Review What You Know!

Vocabulary

Choose the best term from the box.

- divisor
- quotient
- remainder
- tenths
- thousandths

1. The __?__ is the number that is left over after the division is complete.

2. In 450 ÷ 5 = 90, 90 is the __?__ and 5 is the __?__.

3. In 45.927, the 9 is in the __?__ place and the 7 is in the __?__ place.

Division Facts

4. 12 ÷ 3   5. 45 ÷ 9   6. 72 ÷ 9

7. 54 ÷ 6   8. 63 ÷ 7   9. 18 ÷ 6

Division Patterns

Use basic facts and patterns to divide mentally.

10. 36 ÷ 6   11. 49 ÷ 7

    360 ÷ 6   490 ÷ 7

    3,600 ÷ 6   4,900 ÷ 7

Division

Writing to Explain Write an answer for each question.

12. How is the number of zeros in the quotient of 5,600 ÷ 8 related to the number of zeros in the dividend?

13. How is dividing 240 by 80 similar to dividing 24 by 8?

3 How much money would a fifth-grader have to save each week, for 10 weeks, to purchase a child's membership to the San Diego Zoo? You will find out in Lesson 7-1.

4 California is of one of two U.S. states that grow avocados commercially. What does one California avocado weigh? You will find out in Lesson 7-2.
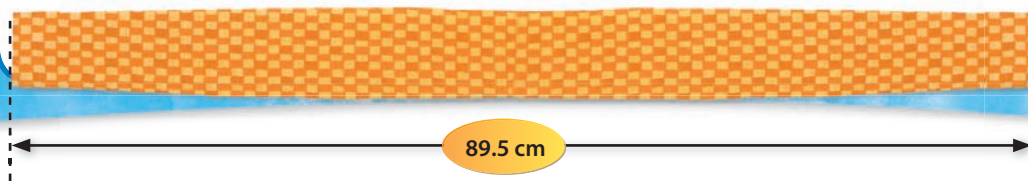
Dividing Decimals by 10, 100, or 1,000

How can you divide decimals by 10, 100, and 1,000?

Shondra wants to cut a cloth into 10 strips. All the strips should be exactly the same size. How wide will each strip be?

Choose an Operation Divide to find equal parts of a whole.

89.5 cm

Guided Practice*

Do you know HOW?

In **1** through **6**, use mental math to find each quotient.

1. 370.2 ÷ 10

2. 126.4 ÷ 100

3. 684.5 ÷ 1,000

4. 72.5 ÷ 10

5. 28.14 ÷ 100

6. 42.5 ÷ 1,000

Do you UNDERSTAND?

7. Look at the table above. When dividing by 1,000, why was it necessary to place a zero in the tenths place?

8. If Shondra wanted to cut the cloth into 100 strips, how wide would each strip be?

Independent Practice

In **9** through **31**, find each quotient. Use mental math.

9. 23.75 ÷ 1
23.75 ÷ 10
23.75 ÷ 100
23.75 ÷ 1,000

10. 509.3 ÷ 1,000
509.3 ÷ 100
509.3 ÷ 10
509.3 ÷ 1

11. 98.2 ÷ 100
98.2 ÷ 1
98.2 ÷ 1,000
98.2 ÷ 10

12. 13.65 ÷ 10

13. 75.3 ÷ 100

14. 890.1 ÷ 1,000

15. 5.67 ÷ 100

16. 8.74 ÷ 100

17. 32.40 ÷ 1,000

18. 12.33 ÷ 10

19. 0.5 ÷ 10

20. 4.5 ÷ 10

21. 9.78 ÷ 100

22. 7,446.5 ÷ 1,000

23. 234.5 ÷ 10

24. 0.27 ÷ 100

25. 121.6 ÷ 1,000

26. 8.373 ÷ 10

27. 6.9 ÷ 1,000

28. 8.25 ÷ 10

29. 31.8 ÷ 100

30. 0.36 ÷ 1,000

31. 9.47 ÷ 100

For another example, see Set A on page 170.

Find 89.5 ÷ 10.

The quotient of a number divided by 10, 100, or 1,000 is less than the number.

Moving the decimal point in a number to the left decreases the number's value.

Since place-value is based on 10, dividing by 10, 100, or 1,000 gives the same result as moving the decimal point 1, 2, or 3 places.

Notice the patterns in the table.

Divide by	Examples	Move decimal point to the left
1	12.5 ÷ 1 = 12.5	0 places
10	12.5 ÷ 10 = 1.25	1 place
100	12.5 ÷ 100 = 0.125	2 places
1,000	12.5 ÷ 1,000 = 0.0125	3 places

So, 89.5 ÷ 10 = 8.9.5 = 8.95

Each cloth strip will be 8.95 centimeters wide.

