

Homework and Remembering

HOUGHTON MIFFLIN HARCOURT



M A T H

Expressions

Common Core



GRADE

4

Volume 1

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Homework

Write the number of tens and the number of ones in each number.

1. 56

 5 tens 6 ones

2. 708

 0 tens 8 ones

3. 6,170

 7 tens 0 ones

Write the number of thousands and the number of hundreds in each number.

4. 4,982

 4 thousands 9 hundreds

5. 316

 0 thousands 3 hundreds

6. 2,057

 2 thousands 0 hundreds

Make a place-value drawing for each number, using ones, quick tens, hundred boxes, and thousand bars. **Check students' drawings.**

7. 36

8. 510

9. 403

10. 1,072

Remembering

Multiply or divide.

$1. 8 \times 3 = \underline{\hspace{2cm} 24 \hspace{2cm}}$

$2. 40 \div 4 = \underline{\hspace{2cm} 10 \hspace{2cm}}$

$3. 27 \div 9 = \underline{\hspace{2cm} 3 \hspace{2cm}}$

$4. 7 \times 6 = \underline{\hspace{2cm} 42 \hspace{2cm}}$

$5. 2 \times 8 = \underline{\hspace{2cm} 16 \hspace{2cm}}$

$6. 6 \times 5 = \underline{\hspace{2cm} 30 \hspace{2cm}}$

Use the diagram to complete Exercises 7–10.



Write two related multiplication problems for the diagram.

$7. \underline{\hspace{2cm} 8 \times 4 = 32 \hspace{2cm}}$

$8. \underline{\hspace{2cm} 4 \times 8 = 32 \hspace{2cm}}$

Write two related division problems for the diagram.

$9. \underline{\hspace{2cm} 32 \div 4 = 8 \hspace{2cm}}$

$10. \underline{\hspace{2cm} 32 \div 8 = 4 \hspace{2cm}}$

11. Stretch Your Thinking Marcus says this place value drawing represents the number 4,083. Owen says it represents 483. Which student is correct? Explain the error.



Owen is correct. The place value drawing shows 4 hundred
boxes, 8 quick tens, and 3 ones, which represents 483.

Marcus mistook the hundred boxes for thousand bars.

Homework

Read and write each number in standard form.

1. $90 + 2 = \underline{92}$

2. $600 + 80 + 9 = \underline{689}$

3. $2,000 + 800 + 50 + 7 = \underline{2,857}$

4. $3,000 + 80 + 5 = \underline{3,085}$

Read and write each number in expanded form.

5. $48 = \underline{40 + 8}$

6. $954 = \underline{900 + 50 + 4}$

7. $6,321 = \underline{6,000 + 300 + 20 + 1}$

8. $4,306 = \underline{4,000 + 300 + 6}$

9. $1,563 = \underline{1,000 + 500 + 60 + 3}$

10. $2,840 = \underline{2,000 + 800 + 40}$

Read and write each number in word form.

11. $300 + 20 + 5 = \underline{\text{three hundred twenty-five}}$

12. $5,000 + 700 + 40 + 8 = \underline{\text{five thousand, seven hundred forty-eight}}$

13. $9,000 + 400 + 6 = \underline{\text{nine thousand, four hundred six}}$

Read and write each number in standard form.

14. seventy-six $= \underline{76}$

15. three hundred one $= \underline{301}$

16. four thousand, two hundred sixteen $= \underline{4,216}$

17. five thousand, one hundred forty-two $= \underline{5,142}$

Write the value of the underlined digit.

18. $\underline{2}87 = \underline{80}$

19. $8,\underline{7}92 = \underline{8,000}$

20. $7,\underline{8}12 = \underline{800}$

Remembering

Multiply or divide.

1. $6 \times 4 =$ 24

2. $56 \div 8 =$ 7

3. $45 \div 9 =$ 5

4. $6 \times 6 =$ 36

5. $3 \times 7 =$ 21

6. $48 \div 6 =$ 8

7. Grace read six books over the summer. Her sister read three times that number. How many books did Grace's sister read over the summer?

18

Write the number of thousands and the number of hundreds in each number.

8. 5,812

5 thousands

8 hundreds

9. 7,026

7 thousands

0 hundreds

Make a place value drawing for each number, using ones, quick tens, hundred boxes, and thousand bars.

10. 603

Check students' drawings.

11. 3,187

Check students' drawings.

12. **Stretch Your Thinking** Mr. Thomas writes 4,964 on the board. Amy says the value of the underlined digit is 9. Chris said the value is 900. Which student is correct? Explain.

Chris is correct. The underlined digit is in the hundreds place of the number. So, it has a value of 9 hundreds, or 900.

Homework

Round each number to the nearest ten.

1. 46 50

2. 381 380

3. 4,175 4,180

4. 5,024 5,020

Round each number to the nearest hundred.

5. 789 800

6. 971 1,000

7. 2,759 2,800

8. 3,148 3,100

Round each number to the nearest thousand.

9. 6,578 7,000

10. 4,489 4,000

11. 8,099 8,000

12. 2,761 3,000

Compare using $>$, $<$, or $=$.

13. 4,538 $<$ 4,835

14. 3,554 $>$ 3,449

15. 1,289 $<$ 1,298

16. 7,235 $>$ 6,987

17. 4,004 $<$ 4,034

18. 5,609 $>$ 5,059

Solve.

19. When you round a number, which digit in the number helps you decide to round up or round down? Explain your answer.

You look at the digit in the place to the right of
the place to which you are rounding. If the digit is
5 or greater, round up. If the digit is less than 5,
the digit in the place to which you are rounding
does not change.

20. When you round a number, what should you do with the digits to the right of the place to which you are rounding?

Write zeros in all the places to the right of the
place to which you are rounding.

Remembering

Find the unknown number.

1. $4 \times 8 = \underline{32}$

2. $42 \div 7 = \underline{6}$

3. $63 \div \underline{7} = 9$

4. $\underline{8} \times 5 = 40$

5. $9 \times \underline{9} = 81$

6. $\underline{60} \div 6 = 10$

7. $21 \div 7 = \underline{3}$

8. $10 \times \underline{10} = 100$

Write the number of tens and the number of ones in each number.

9. 607
 $\underline{0}$ tens

10. 9,324
 $\underline{2}$ tens

$\underline{7}$ ones

$\underline{4}$ ones

Read and write each number in standard form.

11. $40 + 3 \underline{43}$

12. $500 + 70 + 9 \underline{579}$

13. $1,000 + 200 + 50 + 8 \underline{1,258}$

14. $8,000 + 70 + 7 \underline{8,077}$

15. **Stretch Your Thinking** Sara is thinking of a number.

When she rounds her number to the nearest hundred, she gets 700. What is the greatest number Sara can be thinking of? Explain.

749; The number 749 rounded to the nearest hundred is 700. The number 750 rounded to the nearest hundred is 800. So, 749 is the greatest number Sara could be thinking of that rounds to 700.

Homework

Read and write each number in expanded form.

1. 39,012 $30,000 + 9,000 + 10 + 2$
2. 640,739 $600,000 + 40,000 + 700 + 30 + 9$
3. 102,453 $100,000 + 2,000 + 400 + 50 + 3$
4. 460,053 $400,000 + 60,000 + 50 + 3$

Read and write each number in word form.

5. 1,000,000
one million
6. 730,812
seven hundred thirty thousand, eight hundred twelve
7. 45,039
forty-five thousand, thirty-nine
8. 600,439
six hundred thousand, four hundred thirty-nine

Read and write each number in expanded form.

9. nine hundred twenty-three thousand, nine hundred twenty-three
 $900,000 + 20,000 + 3,000 + 900 + 20 + 3$
10. one hundred forty thousand, one hundred four
 $100,000 + 40,000 + 100 + 4$
11. seventy-six thousand, five
 $70,000 + 6,000 + 5$
12. fifty-nine thousand, two hundred sixty-one
 $50,000 + 9,000 + 200 + 60 + 1$
13. seven hundred thousand, four hundred thirty
 $700,000 + 400 + 30$
14. thirty-one thousand, two hundred seventy-nine
 $30,000 + 1,000 + 200 + 70 + 9$

Remembering

Use the numbers 7, 9, and 63 to complete the related equations.

1. $7 \times \underline{9} = \underline{63}$

2. $9 \times \underline{7} = \underline{63}$

3. $\underline{63} \div \underline{9} = 7$

4. $\underline{63} \div \underline{7} = 9$

Solve.

5. Aileen made 36 mini muffins for the school bake sale. Each bag holds four mini muffins. How many bags of mini muffins will she have for the bake sale?

9

Read and write each number in expanded form.

6. 86 $80 + 6$

7. 421 $400 + 20 + 1$

8. 7,915 $7,000 + 900 + 10 + 5$

9. 3,402 $3,000 + 400 + 2$

Write the value of the underlined digit.

10. 489 80

11. 7,493 7,000

12. 1,506 6

Round each number to the nearest ten.

13. 47 50

14. 6,022 6,020

Round each number to the nearest hundred.

15. 672 700

16. 3,940 3,900

17. **Stretch Your Thinking** How many zeros are in the standard form of six hundred thousand, twenty? Explain.

There are four zeros in the standard form of six hundred thousand, twenty. The standard form of six hundred thousand, twenty is 600,020.

Homework

Compare using $>$, $<$, or $=$.

1. $57,068 < 57,860$

2. $24,516 > 24,165$

3. $154,424 > 145,424$

4. $836,245 > 683,642$

5. $89,175 = 89,175$

6. $100,000 < 1,000,000$

Round to the nearest ten thousand.

7. $11,295 \underline{10,000}$

8. $82,964 \underline{80,000}$

9. $97,079 \underline{100,000}$

Round to the nearest hundred thousand.

10. $153,394 \underline{200,000}$

11. $410,188 \underline{400,000}$

12. $960,013 \underline{1,000,000}$

13. $837,682 \underline{800,000}$

Solve.

14. What would 672,831 be rounded to the nearest:

a. ten? $\underline{672,830}$

b. hundred? $\underline{672,800}$

c. thousand? $\underline{673,000}$

d. ten thousand? $\underline{670,000}$

e. hundred thousand? $\underline{700,000}$

15. Compare the number 547,237 rounded to the nearest hundred thousand and 547,237 rounded to the nearest ten thousand. Which is the greater number? Write a comparison statement and explain your answer.

