rectangle.

Use a formula to find the area.

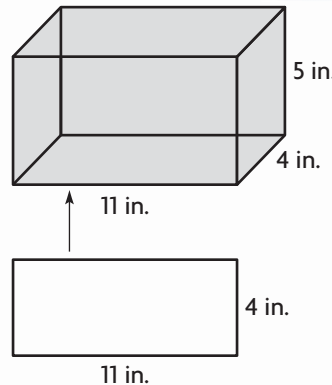
$$A = b \times h$$

base = _____ inches

height = _____ inches

$$A = _____ \times _____$$

$A = _____ \text{ square inches}$



- What shape is the base of the diorama?

- What are the base and height of the base of the diorama?

Math Talk

Mathematical Practices

Why would multiplying 11 by 5 give an incorrect answer for the area of the base?

Remember

Area of a rectangle:

$$A = b \times h \text{ or } l \times w$$

Area of a square: $A = s \times s$

So, the area of the base of the diorama is _____ square inches.

Share and Show



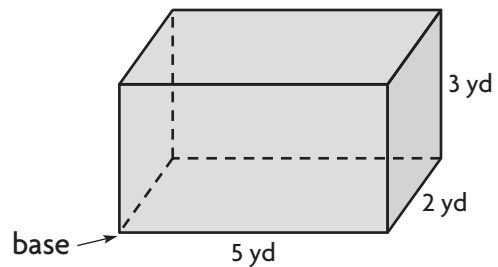
1. Find the area of the base of the rectangular prism.

The base shape is a _____.

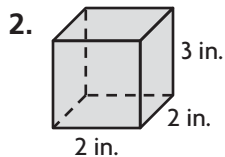
length = _____ yards, width = _____ yards

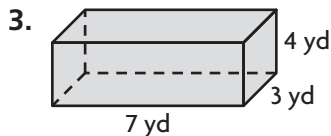
$A = \text{_____} \times \text{_____} = \text{_____}$ square yards

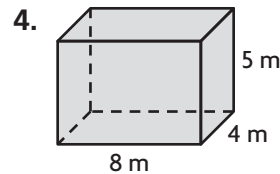
So, the area of the base is _____ square yards.



Find the area of the base of the rectangular prism.

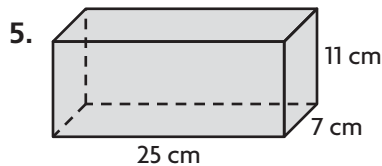


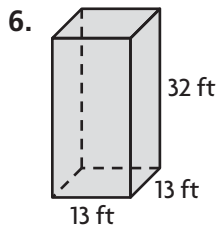


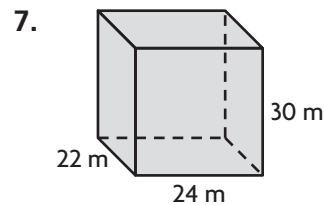


On Your Own

Find the area of the base of the rectangular prism.



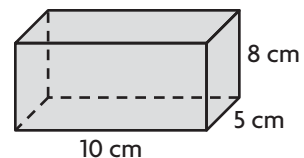




Problem Solving



8. Julio makes sugar cubes for horses. Each sugar cube edge is 1 centimeter in length. He packs the sugar cubes in the box shown without gaps. Julio says he can fit 80 sugar cubes in the bottom layer. Is he correct? Explain.



Name _____

✓ Checkpoint

Concepts and Skills

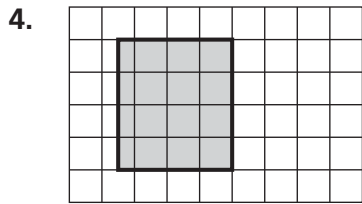
Find each product.

1. $(13 \times 8) \times 5 =$ _____

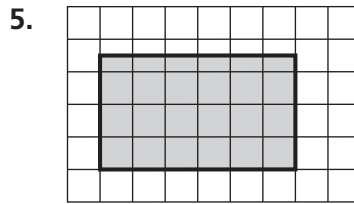
2. $7 \times (12 \times 8) =$ _____

3. $4 \times (17 \times 3) =$ _____

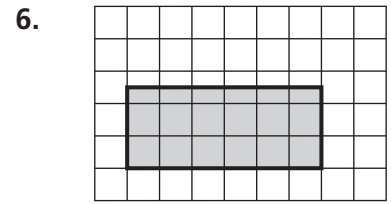
Find the area of the shaded shape. Write the area in square units.



1 square = 4 square yards

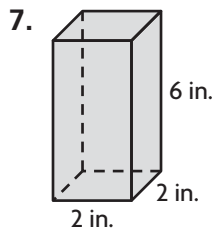


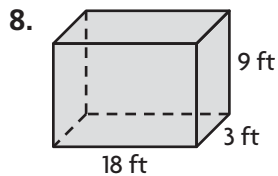
1 square = 16 square feet

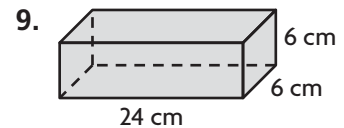


1 square = 25 square meters

Find the area of the base of the rectangular prism.







Problem Solving



10. There are 6 grades competing in a spelling bee. Each grade has 10 teams. Each team has 4 members. How many members are competing in the spelling bee?

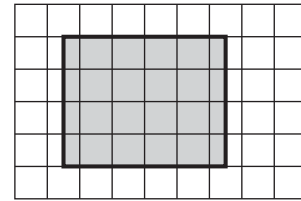
Fill in the bubble completely to show your answer.

11. There are 9 crates of oranges. There are 18 boxes of oranges in each crate. There are 6 bags of oranges in each box. How many bags of oranges are there in all?

- (A) 108
- (B) 162
- (C) 972
- (D) 1152

12. A small tiled balcony is shown. Each tile is 9 square inches. What is the area of the shaded section in square inches?

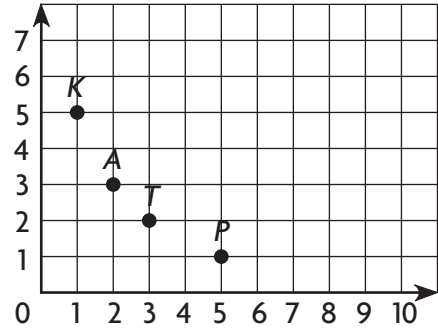
- (A) 20 square inches
- (B) 144 square inches
- (C) 162 square inches
- (D) 180 square inches



1 square = 9 square inches

13. Which ordered pair names point A on the grid?

- (A) (1, 5)
- (B) (2, 3)
- (C) (3, 2)
- (D) (5, 1)



14. What is the area of the base of the rectangular prism?

- (A) 40 square meters
- (B) 48 square meters
- (C) 144 square meters
- (D) 432 square meters