Problem Solving

For **32** through **34**, use the chart.

Pacific Middle School posted the winning times at the swim meet.

50-yard freestyle	22.17 seconds
100-yard backstroke	53.83 seconds
100-yard butterfly	58.49 seconds

32. What was the time per yard of the swimmer who swam the butterfly?

33. If the 50-yard freestyle swimmer could swim the 100-yard freestyle in exactly double his 50-yard time, what would his time per yard be?

34. What was the time per yard of the swimmer who swam the backstroke?

35. Rodella has a jar full of dimes. The total amount of money in her jar is $45.60. How many dimes does she have?

36. Writing to Explain How is dividing 360 by 10 similar to dividing 3,600 by 100? Explain.

37. Helen is saving to buy a Koala Club child's membership to the San Diego Zoo as a present for her brother. The membership fee is $21.50. Helen has 10 weeks in which to save for it. How much money should she save each week?

38. Algebra In which of the following equations does $n = 100$?

A $1946.8 ÷ n = 1.9468$

B $61.5 ÷ n = 0.615$

C $11.73 ÷ n = 0.01173$

D $4.12 ÷ n = 0.412$

39. The dimensions of a room are shown on a blueprint by the measures of 12 inches long and 10 inches wide. The actual room is 12 times as big. How many feet long and wide is the actual room?

Dividing a Decimal by a Whole Number

How do you divide a decimal by a whole number?

The three children in the Diego family are equally sharing the cost of an anniversary gift for their parents. How much will each child pay?

Choose an Operation Divide to find equal shares of the whole price.

$42.45

Other Examples

When do you write more zeros to the right of the decimal point in the dividend?

You know how to divide decimals by 10, 100, or 1,000. Now you will learn to divide decimals by other whole numbers.

Ann hiked for 6 hours on the river trail. She hiked a total of 19.5 miles. How many miles did she hike each hour?

Find 19.5 ÷ 6.

```
    3.25
6)19.50
  18
  ‾‾
   15
   12
   ‾‾
    30
    30
    ‾‾
     0
```

You can annex a 0 at the end of 19.5 in order to continue dividing.

Ann hiked 3.25 miles each hour.

Ann bought hiking and camping gear for a total of $239.49. She paid for the gear in 5 equal installments. How much was each installment?

Find 239.49 ÷ 5.

```
   $ 47.898
5)$239.490
   20
   ‾‾
    39
    35
    ‾‾
     44
     40
     ‾‾
      49
      45
      ‾‾
       40
       40
       ‾‾
        0
```

Sometimes when you divide with money, there is a remainder after you divide the hundredths.

Annex a zero after the hundredths place of the dividend and continue dividing to determine the thousandths place of the quotient.

Then round the quotient to the nearest hundredth. So, $239.49 ÷ 5 is about $47.90.

Ann paid in installments of $47.90.

Explain It

1. Why must a zero be annexed to the right of the decimal point in the dividend?

2. Why is a quotient that represents money rounded to the nearest hundredth?

Step 1

Find 42.45 ÷ 3.

Write the decimal point in the quotient directly above the decimal point in the dividend.

$$3\overline{)\ \overset{\textcolor{red}{.}}{\$42.45}}$$

Step 2

Divide the same way you would divide whole numbers.

```
       $14.15
  3)$42.45
   − 3
     ──
     12
     12
     ──
      4
      3
      ──
      15
      15
      ──
       0
```

Step 3

Use multiplication to check.

```
   $14.15
 ×      3
 ───────
  $42.45
```

Each child will pay $14.15.

Guided Practice*

Do you know HOW?

In **1** through **10**, find each quotient.

1. $4\overline{)\$6.48}$ **2.** $3\overline{)\$7.32}$

3. $5\overline{)4.50}$ **4.** $50\overline{)5.5}$

5. 1.90 ÷ 19   **6.** 13.2 ÷ 11

7. 5.6 ÷ 8   **8.** 12.5 ÷ 25

9. 22.1 ÷ 17   **10.** 26.52 ÷ 13

Do you UNDERSTAND?

11. For 3.6 ÷ 60, why do you need to write a zero to the right of the decimal point in the quotient?

12. How is dividing decimals unlike dividing whole numbers?

13. **Reasonableness** All 5 members of the Diego family went to dinner and shared the bill, which was $78.49, equally. Was each person's share less than $16.50?

Independent Practice

In **14** through **28**, find each quotient.