Possible answer: The number 547,237 rounded to the nearest hundred thousand is 500,000. The number rounded to the nearest ten thousand is 550,000. The number rounded to the nearest ten thousand is the greater number. $500,000 < 550,000$.

Homework

Use the information in the table to answer the questions.

Driving Distances (in miles) between Various Cities in the United States

	New York, NY	Chicago, IL	Los Angeles, CA
Atlanta, GA	886	717	2,366
Dallas, TX	1,576	937	1,450
Nashville, TN	914	578	2,028
Omaha, NE	1,257	483	1,561
Seattle, WA	2,912	2,108	1,141
Wichita, KS	1,419	740	1,393

1. If you drive from New York to Dallas and then from Dallas to Chicago, how many miles would you drive?

2,513 miles

2. Which two cities are farther apart in driving distance: Seattle and Los Angeles or Wichita and New York? Use place value words to explain your answer.

Wichita and New York; because 4 hundreds are greater than 1 hundred, 1,419 is greater than 1,141.

Use any method to add. On another sheet of paper, make a drawing for exercise 5 to show your new groups.

For Exercise 5, check students' drawings.

$$\begin{array}{r} 3. \quad 1,389 \\ + 5,876 \\ \hline 7,265 \end{array}$$

$$\begin{array}{r} 4. \quad 3,195 \\ + 2,674 \\ \hline 5,869 \end{array}$$

$$\begin{array}{r} 5. \quad 1,165 \\ + 7,341 \\ \hline 8,506 \end{array}$$

$$\begin{array}{r} 6. \quad 2,653 \\ + 4,908 \\ \hline 7,561 \end{array}$$

$$\begin{array}{r} 7. \quad 3,692 \\ + 7,543 \\ \hline 11,235 \end{array}$$

$$\begin{array}{r} 8. \quad 8,598 \\ + 5,562 \\ \hline 14,160 \end{array}$$

$$\begin{array}{r} 9. \quad 4,295 \\ + 8,416 \\ \hline 12,711 \end{array}$$

$$\begin{array}{r} 10. \quad 6,096 \\ + 9,432 \\ \hline 15,528 \end{array}$$

Remembering

Multiply or divide.

1. $81 \div 9 = \underline{\quad 9 \quad}$

2. $7 \times 4 = \underline{\quad 28 \quad}$

3. $9 \times 3 = \underline{\quad 27 \quad}$

4. $24 \div 4 = \underline{\quad 6 \quad}$

5.
$$\begin{array}{r} 7 \\ \times 8 \\ \hline 56 \end{array}$$

6.
$$\begin{array}{r} 5 \\ \times 7 \\ \hline 35 \end{array}$$

7.
$$\begin{array}{r} 8 \\ 10 \overline{)80} \end{array}$$

8.
$$\begin{array}{r} 6 \\ 7 \overline{)42} \end{array}$$

Read and write each number in expanded form.

9. eighty-six thousand, nine hundred twenty-one

$$\underline{\quad 80,000 + 6,000 + 900 + 20 + 1 \quad}$$

10. nine hundred twenty thousand, four hundred thirteen

$$\underline{\quad 900,000 + 20,000 + 400 + 10 + 3 \quad}$$

Compare using $>$, $<$, or $=$.

11. $36,290 \text{ (} = \text{)} 36,290$

12. $438,000 \text{ (} > \text{)} 43,800$

13. $298,150 \text{ (} > \text{)} 298,105$

14. $999,999 \text{ (} < \text{)} 1,000,000$

15. **Stretch Your Thinking** Find the unknown digits in the following addition problem.

$$\begin{array}{r} 3, \boxed{5} 6 \boxed{4} \\ + 4, 9 \boxed{7} 2 \\ \hline \boxed{8}, 5 3 6 \end{array}$$

Homework

Copy each exercise, lining up the places correctly. Then add.

1. $51,472 + 7,078$
58,550

2. $94,280 + 56,173$
150,453

3. $1,824 + 36,739$
38,563

4. $372,608 + 51,625$
424,233

5. $314,759 + 509,028$
823,787

6. $614,702 + 339,808$
954,510

7. $493,169 + 270,541$
763,710

8. $168,739 + 94,035$
262,774

The table shows the surface area of each of the Great Lakes.

Use the data in the table to help answer the following questions.

Lake	Surface Area (square miles)
Erie	9,906
Huron	22,973
Michigan	22,278
Ontario	7,340
Superior	31,700

9. Which is greater, the surface area of Lake Superior, or the sum of the surface areas of Lake Michigan and Lake Erie?

Show your work.

Lake Michigan and Lake Erie

10. Which two lakes have a combined surface area of 30,313 square miles?

Lake Huron and Lake Ontario

Homework

Write a number sentence that shows an estimate of each answer. Then write the exact answer. **Estimates may vary.**

1. $69 + 25$ **estimate: $70 + 25 = 95$; exact: 94** _____

2. $259 + 43$ **estimate: $260 + 40 = 300$; exact: 302** _____

3. $2,009 + 995$ **estimate: $2,000 + 1,000 = 3,000$; exact: 3,004** _____

4.
$$\begin{array}{r} 5 \\ 3 \\ 7 \\ + 4 \\ \hline 19 \end{array}$$

5.
$$\begin{array}{r} 38 \\ 54 \\ + 52 \\ \hline 144 \end{array}$$

6.
$$\begin{array}{r} 28 \\ 44 \\ 32 \\ + 46 \\ \hline 150 \end{array}$$

7.
$$\begin{array}{r} 243 \\ 625 \\ + 387 \\ \hline 1,255 \end{array}$$

8.
$$\begin{array}{r} 154 \\ 131 \\ 204 \\ + 179 \\ \hline 668 \end{array}$$

Solve. Estimates may vary.

Show your work.

9. Paul's stamp collection includes 192 domestic and 811 foreign stamps.

About how many domestic and foreign stamps does Paul have altogether?

$200 + 800$; about 1,000 stamps _____

Exactly how many domestic and foreign stamps does Paul have altogether?

1,003 stamps _____

10. Plane A travels 102,495 miles. Plane B travels 91,378 miles. How many miles in all do the two planes travel?

193,873 miles _____

Explain how you can use estimation to check that your answer is reasonable.

Possible explanation: I would round 102,495 down to 100,000, and _____

round 91,378 down to 90,000. $100,000 + 90,000 = 190,000$. Since _____

193,873 is close to 190,000, the answer is reasonable. _____

Remembering

What is 362,584 rounded to the nearest:

1. hundred? 362,600

2. thousand? 363,000

3. ten thousand? 360,000

4. hundred thousand? 400,000

Use any method to add.

$$\begin{array}{r} 5. \quad 2,938 \\ + 4,271 \\ \hline 7,209 \end{array}$$

$$\begin{array}{r} 6. \quad 8,305 \\ + 1,467 \\ \hline 9,772 \end{array}$$

$$\begin{array}{r} 7. \quad 8,074 \\ + 3,552 \\ \hline 11,626 \end{array}$$

Copy each exercise, lining up the places correctly. Then add.

$$\begin{array}{r} 8. \quad 45,296 + 38,302 \\ \hline 83,598 \end{array}$$

$$\begin{array}{r} 9. \quad 293,017 + 58,226 \\ \hline 351,243 \end{array}$$

10. **Stretch Your Thinking** Luanne estimates the sum of $39 + 15$ is about $40 + 15$, or 55. Jacob estimates the sum of $39 + 15$ is about $40 + 20$, or 60. Which estimate is closer to the exact sum? Explain.

Possible answer: Luanne's estimate is closer to the exact sum. Luanne did not round 15 because it's easy to add to 40. Jacob rounded 15 to the nearest ten, which is 20. The sum of $39 + 15$ is 54. Luanne's estimate of 55 is closer.

Homework**Subtract. Show your new groups.**

$$\begin{array}{r} 1. \quad 7,000 \\ - 3,264 \\ \hline 3,736 \end{array}$$

$$\begin{array}{r} 2. \quad 9,632 \\ - 3,785 \\ \hline 5,847 \end{array}$$

$$\begin{array}{r} 3. \quad 8,054 \\ - 1,867 \\ \hline 6,187 \end{array}$$

$$\begin{array}{r} 4. \quad 4,000 \\ - 2,945 \\ \hline 1,055 \end{array}$$

$$\begin{array}{r} 5. \quad 8,531 \\ - 7,624 \\ \hline 907 \end{array}$$

$$\begin{array}{r} 6. \quad 8,006 \\ - 4,692 \\ \hline 3,314 \end{array}$$

$$\begin{array}{r} 7. \quad 9,040 \\ - 5,712 \\ \hline 3,328 \end{array}$$

$$\begin{array}{r} 8. \quad 6,000 \\ - 5,036 \\ \hline 964 \end{array}$$

$$\begin{array}{r} 9. \quad 7,180 \\ - 4,385 \\ \hline 2,795 \end{array}$$

$$\begin{array}{r} 10. \quad 6,478 \\ - 3,579 \\ \hline 2,899 \end{array}$$

$$\begin{array}{r} 11. \quad 9,490 \\ - 5,512 \\ \hline 3,978 \end{array}$$

$$\begin{array}{r} 12. \quad 5,000 \\ - 3,609 \\ \hline 1,391 \end{array}$$

Solve.*Show your work.*

13. A cross-country automobile rally is 1,025 kilometers long. At a stopping place, the leader had traveled 867 kilometers. How far away was the finish line?

158 kilometers

14. A census counted 5,407 people in Marina's home town. If 3,589 are males, how many are females?

1,818 females

15. A construction company is building a stone wall. The finished wall will contain 5,000 stones. So far, 1,487 stones have been placed. How many stones have not been placed?