14. $2\overline{)\$56.84}$ **15.** $6\overline{)\$120.72}$ **16.** $7\overline{)\$35.14}$

17. $9\overline{)36.27}$ **18.** $16\overline{)39.68}$ **19.** $18\overline{)324.18}$

20. 64.33 ÷ 5   **21.** 406.2 ÷ 30   **22.** 489.6 ÷ 32

23. 297.81 ÷ 9   **24.** 175.75 ÷ 25   **25.** 35.902 ÷ 58

26. 432.88 ÷ 8   **27.** 28.4 ÷ 40   **28.** 1.5 ÷ 20

29. If one dozen of the same size California avocados weighs 7.2 lb, what does one avocado weigh?

30. **Number Sense** Without doing the division, how do you know that $84 \div 17$ could not be 14?

31. While traveling in the car, Juanita counted 27 out-of-state license plates, Carol counted 19, and Ramon counted 22. How many more out-of-state license plates did Juanita count than Carol?

32. Cora is saving for a vacation. The total cost of the vacation is $1,800.36, and she has a year to save the money. How much should she save per month so she can meet her goal?

33. Joe took out a $7,200 loan to buy a used car. He will make monthly payments for 4 years. How much will Joe pay each month on his loan?

34. **Algebra** A college baseball stadium holds 6,000 people. At a recent game only 5,145 seats were filled. Tickets to the game cost $12 each. Write and solve an equation to find how many seats were empty.

35. **Think About the Process** Tina bought 3 plants at $2.50 each and 3 clay pots at $4.25 each. Which expression shows how to find how much Tina spent on the plants and pots?

A ($2.50 + $4.25) + 3

B (3 + $4.25) × (3 + $2.50)

C (3 × $4.25) + (3 × $2.50)

D 3 × ($4.25 × $2.50)

36. **Think About the Process** Jill is 4 years older than Keiko. Robert is 2 years older than Keiko. If you know that Keiko is 12 years old, which number sentence can you use to find the sum, s, of the three ages?

A $s = 2 + 4 + 12$

B $s = (12 - 4) + (12 - 2) + 12$

C $s = (12 + 4) + (12 - 2) + 12$

D $s = (12 + 4) + (12 + 2) + 12$

37. Four college friends decided to share an apartment and some expenses equally.

a They plan to paint the apartment before they move in. The cost of paint and supplies is $76.80. What is each person's share?

b They plan to budget $225 for food each month. What is each person's share?

c The telephone service will cost $36.95 per month. What is each person's share?

38. Alyson works as a waitress. Last week she earned a total of $128.60 in tips in 5 days. How much did she earn in tips each day, if she earned the same amount each day?

39. **Writing to Explain** Why don't the expressions $4 \times 6 + 9$ and $4 \times (6 + 9)$ have the same value?

Algebra Connections

Completing Tables

Remember that multiplication and division have an inverse relationship.

Since $9 \times 7 = 63$, you also know:

$$63 \div 9 = 7$$

$$63 \div 7 = 9$$

You can use inverse relationships to help complete tables.

Example:

There are 4 quarts in a gallon. Complete the table.

gallons	1	3	8	■
quarts	4	12	■	40

You can multiply the number of gallons by 4 to find the number of quarts.

$8 \times 4 = 32$. So, 8 gallons = 32 quarts.

You can divide the number of quarts by 4 to find the number of gallons.

$40 \div 4 = 10$. So, 40 quarts = 10 gallons.

Copy and complete each table below.

1. Each box holds 5 pencils.

Pencils	15	30	35	40	45
Boxes	3	■	■	■	9

2. Each shelf has 10 books.

Shelves	2	3	4	■	■
Books	20	■	■	50	90

3. A frame holds 4 photos.

Frames	2	3	■	5	■
Photos	■	■	16	■	36

4. Each package has 8 markers.

Packages	2	4	5	■	■
Markers	■	■	■	72	80

5. Mallory swims 2 miles per day.

Days	1	3	■	10	■
Miles	■	■	16	■	60

6. Each week has 7 days.

Weeks	2	4	■	■	12
Days	■	■	35	63	■

Estimation: Decimals Divided by Whole Numbers

How can you estimate quotients with decimals?

Cheryl is saving $23 every week to buy a digital camera. About how many weeks will it take her to save enough money to buy the digital camera?

Choose an Operation Divide to find equal parts of the price. Estimate $269.95 ÷ $23.

$269.95

Guided Practice*

Do you know HOW?

In **1** through **8**, estimate each quotient.

1. 63.5 ÷ 8

2. 72.8 ÷ 10

3. 19.45 ÷ 4

4. 34.25 ÷ 7

5. 105.8 ÷ 11

6. 245.74 ÷ 83

7. 290.6 ÷ 31

8. 564.9 ÷ 90

Do you UNDERSTAND?

9. When would you estimate a quotient instead of finding a more accurate answer?

10. In the example above, if Cheryl could save $32 every week, about how many weeks would it take her to save enough money to buy the camera?

Independent Practice

In **11** through **13**, choose the best estimate for each quotient.

11. 47.52 ÷ 83

A 60   **C** 0.6

B 6   **D** 0.06

12. 18.9 ÷ 21

A 1   **C** 0.01

B 0.1   **D** 0.001

13. 36.6 ÷ 40

A 0.009   **C** 0.9

B 0.09   **D** 9

In **14** through **28**, estimate each quotient.

14. 270.9 ÷ 3

15. 87.3 ÷ 11

16. 7.75 ÷ 4

17. 556.3 ÷ 61

18. 31.77 ÷ 8

19. 56.4 ÷ 19

20. 976.4 ÷ 47

21. 869.77 ÷ 27

22. 195.6 ÷ 12

23. 91.26 ÷ 2

24. 44.8 ÷ 5

25. 88.34 ÷ 4

26. $15.75 ÷ 9

27. $274.89 ÷ 26

28. $346.95 ÷ 52

For another example, see Set C on page 170.

Problem Solving

29. There are 40 mg of caffeine in a 3-cup teapot of green tea. About how many milligrams of caffeine would be in one cup?

30. Jeremy paid $575 for a plane ticket, including tax of $21 and an airport fee of $12. What was the cost of the ticket before tax and the airport fee?

31. A three-pound package of ground beef costs $11.78. About how much does one pound cost?

32. Kira cycles about 10 miles every day. About how many miles does she cycle in 4 weeks?

33. **Writing to Explain** Rosa babysits from 10 A.M. until 3 P.M. five days per week during the summer. She watches four children, makes lunch, and drives them to swim practice. Her pay is $380.25 per week. How would you estimate the amount she is paid per hour?

34. **Algebra** Tickets to a movie cost $9 for an adult. Student tickets cost $5. Which expression shows the cost of tickets for a group, g, of students?

A $5 + g$ **C** $5 \times g$

B $9 + g$ **D** $9 \times g$

35. In science class, a student weighed three samples and found the weights to be 0.098 gram, 0.58 gram, and 0.005 gram. Which sample weighed the most?

36. One route from Cheyenne, Wyoming, to Devil's Tower National Monument is approximately 305.4 miles. If a car is driven between 55 and 60 miles per hour, about how many hours will the trip take?

37. A 300-foot fence has a flag on each post. There are posts at each end and every 6 feet along the fence. How many flags are on the fence?

38. **Reasoning** Find the pattern in the numbers below, and then write the next three numbers.

$$32, 16, 8, 4, 2, 1, 0.5, \ldots$$

Dividing a Decimal by a Decimal

How can you divide a decimal by a decimal?

Ms. Hendricks bought 0.84 pound of almonds. What is the price per pound of almonds?

Choose an Operation Divide the amount paid by the number of pounds bought to find the price per pound.

NS 2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results. Also **NS 2.2**

ALMONDS
NET WEIGHT 0.84 POUNDS

$3.99

Guided Practice*

Do you know HOW?

In **1** through **6**, find each quotient. Write more zeros in the dividends when needed.

1. $4.2 \div 0.7$

2. $4.52 \div 0.2$

3. $0.081 \div 0.9$

4. $23.28 \div 9.7$

5. $37.2 \div 2.4$

6. $25.2 \div 0.5$

Do you UNDERSTAND?

7. For the example above, how would you check the answer?

8. Mary paid $3.60 for pecans that cost $3.75 per pound. How many pounds of pecans did she buy?

Independent Practice

Leveled Practice In **9** through **12**, find each quotient.

9.
$$0.6\overline{)43.2}$$
Quotient begins 7 ▪ .
42
1 2
▪▪
0

10.
$$0.7\overline{)1.61}$$
Quotient begins 2.▪
14
▪▪
▪▪
0

11.
$$3.9\overline{)7.02}$$
Quotient begins 1.▪
3 9
▪▪▪
▪▪▪
0

12.
$$1.5\overline{)4.8}$$
Quotient begins 3.▪
▪▪
▪▪
▪▪
0

In **13** through **24**, find each quotient.

13. $0.08\overline{)0.104}$

14. $1.3\overline{)6.89}$

15. $0.9\overline{)5.49}$

16. $5.8\overline{)3.48}$

17. $69.09 \div 0.7$

18. $0.410 \div 0.2$

19. $91.53 \div 0.3$

20. $0.804 \div 0.4$

21. $9.483 \div 8.7$

22. $0.427 \div 6.1$

23. $28.14 \div 1.2$

24. $36.8 \div 0.25$

For another example, see Set D on page 171.