3,513 stones

Remembering

Use any method to add.

$$\begin{array}{r} 1. \quad 6,022 \\ + 1,988 \\ \hline 8,010 \end{array}$$

$$\begin{array}{r} 2. \quad 4,586 \\ + 1,693 \\ \hline 6,279 \end{array}$$

$$\begin{array}{r} 3. \quad 8,374 \\ + 3,707 \\ \hline 12,081 \end{array}$$

The table shows the amount of litter collected from parks across a city on Earth Day each year. Use the data in the table to help answer the following questions.

4. How much litter was collected altogether in 2007 and 2008?
20,397 pounds
5. Which two years had a combined litter collection of 23,456 pounds?
2008 and 2010

Litter Collected on Earth Day

Year	Pounds of Litter
2007	8,293
2008	12,104
2009	15,877
2010	11,352

Write an equation that shows an estimate of each answer. Then write the exact answer. *Estimates may vary.*

6. $495 + 812$ estimate: $500 + 800 = 1,300$; exact: $1,307$
7. $7,203 + 299$ estimate: $7,200 + 300 = 7,500$; exact: $7,502$
8. $2,859 + 6,017$ estimate: $3,000 + 6,000 = 9,000$; exact: $8,876$

9. **Stretch Your Thinking** Bridget ungrouped 5,000 as shown. Use your understanding of place value to explain how the ungrouped number is equal to 5,000.
Possible answer: since 10 ones is equal to 1 ten, the ungrouped number is $4,000 + 900 + 90 + 10$, which is 5,000.

$$\begin{array}{r} 4 \ 9 \ 9 \ 10 \\ \cancel{5,000} \\ - 2,896 \\ \hline \end{array}$$

Homework

**Subtract. Then use addition to check the subtraction.
Show your work.**

1. $1,400 - 238 = \underline{1,162}$

2. $1,900 - 1,238 = \underline{662}$

Check: $\underline{1,162 + 238 = 1,400}$

Check: $\underline{662 + 1,238 = 1,900}$

3. $4,620 - 1,710 = \underline{2,910}$

4. $5,243 - 2,454 = \underline{2,789}$

Check: $\underline{2,910 + 1,710 = 4,620}$

Check: $\underline{2,789 + 2,454 = 5,243}$

5. $3,142 - 1,261 = \underline{1,881}$

6. $2,375 - 896 = \underline{1,479}$

Check: $\underline{1,881 + 1,261 = 3,142}$

Check: $\underline{1,479 + 896 = 2,375}$

Solve.

Show your work.

7. A school library has 1,058 books in its collection.
The town library has 4,520 books in its collection.
How many books are there altogether?

5,578 books

8. A town official knows how many books the town library has and how many books both libraries have altogether. She wants to know how many books the school library has. How can she use subtraction to find the answer?

Subtract 4,520 from 5,578; $5,578 - 4520 = 1,058$

Remembering

Copy each exercise, lining up the places correctly. Then add.

$$\begin{array}{r} 1. \quad 32,418 + 508,182 \\ \quad \quad 540,600 \end{array}$$

$$\begin{array}{r} 2. \quad 734,150 + 60,382 \\ \quad \quad 794,532 \end{array}$$

Solve. Estimates may vary.

Show your work.

3. The entire fourth grade is made up of 102 boys and 86 girls. *About* how many students are in the fourth grade altogether?

100 + 90; about 190 students

Exactly how many students are in the fourth grade altogether?

188 students

Subtract. Show your new groups.

$$\begin{array}{r} 4. \quad 5,000 \\ - 2,583 \\ \hline 2,417 \end{array}$$

$$\begin{array}{r} 5. \quad 8,259 \\ - 3,716 \\ \hline 4,543 \end{array}$$

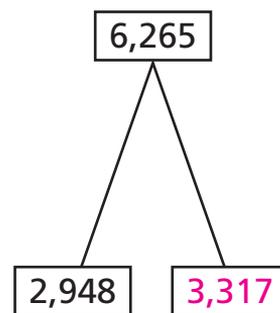
$$\begin{array}{r} 6. \quad 2,081 \\ - 1,733 \\ \hline 348 \end{array}$$

7. **Stretch Your Thinking** What is the unknown number in this break-apart drawing? List all the addition and subtraction problems for the drawing.

The missing part is 3,317. $2,948 + 3,317 = 6,265$;

$3,317 + 2,948 = 6,265$; $6,265 - 2,948 = 3,317$;

$6,265 - 3,317 = 2,948$.



Homework**Subtract.**

$$\begin{array}{r} 1. \quad 71,824 \\ - 36,739 \\ \hline 35,085 \end{array}$$

$$\begin{array}{r} 2. \quad 960,739 \\ - 894,045 \\ \hline 66,694 \end{array}$$

$$\begin{array}{r} 3. \quad 665,717 \\ - 82,824 \\ \hline 582,893 \end{array}$$

$$\begin{array}{r} 4. \quad 372,608 \\ - 57,425 \\ \hline 315,183 \end{array}$$

$$\begin{array}{r} 5. \quad 597,603 \\ - 404,980 \\ \hline 192,623 \end{array}$$

$$\begin{array}{r} 6. \quad 614,702 \\ - 539,508 \\ \hline 75,194 \end{array}$$

$$\begin{array}{r} 7. \quad 724,359 \\ - 99,068 \\ \hline 625,291 \end{array}$$

$$\begin{array}{r} 8. \quad 394,280 \\ - 56,473 \\ \hline 337,807 \end{array}$$

In an experiment, a scientist counted how many bacteria grew in several labeled dishes. The table shows how many bacteria were in each dish.

Dish	Number of Bacteria
A	682,169
B	694,154
C	57,026
D	150,895
E	207,121

Solve. Estimate to check.*Show your work.*

9. What was the difference between the greatest number of bacteria and the least number of bacteria?

637,128 bacteria

10. How many more bacteria were in dish A than in dish D?

531,274 more bacteria

11. How many fewer bacteria were in dish E than in the combined dish C and dish D?

800 fewer bacteria

Remembering

Write an equation that shows an estimate of each answer. Then write the exact answer. **Estimates may vary.**

- $503 + 69$ estimate: $500 + 70 = 570$; exact: 572
- $2,825 + 212$ estimate: $2,800 + 200 = 3,000$; exact: $3,037$
- $6,190 + 3,858$ estimate: $6,000 + 4,000 = 10,000$; exact: $10,048$

Subtract. Show your new groups.

$$\begin{array}{r} 4. \quad 8,760 \\ - 1,353 \\ \hline 7,407 \end{array}$$

$$\begin{array}{r} 5. \quad 6,000 \\ - 5,258 \\ \hline 742 \end{array}$$

$$\begin{array}{r} 6. \quad 5,060 \\ - 2,175 \\ \hline 2,885 \end{array}$$

Subtract. Then use addition to check the subtraction. Show your work.

$$7. \quad 6,355 - 891 = \underline{5,464} \qquad 8. \quad 8,326 - 1,425 = \underline{6,901}$$

Check: $\underline{5,464 + 891 = 6,355}$

Check: $\underline{6,901 + 1,425 = 8,326}$

9. **Stretch Your Thinking** Write an addition word problem in which the estimated sum is 14,000.

Possible answer: Brandon walks 2,750 steps on Tuesday and 4,218 steps on Wednesday. He walks 6,854 steps on Friday. About how many steps does Brandon walk during these three days?

Homework

Solve each problem.

Show your work.

1. Mr. Chase is ordering 249 pencils, 600 sheets of paper, and 190 erasers. How many more sheets of paper than pencils and erasers altogether is Mr. Chase ordering?

161 more sheets of paper

2. There were 623 people at the concert on Friday. On Saturday, 287 more people attended the concert than attended on Friday. How many people in all attended the concert on Friday and Saturday?

1,533 people

Add or subtract.

$$\begin{array}{r} 3. \quad 695 \\ + 487 \\ \hline 1,182 \end{array}$$

$$\begin{array}{r} 4. \quad 8,452 \\ - 5,938 \\ \hline 2,514 \end{array}$$

$$\begin{array}{r} 5. \quad 5,895 \\ + 9,727 \\ \hline 15,622 \end{array}$$

$$\begin{array}{r} 6. \quad 49,527 \\ - 26,088 \\ \hline 23,439 \end{array}$$

$$\begin{array}{r} 7. \quad 86,959 \\ - 38,486 \\ \hline 48,473 \end{array}$$

$$\begin{array}{r} 8. \quad 39,458 \\ + 98,712 \\ \hline 138,170 \end{array}$$

$$\begin{array}{r} 9. \quad 286,329 \\ + 394,065 \\ \hline 680,394 \end{array}$$

$$\begin{array}{r} 10. \quad 708,623 \\ - 421,882 \\ \hline 286,741 \end{array}$$

$$\begin{array}{r} 11. \quad 952,774 \\ - 613,386 \\ \hline 339,388 \end{array}$$

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 7,982 \\ - 3,517 \\ \hline 4,465 \end{array}$$

$$\begin{array}{r} 2. \quad 600,000 \\ - 399,410 \\ \hline 200,590 \end{array}$$

$$\begin{array}{r} 3. \quad 138,925 \\ + 47,316 \\ \hline 186,241 \end{array}$$

Subtract. Then use addition to check the subtraction. Show your work.

$$4. \quad 4,652 - 1,593 = \underline{\quad 3,059 \quad}$$

$$5. \quad 30,000 - 26,931 = \underline{\quad 3,069 \quad}$$

$$6. \quad 896,581 - 355,274 = \underline{\quad 541,307 \quad}$$

Check:

$$\underline{3,059 + 1,593 = 4,652}$$

Check:

$$\underline{3,069 + 26,931 = 30,000}$$

Check:

$$\underline{541,307 + 355,274 = 896,581}$$

Subtract.

$$7. \quad 731,285 - 369,114 = \underline{\quad 362,171 \quad} \quad 8. \quad 645,803 - 52,196 = \underline{\quad 593,607 \quad}$$

9. **Stretch Your Thinking** Write a two-step problem in which the answer is 130.

Possible answer: Jennie sells 348 family passes for the Science Center in January. During the month of February, she sells 272 family passes. How many passes will Jennie need to sell in March to reach her goal of selling 750 family passes within three months?

Homework

Add or subtract.

1. $12,673 - 9,717 = \underline{2,956}$ 2. $8,406 + 45,286 = \underline{53,692}$ 3. $2,601 - 1,437 = \underline{1,164}$

Answer each question about the information in the table.