Find 3.99 ÷ 0.84.

Multiply the divisor by a power of 10 to make it a whole number.

$0.84 \times 100 = 84$

$0.84.\overline{)3.99}$

Multiply the dividend by the same power of 10.

$3.99 \times 100 = 399$

$0.84.\overline{)3.99.}$

Place the decimal point in the quotient. Divide as you would with whole numbers.

$$\begin{array}{r} 4.75 \\ 84\overline{)399.00} \\ -336 \\ \hline 630 \\ 588 \\ \hline 420 \\ 420 \\ \hline 0 \end{array}$$

TIP *Since the quotient represents money, annex two more zeros in the dividend to show cents.*

The almonds cost $4.75 per pound.

Problem Solving

For **25** through **27**, use the chart at the right.

25. How many pounds of apples could you buy for $8.00?

26. How much would a half pound of pears cost?

27. The price of a pound of cherries is how many times the price of a pound of bananas?

28. An overseas phone call costs $57.66 for 31 minutes. How much does the call cost per minute?

30. Tom arranged tiles in the pattern below.
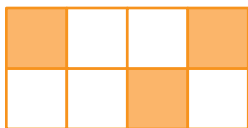
In which pair do both fractions describe the floor tiles that are shaded?

A $\frac{1}{2}, \frac{4}{8}$

B $\frac{3}{8}, \frac{6}{8}$

C $\frac{3}{8}, \frac{6}{16}$

D $\frac{3}{8}, \frac{3}{16}$

The chart below shows a few recent prices at The Farm Stand.

Fruit	Price per Pound
Pears	$1.38
Apples	$1.25
Cherries	$1.17
Bananas	$0.39

29. Jean paid $21.42 for the 6.8 gallons of gasoline that she put in her car's tank. What was the price per gallon?

31. A quarter horse can run 53.16 miles per hour, and a garden snail can move 0.02 of a mile per hour. How many times as fast does the quarter horse run than the garden snail moves?

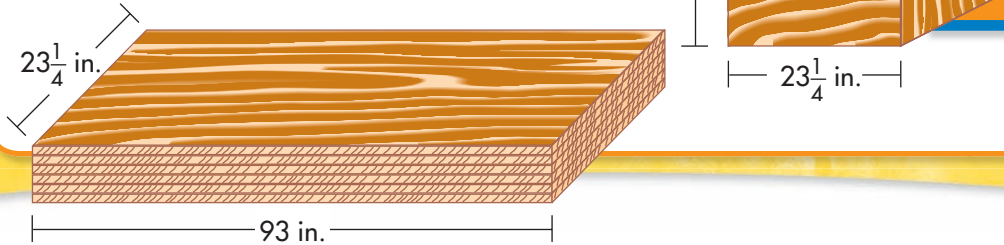**32. Writing to Explain** How could you use estimation to check the reasonableness of the quotient for 3.99 ÷ 0.84?

Problem Solving

Multiple-Step Problems

John is building 3 boxes. He can buy scrap sheets of plywood at the Use-It-Again store. He needs 6 pieces for each box. How many scrap sheets of plywood does he need?

$23\frac{1}{4}$ in.

$23\frac{1}{4}$ in.

$23\frac{1}{4}$ in.

93 in.

Another Example

The Marcos family went on a 2-week trip to San Diego. They drove 575 miles to get there and 627 miles to return home. In San Diego, they drove 121 miles while sightseeing. Their car can travel an average of 31.5 miles on 1 gallon of gas. If the car's gas tank can hold 14 gallons of gas, how many tanks of gas did they use on vacation?

What is one hidden question?

How many miles did the Marcos family drive?

575 miles + 627 miles + 121 miles = 1,323 miles

The Marcos family drove 1,323 miles on their trip.

What is another hidden question?

How many gallons of gas did they use on their trip?

1,323 miles ÷ 31.5 miles per gallon = 42 gallons

The Marcos family used 42 gallons of gas on their trip.

Divide the number of gallons used by the number of gallons in a full tank of gas.

42 gallons used ÷ 14 gallons in a full tank = 3 full tanks

The Marcos family used 3 tanks of gas on their trip to San Diego.

Explain It

1. Why do you need to find the hidden questions in order to solve the problem?

Read and Understand

What do I know?

Six pieces of plywood for each of 3 boxes are needed.

Boxes are $23\frac{1}{4}$ inch cubes.

Each sheet of plywood is $23\frac{1}{4}$ inches wide and 93 inches long

What am I asked to find?

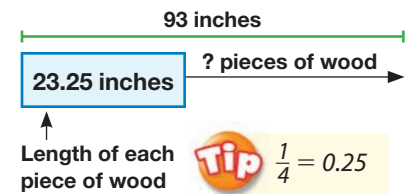The number of pieces of plywood needed to buy

Plan and Solve

Find the hidden question or questions.

1. How many pieces of plywood are needed for three boxes?

$$3 \times 6 = 18$$
boxes   pieces in each   pieces in all

2. How many pieces of plywood can be cut from 1 scrap sheet of plywood?

$$93 \div 23.25 = 4$$

93 inches

23.25 inches   ? pieces of wood

↑ Length of each piece of wood

Tip $\frac{1}{4} = 0.25$

3. How many sheets of plywood are needed for three boxes?

$$18 \div 4 = 4\ R2$$

John needs to buy 5 sheets of plywood.

Guided Practice*

Do you know HOW?

Solve the problem.

1. Tom bought 8 chicken breasts and 5 steaks. Each chicken breast weighed 0.35 pound and each steak weighed 1.25 pound. How many pounds of meat did Tom buy?

Do you UNDERSTAND?

2. What are the hidden questions and answers in Problem 1?

3. **Write a Problem** Write a real-world multiple-step problem that can be solved using multiplication and division.

Independent Practice

In **4** through **7**, write the hidden question or questions. Then solve.

4. Alyssa has a CD that holds 700 megabytes of information. She has saved 53 pictures, each using 2.24 megabytes, to the CD. How much space is left on the CD?

5. Lori bought some plums and 4 peaches. The peaches cost $1.88 in all and the plums cost $0.33 each. She paid $3.86 in all, not including tax. How many plums did she buy?

Stuck? Try this....

- What do I know?
- What am I asked to find?
- What diagram can I use to help understand the problem?
- Can I use addition, subtraction, multiplication, or division?
- Is all of my work correct?
- Did I answer the right question?
- Is my answer reasonable?

For **6**, use the chart at the right.

6. The school cafeteria manager needs to know how many food trays are needed during a week. All of the students eat lunch each school day, and half of all the students eat breakfast. How many trays will be needed in one week?

Data	Grade	Number of Students	Grade	Number of Students
	K	95	3	107
	1	112	4	100
	2	104	5	114

7. Juan used first-class mail to send two baseballs to his grandson. Each baseball weighed 5 ounces. The postage was $0.39 for the first ounce and $0.24 for each additional ounce. How much was the postage?

8. The Meadows Farm has 160 acres. Three times as many acres are used to plant crops as are used for pasture. Draw a picture and write an equation to find how many acres are used for pasture.

9. A youth group charged $6 per car at their car wash to raise money. They raised $858. Of that amount, $175 was given as donations and the rest of the money came from washing cars. Stella estimated that they washed more than 100 cars. Is her estimate reasonable? Explain your reasoning.

10. A hardware store has 5 employees. Each employee works the same number of hours every week, and each one earns $10.50 per hour. Last week they worked a total of 167.5 hours. Draw a picture and write an equation to find how many hours each employee worked.

Think About the Process

11. Matt is saving to buy a skateboard and a helmet. The skateboard costs $57 and the helmet costs $45. Matt has saved $19 so far. Which hidden question needs to be answered before you can find how much more he needs to save?

　A Is the skateboard on sale?

　B How much more does the skateboard cost than the helmet?

　C What is the price of the skateboard minus the price of the helmet?

　D What is the total price of the helmet and the skateboard?

12. Two restaurant waiters share $\frac{1}{4}$ of their tips with the dishwasher. On Saturday, one waiter earned $122 in tips, and the other waiter earned $136 in tips. Which expression shows how to find the solution to the hidden question?

　A $122 + 136$

　B $\frac{1}{4} \times 136$

　C $\frac{1}{4} \times 122$

　D $136 - 122$

Find the quotient. Estimate to check if the answer is reasonable.

1. 14.5 ÷ 2.5 **2.** 2.28 ÷ 0.6 **3.** 69.02 ÷ 0.7 **4.** 88.5 ÷ 0.03

5. 0.08 ÷ 0.025 **6.** 3.2 ÷ 0.004 **7.** 15.5 ÷ 6.2 **8.** 2.35 ÷ 4.7

Find the product. Estimate to check if the answer is reasonable.

9. 0.07
  × 0.09

10. 5.6
  × 0.08

11. 6.98
  × 3.8

12. 1.3
  × 0.04

13. 0.67
  × 3.6

14. 6.8
  × 9.4

15. 8.88
  × 0.08

16. 0.03
  × 0.3

Evaluate each expression. Use order of operations.