Area of the Countries of Central America

Country	Area (square miles)
Belize	8,867
Costa Rica	19,730
El Salvador	8,124
Guatemala	42,042
Honduras	43,278
Nicaragua	49,998
Panama	30,193

4. What is the total area of Guatemala and Honduras?

85,320 square miles

Show your work.

5. Which two countries have the least area? What is the sum of their areas?

Belize and El Salvador; 16,991 square miles

6. Which is greater: the area of Nicaragua or the total area of Costa Rica and Panama?

The area of Nicaragua is greater.

7. How much greater is the area of Honduras than the area of Guatemala?

The area of Honduras is 1,236 square miles greater.

Remembering

Subtract. Then use addition to check the subtraction.

1. $1,500 - 705 = \underline{795}$

2. $9,523 - 8,756 = \underline{767}$

Check: $\underline{795 + 705 = 1,500}$

Check: $\underline{767 + 8,756 = 9,523}$

The table shows how many fans attended a team's baseball games at the start of the season. Solve.

Estimate to check.

3. How many fewer people attended Game 4 than Game 5?

10,881 fewer people

estimate: $46,000 - 35,000 = 11,000$

4. What was the difference between the greatest number of fans and the least number at a game?

58,465 people

estimate: $68,000 - 10,000 = 58,000$

Game	Fans
1	68,391
2	42,908
3	9,926
4	35,317
5	46,198

Add or subtract.

5.
$$\begin{array}{r} 7,452 \\ + 3,801 \\ \hline 11,253 \end{array}$$

6.
$$\begin{array}{r} 2,155 \\ + 5,890 \\ \hline 8,045 \end{array}$$

7.
$$\begin{array}{r} 293,635 \\ - 178,098 \\ \hline 115,537 \end{array}$$

8. **Stretch Your Thinking** The equation $32,904 + m = 61,381$ shows that the number of females plus the number of males, m , living in a certain city equals the total population. Write a subtraction equation that represents the same situation. How many males live in this city?

Possible equation: $61,381 - 32,904 = m$.

There are 28,477 males in this city.

Homework

Companies often use bar graphs to present information to the media or stockholders. Data may show how attendance or profits vary at different times of the year, or compare the successes of different divisions or quarters of the year.

1. Research attendance numbers for your favorite amusement park, sporting team, or movie during five different periods of time. Complete the table with your information.

Check students' tables.	

2. Use the grid below to graph the data in your table.

Check students' graphs.

Remembering

Subtract.

$$1. 958,299 - 63,419 = \underline{894,880}$$

$$2. 9,523 - 8,756 = \underline{767}$$

Add or subtract.

$$3. \begin{array}{r} 5,191 \\ + 273 \\ \hline 5,464 \end{array}$$

$$4. \begin{array}{r} 13,687 \\ + 25,137 \\ \hline 38,824 \end{array}$$

$$5. \begin{array}{r} 758,194 \\ - 6,029 \\ \hline 752,165 \end{array}$$

Answer each question about the information in the table.

6. What is the total number of miles the trucker drove in the last 2 years?

181,578 miles

7. Which is greater, the increase in miles driven between 1998 and 1999 or between 1999 and 2000? What is that increase?

the increase between 1998 and 1999;
42,103 miles

Miles Driven by a Trucker

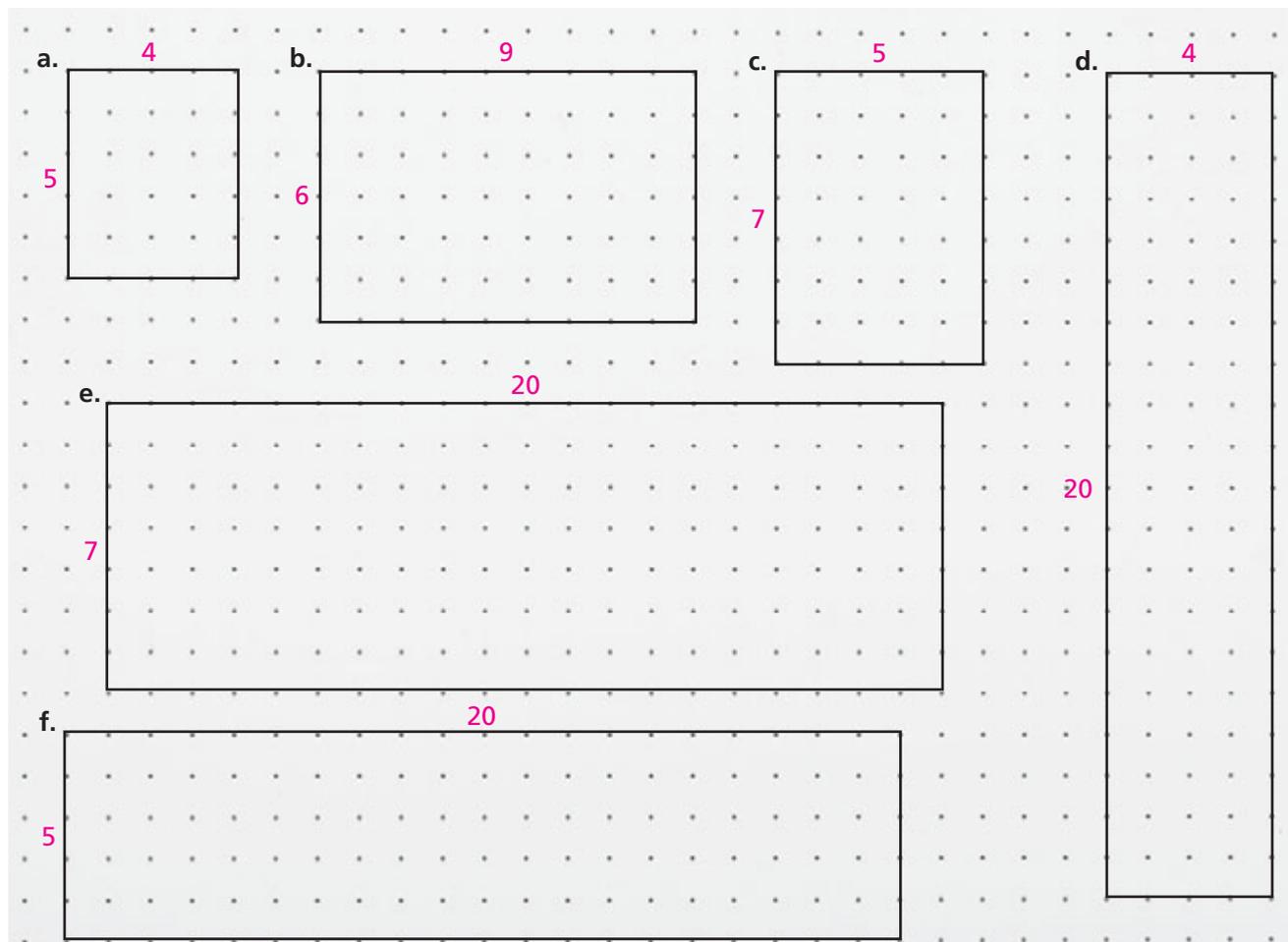
Year	Miles
1998	75,288
1999	117,391
2000	126,304
2001	87,192
2002	94,386

8. **Stretch Your Thinking** Look at the trucking data in the table for Exercises 6 and 7. How would you round the data to make a bar graph? What scale would you use?

Possible answer: Round the data to the nearest ten thousand and use a scale from 70,000 to 130,000.

Homework

1. Label the sides of each rectangle.



2. Write the equation representing the area of each rectangle shown above.

a. $5 \times 4 = 20$

b. $6 \times 9 = 54$

c. $7 \times 5 = 35$

d. $20 \times 4 = 80$

e. $7 \times 20 = 140$

f. $5 \times 20 = 100$

Find the area (in square units) of a rectangle with the given dimensions.

3. 3×5 15 sq units

4. 3×50 150 sq units

5. 30×5 150 sq units

Remembering

Read and write each number in expanded form.

1. 71 70 + 1

2. 298 200 + 90 + 8

3. 5,627 5,000 + 600 + 20 + 7

4. 3,054 3,000 + 50 + 4

Read and write each number in standard form.

5. $500 + 80 + 3$

583

6. $9,000 + 200 + 40 + 1$

9,241

7. eight hundred seventeen

817

8. one thousand, six hundred forty-six

1,646

Read and write each number in word form.

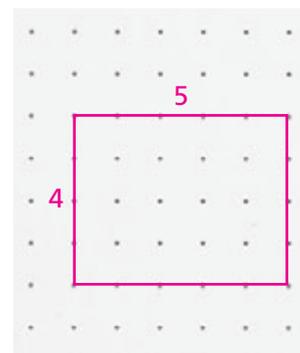
9. $90 + 7$ ninety-seven

10. $300 + 10 + 2$ three hundred twelve

11. $4,000 + 100 + 80 + 5$ four thousand, one hundred eighty-five

12. $8,000 + 700 + 6$ eight thousand, seven hundred six

13. **Stretch Your Thinking** Emmy planted onion bulbs in her backyard garden, giving each bulb one square foot of space. She arranged the onion bulbs in a rectangular array of 4 rows with 5 in each row. Make a sketch of Emmy's onion patch. How many onion bulbs did she plant? What is the area of the onion patch? Identify three other rectangular arrangements Emmy could have used to plant these onion bulbs.



Possible drawing shown. Emmy planted 20 onion bulbs. The patch is 20 square feet. Possible answer: she could have planted 5 rows with 4 onion bulbs in each row, or 10 rows with 2 onion bulbs in each row, or 2 rows with 10 onion bulbs in each row.