17. $2 \times 7 + 25 \div 5$ **18.** $(17 - 8) \times 5 + 1$ **19.** $47 - (3 + 6) \times 5 + 1$

Error Search Find each answer that is not correct.
Write it correctly and explain the error.

20. 2.748 ÷ 0.6 = 0.0458 **21.** 7.86 ÷ 6 = 1.31 **22.** 26.82
  ×   3
  80.45

23. 5.87
  × 4.9
  287.63

Number Sense

Estimating and Reasoning Write whether each statement is
true or false. Explain your reasoning.

24. The quotient of 4.35 ÷ 6 is closer to 0.7 than 0.8.

25. The expression $8e + 6$ equals 30 when $e = 3$.

26. The product of 5.7 and 8.63 is less than 54.

27. The quotient of 3,467 ÷ 5 is closer to 700 than the quotient of 5,598 ÷ 8.

28. The sum of 99,999 and 3,879 is 1 more than 103,879.

29. The product of 6 and 808 is greater than the product of 8 and 606.

1. Mr. Dodd filled the gas tank on his lawn mower with 3.8 gallons of gas. If he mowed his yard 10 times on the same tank of gas, how much gas did he use each time the lawn was mowed? (7-1)

   A 0.038 gallons

   B 0.38 gallons

   C 38 gallons

   D 380 gallons

2. Gilbert bought a package of 48 golf balls for $13.44. What is the price of each golf ball? (7-2)

   A $0.28

   B $0.30

   C $2.80

   D $2.81

3. The table shows the amount of different types of produce Mrs. Cuzalina bought, and the total price she paid for each. What is the price per pound she paid for the apples? (7-4)

Produce	Pounds	Total Price
Apples	3.4	$2.89
Bananas	2.6	$1.27
Grapes	3.7	$2.85

   A $0.09

   B $0.80

   C $0.84

   D $0.85

4. The chef at a restaurant in San Francisco bought 37 pounds of salad for $46.25. How much did she pay for 1 pound of salad? (7-2)

   A $0.125

   B $1.25

   C $1.30

   D $12.50

5. What is 171.84 ÷ 0.8? (7-4)

   A 214.8

   B 201.48

   C 21.48

   D 20.48

6. Trevor grew 3.28 inches over a 16 week period. What is the average number of inches he grew each week? (7-2)

   A 0.025

   B 0.205

   C 0.3

   D 2.05

7. If 249 ÷ 6 = 41.5, what is 2.49 ÷ 6? (7-2)

   A 41.5

   B 4.15

   C 0.415

   D 0.0415

8. What is 32.62 ÷ 100? (7-1)

   A 0.3262

   B 3.262

   C 326.2

   D 3,262

9. Mrs. Delgato needs to buy 50 begonias for her flowerbed. According to the prices shown, how much would she save if she bought them by the flat instead of separately? (7-5)

> **Data**
> **Begonias**
> $1.75 each
> $35.50 per flat
> (25 plants per flat)

A $8.25

B $16.50

C $33.00

D $52.00

10. Which of the following is the best estimate of 78.4 ÷ 18? (7-3)

A 740

B 50

C 5

D 4

11. What is 2.48 ÷ 1,000? (7-1)

A 0.248

B 0.0248

C 0.00248

D 0.000248

12. Which of the following uses show the best way to estimate 62.45 ÷ 9? (7-3)

A 64 ÷ 10 = 6.4

B 60 ÷ 10 = 6

C 62 ÷ 10 = 6.2

D 63 ÷ 9 = 7

13. Which step should be taken to find the quotient of 56.8 ÷ 100? (7-1)

A Move the decimal point in 56.8 two places to the left.

B Move the decimal point in 56.8 one place to the left.

C Move the decimal point in 56.8 two places to the right.

D Move the decimal point in 56.8 one place to the right.

14. A developer owns 24 acres of land. If he plans to use 1.2 acres of the land for an entrance into a housing development and divide the remaining land into 0.6 acre lots, how many lots will he have? (7-5)

A 42

B 40

C 38

D 2

15. What is 43.68 ÷ 5.2? (7-4)

A 0.84

B 7.99

C 8.04

D 8.4

16. Mrs. Frohock bought a watermelon that weighed 10.25 pounds. If she cut it into 5 pieces of equal weight, how many pounds did each piece weigh? (7-2)

A 2.5

B 2.15

C 2.05

D 0.25

Set A, pages 154–155

Find 34.05 ÷ 100.

Dividing by 100 means moving the decimal point two places to the left.

34.05 ÷ 100 = 0.3405

Dividing by 10 means moving the decimal point one place to the left.

Dividing by 1,000 means moving the decimal point three places to the left.

Remember that when dividing decimals by 10, 100, or 1,000, you may need to use one or more zeros as placeholders:
24.3 ÷ 1,000 = 0.**0**243.

Use mental math to find each quotient.

1. 34.6 ÷ 10   **2.** 64.83 ÷ 100

3. 148.3 ÷ 1,000   **4.** 2.99 ÷ 100

5. 7.07 ÷ 10   **6.** 59.13 ÷ 1,000

7. 8.94 ÷ 100   **8.** 6.34 ÷ 10

Set B, pages 156–158

Find 3.60 ÷ 15.

$$
\begin{array}{r}
0.24 \\
15\overline{)3.60} \\
3\,0 \\
\hline
60 \\
60 \\
\hline
0
\end{array}
$$

Place the decimal point in the quotient directly above the decimal point in the dividend. Then divide.

So, 3.60 ÷ 15 = 0.24.

Multiply to check.

0.24 × 15 = 3.60

Remember to write a zero placeholder in the quotient when you cannot divide a place in the dividend.

Find each quotient.

1. $7\overline{)12.6}$ **2.** $31\overline{)17.05}$

3. $8\overline{)51.2}$ **4.** $12\overline{)60.12}$

5. 199.68 ÷ 64   **6.** 152.5 ÷ 5

7. 47.61 ÷ 23   **8 .** 51.6 ÷ 43

Set C, pages 160–161

Estimate: 25.1 ÷ 11.

Use compatible numbers.

25.1 ÷ 11
↓   ↓
24 ÷ 12 = 2

So, 25.1 ÷ 11 is about 2.

Remember that compatible numbers are numbers that are easy to compute in your head.

Estimate each quotient.

1. 26.2 ÷ 5   **2.** 31.9 ÷ 3

3. 49.6 ÷ 6   **4.** 163.5 ÷ 80

5. 4,352.9 ÷ 74   **6.** 538.6 ÷ 64

7. 251.6 ÷ 38   **8.** 819.7 ÷ 21

9. 83.62 ÷ 7   **10.** 571.3 ÷ 79

Set D, pages 162–163

Find 57.9 ÷ 0.6.

Since 0.6 has one decimal place, move the decimal point one place to the right in both numbers. Then divide.

```
        96.5
0.6)57.90      Annex more zeros
    54         in the dividend if
    ──         needed.
    39
    36
    ──
     30
     30
     ──
      0
```

57.9 ÷ 0.6 = 96.5

Remember to place the decimal point in the quotient above the decimal point in the dividend before dividing.

**1.** 79.36 ÷ 3.2   **2.** 73.44 ÷ 3.6

3. 78.6 ÷ 0.03   **4.** 9.315 ÷ 0.81

5. 0.903 ÷ 2.1   **6.** 4.56 ÷ 0.5

7. 16.4 ÷ 0.8   **8.** 136.5 ÷ 4.2

9. 22.22 ÷ 2.2   **10.** 54.78 ÷ 6.6

11. 71.04 ÷ 7.4   **12.** 40.02 ÷ 8.7

13. 9.6 ÷ 0.03   **14.** 74.48 ÷ 9.8

Set E, pages 164–166

A football coach spent a total of $890.40, including $50.40 tax, for 35 shirts for the team. Each shirt was the same price. What was the price of one shirt?
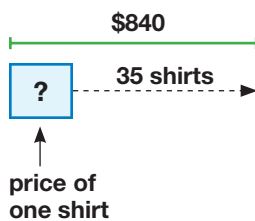
What is the hidden question or questions?

How much did all of the shirts cost without tax?
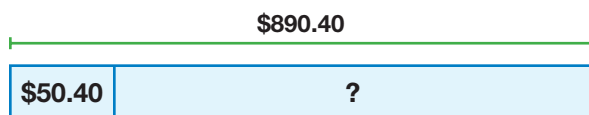
$890.40	
$50.40	?

$890.40 − $50.40 = $840.00

What is the price of one shirt?

```
    $840
┌───┐   35 shirts
│ ? │ - - - - - ▶
└───┘
  ↑
price of
one shirt
```

$840 ÷ 35 = $24

The price of one shirt was $24.00.

Remember to answer the hidden question or questions first to solve the problem.

Write and answer the hidden question or questions. Then solve.

1. Royce bought a book for $12.49 and 2 DVDs. Both DVDs were the same price. The tax on all the items is $1.76. He paid a total of $46.23. What was the price of each DVD?

2. Kim bought sandwiches for the football team. Each sandwich cost $3.49. She paid $142.39, including $2.79 tax. How many sandwiches did she buy?