Homework

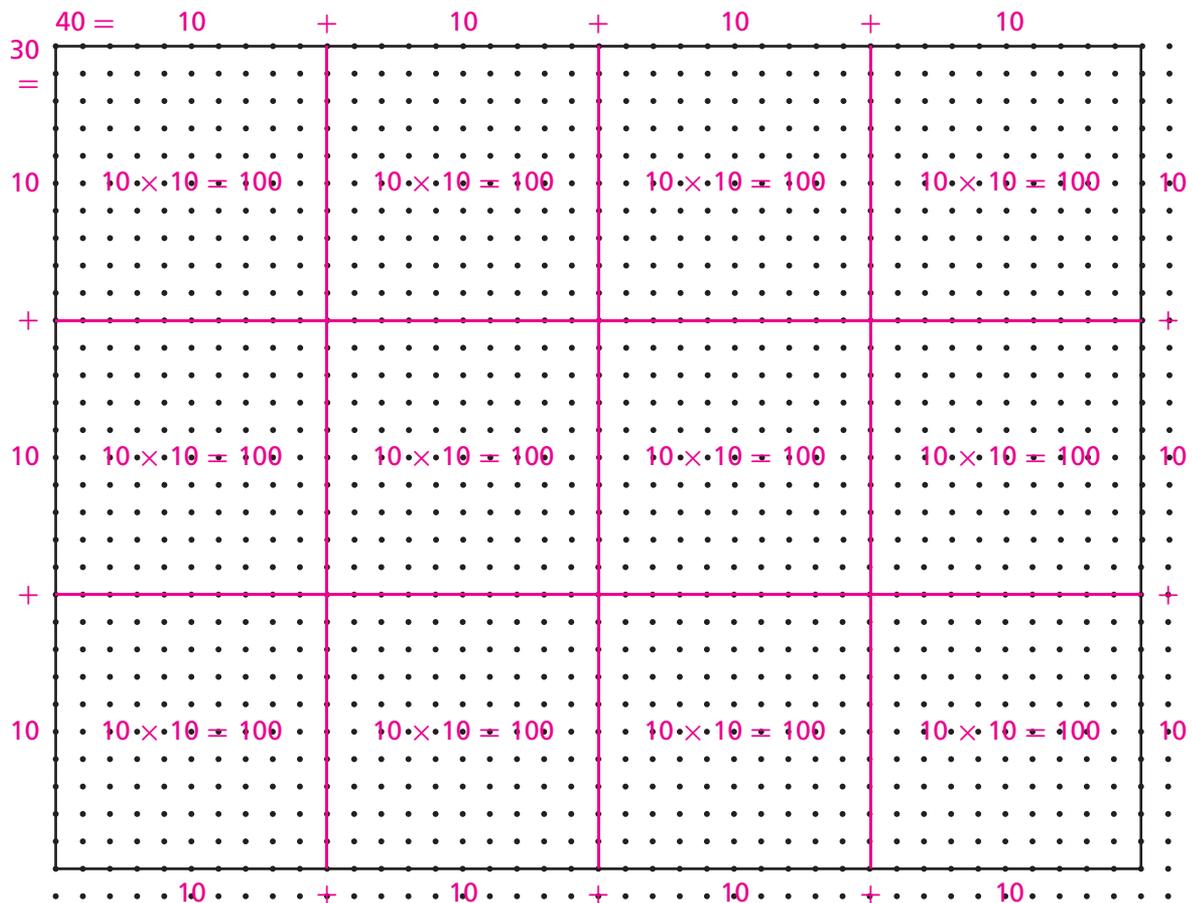
Solve each problem.

1. $10 \times \underline{\quad 3 \quad} = 3 \text{ tens}$

2. $10 \times 6 \text{ tens} = \underline{\text{6 hundreds, or 600}}$

Follow the directions.

3. Divide the 30×40 rectangle into 10-by-10 squares of 100 to help find the area.



4. Complete the steps to factor the tens.

$$30 \times 40 = (\underline{\quad 3 \quad} \times 10) \times (\underline{\quad 4 \quad} \times 10)$$

$$= (\underline{\quad 3 \quad} \times \underline{\quad 4 \quad}) \times (10 \times 10)$$

$$= \underline{\quad 12 \quad} \times 100$$

$$= \underline{\quad 1,200 \quad}$$

5. What is the area of the 30×40 rectangle, in square units?

1,200 square units

Remembering

Write the number of thousands and the number of hundreds in each number.

1. 4,672

 4 thousands 6 hundreds

2. 1,023

 1 thousands 0 hundreds

3. 610

 0 thousands 6 hundreds

Read and write each number in expanded form.

4. twenty-five thousand, three hundred fifty-one

 20,000 + 5,000 + 300 + 50 + 1

5. five hundred six thousand, five hundred ninety-eight

 500,000 + 6,000 + 500 + 90 + 8

6. nine hundred thirteen thousand, eight hundred twenty-seven

 900,000 + 10,000 + 3,000 + 800 + 20 + 7

Find the area (in square units) of a rectangle with the given dimensions.

7. 4×6 24 sq units

8. 4×60 240 sq units

9. 9×2 18 sq units

10. 90×2 180 sq units

11. 3×7 21 sq units

12. 70×3 210 sq units

13. **Stretch Your Thinking** Li is using place value to multiply 90×30 .

$$\begin{aligned} 90 \times 30 &= (9 \times 10) \times (3 \times 10) \\ &= (9 \times 3) \times (10 \times 10) \\ &= 27 \times 10 \\ &= 270 \end{aligned}$$

Is Li's answer correct? Explain.

Li multiplied 10×10 and wrote 10, but 10 tens is 100.

The correct answer is 27 hundreds, which is 2,700.

Homework

Find each product by factoring the tens. Draw rectangles if you need to.

1. 6×2 , 6×20 , and 6×200

$12; 12 \times 10 = 120;$

$12 \times 100 = 1,200$

2. 4×8 , 4×80 , and 4×800

$32; 32 \times 10 = 320;$

$32 \times 100 = 3,200$

3. 5×5 , 5×50 , and 5×500

$25; 25 \times 10 = 250;$

$25 \times 100 = 2,500$

4. 5×9 , 50×9 , and 500×9

$45; 45 \times 10 = 450;$

$45 \times 100 = 4,500;$

5. 6×5 , 60×5 , and 60×50

$30; 30 \times 10 = 300;$

$30 \times 100 = 3,000$

6. 7×6 , 70×6 , and 70×60

$42; 42 \times 10 = 420;$

$42 \times 100 = 4,200$

On a sheet of grid paper, draw two different arrays of connected squares for each total. Label the sides and write the multiplication equation for each of your arrays.

7. 18 squares

Answers may vary. Possible equations: $2 \times 9 = 18;$

$1 \times 18 = 18; 3 \times 6 = 18$

8. 20 squares

Answers may vary. Possible equations: $1 \times 20 = 20;$

$2 \times 10 = 20; 4 \times 5 = 20$

9. 24 squares

Answers may vary. Possible equations: $1 \times 24 = 24;$

$2 \times 12 = 24; 3 \times 8 = 24; 4 \times 6 = 24$

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 2,728 \\ + 7,245 \\ \hline 9,973 \end{array}$$

$$\begin{array}{r} 2. \quad 83,054 \\ + 1,496 \\ \hline 84,550 \end{array}$$

$$\begin{array}{r} 3. \quad 27,300 \\ - 9,638 \\ \hline 17,662 \end{array}$$

Use any method to add.

$$\begin{array}{r} 4. \quad 4,335 \\ + 2,694 \\ \hline 7,029 \end{array}$$

$$\begin{array}{r} 5. \quad 3,806 \\ + 8,129 \\ \hline 11,935 \end{array}$$

$$\begin{array}{r} 6. \quad 6,401 \\ + 7,763 \\ \hline 14,164 \end{array}$$

$$\begin{array}{r} 7. \quad 9,826 \\ + 8,531 \\ \hline 18,357 \end{array}$$

Solve each problem.

$$8. \quad 10 \times \underline{6} = 6 \text{ tens}$$

$$9. \quad 10 \times 9 = \underline{9 \text{ tens, or } 90}$$

$$10. \quad \underline{2} \times 10 = 2 \text{ tens}$$

$$11. \quad \underline{5} \times 10 = 5 \text{ tens}$$

$$12. \quad 10 \times 4 \text{ tens} = \underline{4 \text{ hundreds, or } 400}$$

$$13. \quad 10 \times \underline{7 \text{ tens, or } 70} = 7 \text{ hundreds}$$

$$14. \quad 10 \times \underline{8} = 8 \text{ tens}$$

$$15. \quad \underline{3} \times 10 = 3 \text{ tens}$$

16. Stretch Your Thinking Lucas says that since 40×70 and 60×50 both have factors with a total of two zeros, they will both have products with a total of two zeros. Is he correct? Explain.

No, Lucas is not correct. Since $6 \times 5 = 30$, which already has a zero, the total number of zeros in the product of 60×50 is three, not two.

Homework

Draw a rectangle. Find the tens product, the ones product, and the total product. The first one is done for you.

1. 5×39

$$39 = \begin{array}{|c|c|} \hline 30 & + 9 \\ \hline \end{array}$$

5	$5 \times 30 = 150$	$5 \times 9 = 45$
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$$\begin{array}{r} 150 \\ + 45 \\ \hline 195 \end{array}$$

2. 7×32

$$7 \begin{array}{|c|c|} \hline 30 & + 2 \\ \hline \end{array}$$

7	$7 \times 30 = 210$	$7 \times 2 = 14$
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$$\begin{array}{r} 210 \\ + 14 \\ \hline 224 \end{array}$$

3. 9×54

$$9 \begin{array}{|c|c|} \hline 50 & + 4 \\ \hline \end{array}$$

9	$9 \times 50 = 450$	$9 \times 4 = 36$
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$$\begin{array}{r} 450 \\ + 36 \\ \hline 486 \end{array}$$

4. 3×47

$$3 \begin{array}{|c|c|} \hline 40 & + 7 \\ \hline \end{array}$$

3	$3 \times 40 = 120$	$3 \times 7 = 21$
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$$\begin{array}{r} 120 \\ + 21 \\ \hline 141 \end{array}$$

Solve each problem.

Show your work.

5. Maria's flower garden is 14 feet long and 3 feet wide. How many square feet is her garden?

42 square feet

6. Maria planted 15 trays of flowers. Each tray had 6 flowers in it. How many flowers did she plant?

90 flowers

7. Write and solve a multiplication word problem about your family.

Answers will vary.

Remembering

Round each number to the nearest hundred.

1. 283 300

2. 729 700

3. 954 1,000

Round each number to the nearest thousand.

4. 4,092 4,000

5. 6,550 7,000

6. 5,381 5,000

Compare using $>$, $<$, or $=$.

7. 92,800 $<$ 92,830

8. 165,000 $>$ 156,000

9. 478,390 $=$ 478,390

10. 736,218 $>$ 89,479

Find each product by factoring the tens. Draw rectangles if you need to.

11. 3×2 , 3×20 , and 3×200

6 ; $6 \times 10 = 60$;

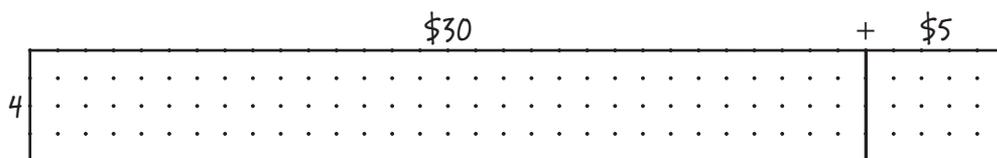
$6 \times 100 = 600$

12. 7×3 , 7×30 , and 7×300

21 ; $21 \times 10 = 210$;

$21 \times 100 = 2,100$

13. **Stretch Your Thinking** Write a word problem that could be solved using the rectangle model shown. Then solve the problem by finding the tens product, the ones product, and the total product.



Word problems that could be solved with $\$35 \times 4$

will vary. Tens product: $\$30 \times 4 = \120 . Ones product:

$\$5 \times 4 = \20 . Total product: $\$120 + \$20 = \$140$.

Homework

Estimate each product. Solve to check your estimate.

1. 4×26

$4 \times 30 = 120;$

$4 \times 26 = 104$

2. 5×63

$5 \times 60 = 300;$

$5 \times 63 = 315$

3. 7×95

$7 \times 100 = 700;$

$7 \times 95 = 665$

4. 4×84

$4 \times 80 = 320;$

$4 \times 84 = 336$

5. 2×92

$2 \times 90 = 180;$

$2 \times 92 = 184$

6. 3×76

$3 \times 80 = 240;$

$3 \times 76 = 228$

Estimate the answers. Then solve each problem.

Show your work.

7. The Bicycling Club is participating in a cycling event. There are 65 teams registered for the event. Each team has a total of 8 cyclists. How many cyclists will participate in the event?

$70 \times 8 = 560; 65 \times 8 = 520 \text{ cyclists}$

8. The theater group is making costumes for their play. There are 9 costume changes for each of the 23 performers. How many costumes does the theater group need?

$9 \times 20 = 180, 9 \times 23 = 207 \text{ costumes}$

9. The town library shows 6 different books each day in the display case. The library is open 27 days in one month. How many books does the library need for the display?

$30 \times 6 = 180, 27 \times 6 = 162 \text{ books}$

Write and solve a multiplication word problem.

10. **Word problems will vary.**

Remembering

Estimate each sum. Then solve to check your estimate. **Estimates may vary.**

1. $288 + 609$ estimate: $300 + 600 = 900$; exact: 897

Solve. **Estimates may vary.**

Show your work.

2. During one weekend, a museum had 7,850 visitors on Saturday and 5,759 visitors on Sunday.

About how many visitors were there that weekend?

$8,000 + 6,000$; about 14,000 visitors

Exactly how many visitors were there that weekend?

13,609 visitors

Draw a rectangle model. Find the tens product, the ones product, and the total product.

3. 7×42

	40	+	2
7	$7 \times 40 = 280$		$7 \times 2 = 14$

$$\begin{array}{r} 280 \\ + 14 \\ \hline 294 \end{array}$$

4. 5×67

	60	+	7
5	$5 \times 60 = 300$		$5 \times 7 = 35$

$$\begin{array}{r} 300 \\ + 35 \\ \hline 335 \end{array}$$

5. **Stretch Your Thinking** Marcia says she can use *rounding* to find the exact product of 6×75 . She says that since 75 is halfway between 7 tens and 8 tens, the exact product of 6×75 must be halfway between 6×70 and 6×80 . Is she correct? Explain.

The way students show the work may vary.

$6 \times 70 = 6 \times 7 \times 10$

$6 \times 80 = 6 \times 8 \times 10$

$= 42 \times 10$

$= 48 \times 10$

$= 420$

$= 480$

Halfway between 420 and 480 is 450. The product

of 6×75 is the tens product 6×70 plus the

ones product 6×5 , which is 450. So, Marcia is correct.

Homework

Use the Place Value Sections Method to solve the problem. Complete the steps.

1. $9 \times 86 = \underline{774}$

$$86 = 80 + 6$$

$9 \times 80 = 720$	$9 \times 6 = 54$
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$$\begin{array}{r} 720 \\ + 54 \\ \hline 774 \end{array}$$

Use the Expanded Notation Method to solve the problem. Complete the steps.

2. $4 \times 67 = \underline{268}$

$$67 = 60 + 7$$

--	--

$$67 = 60 + 7$$

$$\begin{array}{r} 4 \times 60 = 240 \\ 4 \times 7 = 28 \\ \hline 268 \end{array}$$

Use any method to solve. Draw a rectangular model to represent the problem.

Show your work.

3. Natalia read her new book for 45 minutes each day for one week. How many minutes did she read after 7 days?

315 minutes; Possible drawing is shown.

$$45 = 40 + 5$$

--	--

$$\begin{array}{r} 45 = 40 + 5 \\ \times 7 = 7 \\ \hline 7 \times 40 = 280 \\ 7 \times 5 = 35 \\ \hline 315 \end{array}$$

Remembering

The table shows the approximate height of the world's five tallest mountain peaks. Use the data in the table to help answer the following questions.

1. How tall are the two tallest mountain peaks combined?

57,285 feet

2. Which two mountain peaks combined are 56,190 feet tall?

K2 and Lhotse

Mountain	Height (in feet)
Everest	29,035
K2	28,250
Kangchenjunga	28,169
Lhotse	27,940
Makalu	27,766

Subtract.

3. $586,720 - 293,415 =$ 293,305

4. $917,336 - 904,582 =$ 12,754

Estimate each product. Solve to check your estimate.

5. 5×39

$5 \times 40 = 200;$

$5 \times 39 = 195$

6. 6×64

$6 \times 60 = 360;$

$6 \times 64 = 384$

7. 9×23

$9 \times 20 = 180;$

$9 \times 23 = 207$

8. 7×48

$7 \times 50 = 350;$

$7 \times 48 = 336$

9. **Stretch Your Thinking** Explain how the Expanded Notation Method is used to multiply 82×3 .

First, the factor 82 is written in expanded form

as $80 + 2$. Then each of these parts is multiplied by

the other factor, 3. So, $80 \times 3 = 240$ and $2 \times 3 = 6$.

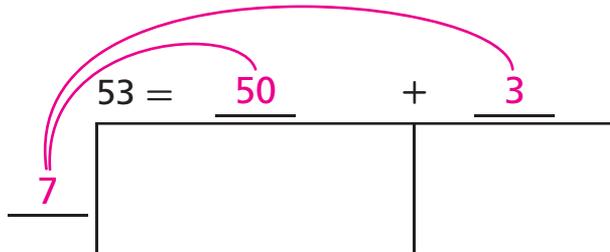
Finally, 240 and 6 are added to get the total

product of 82×3 , which is 246.

Homework

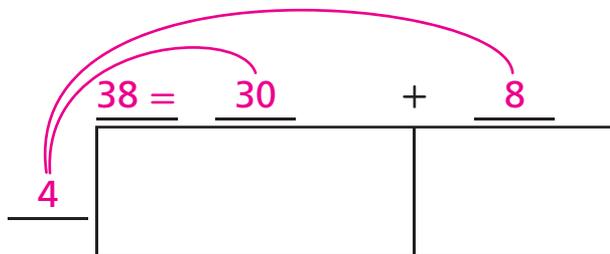
Use the Algebraic Notation Method to solve each problem. Complete the steps.

1. $7 \cdot 53$ 371



$$\begin{aligned} 7 \cdot 53 &= \underline{7} \cdot (\underline{50} + \underline{3}) \\ &= 350 + 21 \\ &= 371 \end{aligned}$$

2. $4 \cdot 38$ 152



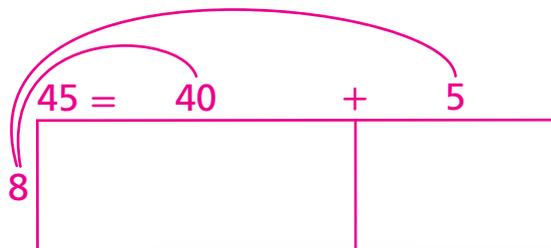
$$\begin{aligned} 4 \cdot 38 &= \underline{4} \cdot (\underline{30} + \underline{8}) \\ &= \underline{120} + \underline{32} \\ &= \underline{152} \end{aligned}$$

Draw an area model and use the Algebraic Notation Method to solve the problem.

Show your work.

3. Mr. Henderson needs to get plywood to build his flatbed trailer. The flatbed is 8 feet by 45 feet. What is the area of the flatbed Mr. Henderson needs to cover with plywood?

360 square feet



$$\begin{aligned} 8 \cdot 45 &= \underline{8} \cdot (\underline{40} + \underline{5}) \\ &= 320 + 40 \\ &= 360 \end{aligned}$$

Remembering

Subtract. Show your new groups.

$$\begin{array}{r} 1. \quad 4,000 \\ - 1,946 \\ \hline 2,054 \end{array}$$

$$\begin{array}{r} 2. \quad 8,441 \\ - 7,395 \\ \hline 1,046 \end{array}$$

$$\begin{array}{r} 3. \quad 9,340 \\ - 8,614 \\ \hline 726 \end{array}$$

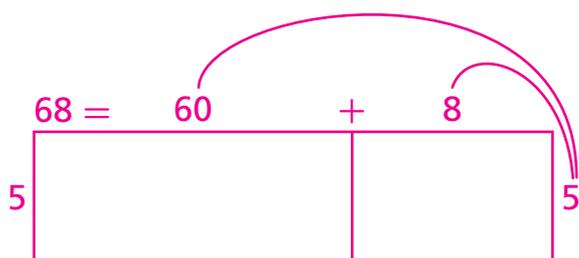
$$\begin{array}{r} 4. \quad 1,587 \\ - 1,200 \\ \hline 387 \end{array}$$

$$\begin{array}{r} 5. \quad 6,193 \\ - 3,295 \\ \hline 2,898 \end{array}$$

$$\begin{array}{r} 6. \quad 4,006 \\ - 2,631 \\ \hline 1,375 \end{array}$$

Use the Expanded Notation Method to solve the problem.
Complete the steps.

7. 5×68 340



$$\begin{array}{r} 68 = 60 + 8 \\ \times 5 = \quad 5 \\ \hline 5 \times 60 = 300 \\ 5 \times 8 = 40 \\ \hline 340 \end{array}$$

8. **Stretch Your Thinking** Jenna made 6 bracelets using 32 beads each. Kayla made 7 bracelets using 29 beads each. Who used more beads? Use the Distributive Property to solve the problem.

Jenna used 6×32 beads and Kayla used 7×29 beads.

$$6 \cdot 32 = 6 \cdot (30 + 2)$$

$$7 \cdot 29 = 7 \cdot (20 + 9)$$

$$= 6 \cdot 30 + 6 \cdot 2$$

$$= 7 \cdot 20 + 7 \cdot 9$$

$$= 180 + 12$$

$$= 140 + 63$$

$$= 192$$

$$= 203$$

Since 203 is greater than 192, Kayla used more beads.

Homework

Use any method to solve. Sketch a rectangle model, if you need to.

1. 7×62 434

2. 6×63 378

3. 6×82 492

Drawings will vary.

4. 57×7 399

5. 5×76 380

6. 4×65 260

7. 7×83 581

8. 36×9 324

9. 27×8 216

Solve each problem.

Show your work.

10. 94 people are sitting down to a fancy six-course meal. The first course is soup, which only needs a spoon. The rest of the courses each need fresh forks. How many forks will be used?

$94 \times 5 = 470$ forks

11. Leo uses plastic letters to make signs. A chain store asks Leo to put signs in front of their 63 stores that say "SALE: HALF PRICE ON ALL DRESSES." How many plastic "S" letters will Leo need?

$63 \times 4 = 252$ plastic "S" letters

Remembering

Subtract. Then use addition to check the subtraction.

Show your work.

$$1. 6,459 - 921 = \underline{5,538}$$

$$\text{Check: } \underline{5,538 + 921 = 6,459}$$

$$2. 5,603 - 3,284 = \underline{2,319}$$

$$\text{Check: } \underline{2,319 + 3,284 = 5,603}$$

$$3. 7,863 - 2,734 = \underline{5,129}$$

$$\text{Check: } \underline{5,129 + 2,734 = 7,863}$$

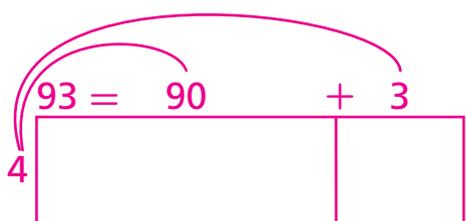
$$4. 9,582 - 1,447 = \underline{8,135}$$

$$\text{Check: } \underline{8,135 + 1,447 = 9,582}$$

Use the Algebraic Notation Method to solve each problem.

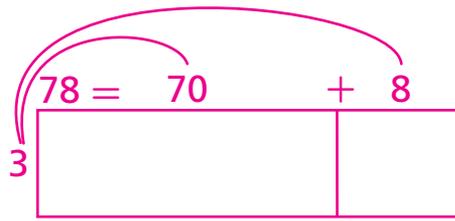
Complete the steps.

$$5. 4 \cdot 93 \underline{372}$$



$$\begin{aligned} 4 \cdot 93 &= 4 \cdot (90 + 3) \\ &= 360 + 12 \\ &= 372 \end{aligned}$$

$$6. 3 \cdot 78 \underline{234}$$



$$\begin{aligned} 3 \cdot 78 &= 3 \cdot (70 + 8) \\ &= 210 + 24 \\ &= 234 \end{aligned}$$

7. **Stretch Your Thinking** Xander says that the Place Value Sections Method, the Expanded Notation Method, and the Algebraic Notation Method of multiplying a one-digit number by a two-digit number are pretty much the same.

Do you agree or disagree? Explain. **Answers will vary.**

I agree. Even though the steps for recording the multiplication look a little different with each method, they all show partial products of the one-digit number times the tens and ones of the two-digit number, then the sum of partial products. All three methods also relate to the same rectangular area model.

Homework

Solve, using any numerical method. Use rounding and estimating to see if your answer makes sense. **Methods will vary.**

$$\begin{array}{r} 1. \quad 35 \\ \times 9 \\ \hline 315 \end{array}$$

$$\begin{array}{r} 2. \quad 79 \\ \times 5 \\ \hline 395 \end{array}$$

$$\begin{array}{r} 3. \quad 56 \\ \times 3 \\ \hline 168 \end{array}$$

$$\begin{array}{r} 4. \quad 94 \\ \times 2 \\ \hline 188 \end{array}$$

$$\begin{array}{r} 5. \quad 68 \\ \times 4 \\ \hline 272 \end{array}$$

$$\begin{array}{r} 6. \quad 27 \\ \times 8 \\ \hline 216 \end{array}$$

$$\begin{array}{r} 7. \quad 82 \\ \times 6 \\ \hline 492 \end{array}$$

$$\begin{array}{r} 8. \quad 43 \\ \times 7 \\ \hline 301 \end{array}$$

Solve each problem.

Show your work.

9. Describe how you solved one of the exercises above.
Write at least two sentences.

Accept all answers that make sense.

10. Mariko wrote the full alphabet (26 letters) 9 times.
How many letters did she write?

234 letters

11. Alan has 17 packs of bulletin-board cutouts. Each one contains 9 shapes. How many shapes does he have altogether?

153 shapes

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 6,095 \\ + 2,382 \\ \hline 8,477 \end{array}$$

$$\begin{array}{r} 2. \quad 53,894 \\ - 12,914 \\ \hline 40,980 \end{array}$$

$$\begin{array}{r} 3. \quad 629,137 \\ - 508,978 \\ \hline 120,159 \end{array}$$

Solve each problem.

Show your work.

4. During the first half of a college basketball game, 24,196 people entered the athletic center. During the second half, 2,914 people left and 4,819 people entered. How many people were in the athletic center at the end of the game?

26,101 people

5. Miles had three sets of building blocks. His first set had 491 pieces. His second set had 624 pieces. Miles combined his three sets for a total of 1,374 pieces. How many pieces had been in his third set?

259 pieces

Use any method to solve. Sketch a rectangle model if you need to.

6. 6×23 138

7. 8×44 352

8. 3×95 285

Check students' work.

9. **Stretch Your Thinking** A bookcase has 3 shelves with 38 books each and 4 shelves with 29 books each. How many books are in the bookcase? Use any method to solve. Show your work. **Methods will vary. Possible method is shown. There are 230 books in the bookcase.**

$$\begin{array}{r} 38 \\ \times 3 \\ \hline 114 \end{array}$$

$$\begin{array}{r} 29 \\ \times 4 \\ \hline 116 \end{array}$$

$$\begin{array}{r} 114 \\ + 116 \\ \hline 230 \end{array}$$

Homework

Sketch rectangles and solve by any method that relates to your sketch. **Check students' methods.**

1. 3×687 2,061

2. 8×572 4,576

3. 5×919 4,595

4. 6×458 2,748

5. A parking garage charges \$5 per vehicle to park. The garage has 327 spaces for vehicles. If the garage is full, how much money does garage make?

Show your work.

\$1,635

6. Susie's car can go about 342 miles on one tank of gasoline. She has filled her tank 4 times this month. About how many miles did Susie travel this month?

1,368 miles

7. Zach filled his albums with 134 pages of trading cards. Each page holds 9 trading cards. How many trading cards does Zach have in his albums?

1,206 trading cards

8. Write and solve a multiplication word problem involving a three-digit number.

Answers will vary.

Remembering

Answer each question about the information in the table.

1. What is the combined population of Midborough and Bigville?

172,992 people

2. How many more people live in Superburg than in Smalltown?

146,557 people

Population of Five Cities	
Smalltown	38,346
Midborough	49,725
Centervale	79,086
Bigville	123,267
Superburg	184,903

Use any method to solve. Sketch a rectangle model, if you need to.

3. $3 \times 91 = \underline{273}$ 4. $7 \times 65 = \underline{455}$ 5. $6 \times 84 = \underline{504}$

Check students' work.

Solve using any numerical method. Use rounding and estimating to see if your answer makes sense. **Methods will vary.**

$$\begin{array}{r} 6. \quad 45 \\ \times 7 \\ \hline 315 \end{array}$$

$$\begin{array}{r} 7. \quad 28 \\ \times 9 \\ \hline 252 \end{array}$$

$$\begin{array}{r} 8. \quad 81 \\ \times 7 \\ \hline 567 \end{array}$$

$$\begin{array}{r} 9. \quad 56 \\ \times 3 \\ \hline 168 \end{array}$$

10. **Stretch Your Thinking** Whether using the Place Value Sections Method, the Expanded Notation Method, or the Algebraic Notation Method, the same basic steps can be used to multiply a one-digit number by a three-digit number. Put these steps in order by numbering 1 through 3.

3 Add the partial products.

1 Write the three-digit number in expanded form.

2 Multiply the one-digit number by each of the values in expanded form.

Homework

Cross out the extra numerical information and solve.

Show your work.

1. A gymnastic meet is ~~2 hours~~ long. It has 8 competitors and each competes in 4 events. How many events will be scored?

32 events

2. George makes \$20 doing lawn work for ~~4 hours~~ each week. He wants to buy a ~~\$2,500~~ used car from his grandmother. He has been saving this money for 30 weeks. How much has he saved?

\$600

Tell what additional information is needed to solve the problem.

3. Michelle is saving \$20 each week for the bike of her dreams. How long until she can purchase her bike?

the cost of the bike

4. A teacher sees a sale on packages of pencils. She wants to give each of her students a pencil. How many packages should she buy?

the number of students in her class and the number of pencils in a package

Solve each problem and label your answer. Write hidden questions if you need to.

5. There are 18 windows on each side of a rectangular building. It takes the window washer 3 minutes to wash each window. How many minutes will it take to finish the job?

216 minutes

6. The school office prints a newsletter every month that uses 2 pieces of paper. They make 35 copies for each room. How many pieces of paper do they need to print copies for 10 rooms?

700 pieces

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 5,900 \\ - 1,386 \\ \hline 4,514 \end{array}$$

$$\begin{array}{r} 2. \quad 54,371 \\ + 12,703 \\ \hline 67,074 \end{array}$$

$$\begin{array}{r} 3. \quad 800,000 \\ - 753,192 \\ \hline 46,808 \end{array}$$

Solve using any numerical method. Use rounding and estimating to check your work. **Check students' work.**

$$\begin{array}{r} 4. \quad 83 \\ \times 5 \\ \hline 415 \end{array}$$

$$\begin{array}{r} 5. \quad 36 \\ \times 2 \\ \hline 72 \end{array}$$

$$\begin{array}{r} 6. \quad 94 \\ \times 6 \\ \hline 564 \end{array}$$

$$\begin{array}{r} 7. \quad 44 \\ \times 8 \\ \hline 352 \end{array}$$

Draw a rectangle model. Solve using any method that relates to the model.

$$8. \quad 6 \times 358 = \underline{2,148}$$

$$9. \quad 4 \times 692 = \underline{2,768}$$

Check students' work.

10. Stretch Your Thinking Write a word problem that involves multiplication and addition. Include extra numerical information. Solve the problem, showing your work.

Answers will vary. Possible answer: The zoo has two monkey enclosures. One enclosure has 7 monkeys. The other enclosure has 5 monkeys. Each monkey eats 4 pounds of food a day. The food costs \$2 per pound. How many pounds of food do the monkeys eat each day? **Solution:** $7 + 5 = 12$; $12 \times 4 = 48$; The monkeys eat 48 pounds of food each day.

Remembering

What is 851,632 rounded to the nearest:

1. hundred? 851,600

2. thousand? 852,000

3. ten thousand? 850,000

4. hundred thousand? 900,000

Compare using $>$, $<$, or $=$.

5. 58,320 $(=)$ 58,320

6. 642,810 $(>)$ 64,281

7. 427,900 $(<)$ 428,000

8. 71,253 $(<)$ 409,135

Draw a rectangle model. Solve using any method that relates to the model.

9. $6 \times 358 = \underline{2,148}$

10. $4 \times 692 = \underline{2,768}$

Check students' work.

Tell what additional information is needed to solve the problem.

11. Rosalina knitted 8 scarves for gifts. She used 38 feet of yarn for each scarf. How much did Rosalina spend on the yarn?

the cost of each foot of yarn

12. **Stretch Your Thinking** How many smaller rectangles are there in an area model that represents 27×83 ? Why? What are their dimensions?

There are 4 smaller rectangles in the area model

because each place value of 27 is multiplied by

each place value of 83. The dimensions of the

smaller rectangles are 20×80 , 20×3 , 7×80 ,

and 7×3 .

Homework

Multiply using any method. If you use an area model to multiply, show your sketch.

1. 45×79

3,555

2. 88×29

2,552

3. 74×57

4,218

4. 84×68

5,712

Mr. Gomez's class is learning about multiplication. The class wants to see what multiplications they can find in their school. Solve each problem.

5. The class counts 37 tiles across the front of their room and 64 tiles down one side. How many floor tiles are in their classroom?

2,368 floor tiles

6. The back of their classroom is a brick wall. Down one side, they count 26 rows of bricks. Across the bottom, they count 29 bricks. How many bricks make up the wall?

754 bricks

7. In the school, there are 3 classrooms for each grade: kindergarten, 1, 2, 3, 4, 5, and 6. Each classroom has 32 lockers. How many lockers are there in the school building?

672 lockers

8. The school auditorium has 69 rows of seats. Each row has 48 seats across. If 6,000 people want to see the school talent show, how many times do the students have to do the show?

two times

Write two multiplication word problems of your own.

Then solve each problem.

9. Word problems will vary.

10. Word problems will vary.

Remembering

Estimate each sum. Then solve to check your estimate. *Estimates may vary.*

- $289 + 503$ *estimate: $300 + 500 = 800$; exact: 792*
- $4,199 + 684$ *estimate: $4,200 + 700 = 4,900$; exact: 4,883*
- $8,128 + 895$ *estimate: $8,000 + 900 = 8,900$; exact: 9,023*

Cross out the extra numerical information and solve.

Show your work.

- Marlene is making 4 batches of muffins for her drama party. Each batch requires 2 cups of flour and makes 24 muffins. How many muffins will Marlene have for the party?

Extra: 2 cups of flour; 96 muffins

- One pack of batteries costs \$6 and contains 9 batteries. Trevor bought 3 packs of batteries. How much did Trevor spend on batteries?

Extra: 9 batteries; \$18

Sketch an area model for each exercise. Then find the product.

- 54×38 2,052
- 49×75 3,675

Check students' work.

- Stretch Your Thinking** Jackson used the Shortcut Method to multiply 84×37 . Did he do it correctly?

Explain.

No, Jackson did not align the place values correctly.

When he multiplied the 3 by the 4 and got 12, he should have put the 2 in the tens place instead of the ones place because it's really 30 times 4, which is 120. The correct answer 3,108.

$$\begin{array}{r}
 1 \\
 2 \\
 84 \\
 \times 37 \\
 \hline
 588 \\
 + 252 \\
 \hline
 840
 \end{array}$$

Homework

Solve each multiplication problem using any method. Use rounding and estimation to check your work. **Check students' work.**

$$\begin{array}{r} 1. \ 45 \times 61 \\ \hline 2,745 \end{array}$$

$$\begin{array}{r} 2. \ 24 \times 56 \\ \hline 1,344 \end{array}$$

$$\begin{array}{r} 3. \ 83 \times 27 \\ \hline 2,241 \end{array}$$

$$\begin{array}{r} 4. \ 39 \times 48 \\ \hline 1,872 \end{array}$$

$$\begin{array}{r} 5. \ 36 \times 96 \\ \hline 3,456 \end{array}$$

$$\begin{array}{r} 6. \ 63 \times 87 \\ \hline 5,481 \end{array}$$

$$\begin{array}{r} 7. \ 58 \times 79 \\ \hline 4,582 \end{array}$$

$$\begin{array}{r} 8. \ 15 \times 92 \\ \hline 1,380 \end{array}$$

$$\begin{array}{r} 9. \ 33 \times 43 \\ \hline 1,419 \end{array}$$

$$\begin{array}{r} 10. \ 76 \times 29 \\ \hline 2,204 \end{array}$$

$$\begin{array}{r} 11. \ 69 \times 63 \\ \hline 4,347 \end{array}$$

$$\begin{array}{r} 12. \ 84 \times 23 \\ \hline 1,932 \end{array}$$

Remembering

Subtract. Then use addition to check the subtraction.

Show your work.

1. $8,960 - 1,238 = \underline{7,722}$

2. $5,418 - 5,269 = \underline{149}$

Check: $\underline{7,722 + 1,238 = 8,960}$

Check: $\underline{149 + 5,269 = 5,418}$

Sketch an area model for each exercise. Then find the product.

3. $28 \times 94 = \underline{2,632}$

4. $63 \times 88 = \underline{5,544}$

Check students' work.

Use any method to solve. Sketch an area model if you need to.

5. $66 \times 24 = \underline{1,584}$

6. $27 \times 83 = \underline{2,241}$

7. $79 \times 35 = \underline{2,765}$

- 8. Stretch Your Thinking** Kia is printing packets of information. There are 23 pages in a packet, and she needs enough copies for 52 people. Each package of paper contains 200 sheets. She estimates she needs 5 packages of paper to print the packets. Will she have enough paper? Explain.

No, Kia will not have enough paper. She rounded 52 to 50 and 23 to 20 to estimate that she needs 50×20 , or 1,000 sheets of paper. Since both of the factors were rounded down, 1,000 is an underestimate of the amount of paper she needs.

Homework

Solve using any method and show your work.

Check your work with estimation.

1. 55×64

3,520

2. 42×67

2,814

3. 59×32

1,888

4. 78×44

3,432

5. 62×23

1,426

6. 53×28

1,484

7. 71×35

2,485

8. 22×66

1,452

Solve.

Show your work.

9. Keesha walks 12 blocks to school every day. One day, she counts 88 sidewalk squares in one block. If each block has the same number of sidewalk squares, how many squares does Keesha walk on as she walks *to* and *from* school each day?

2,112 squares

10. The Card Collector's Club is having a meeting. Each member brings 25 sports cards to show and trade. If 35 members attend, how many cards do they bring altogether?

875 cards

11. On a separate sheet of paper, write and solve your own multiplication word problem.

Answers will vary.

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 4,659 \\ + 2,047 \\ \hline 6,706 \end{array}$$

$$\begin{array}{r} 2. \quad 9,380 \\ + 1,599 \\ \hline 10,979 \end{array}$$

$$\begin{array}{r} 3. \quad 248,266 \\ - 147,852 \\ \hline 100,414 \end{array}$$

Use any method to solve. Sketch an area model if you need to. **Check students' work.**

$$\begin{array}{r} 4. \quad 26 \times 18 \\ \hline 468 \end{array}$$

$$\begin{array}{r} 5. \quad 35 \times 64 \\ \hline 2,240 \end{array}$$

$$\begin{array}{r} 6. \quad 82 \times 73 \\ \hline 5,986 \end{array}$$

$$\begin{array}{r} 7. \quad 91 \times 23 \\ \hline 2,093 \end{array}$$

Solve using any method. Use rounding and estimation to check your work. **Check students' work.**

$$\begin{array}{r} 8. \quad 17 \times 44 \\ \hline 748 \end{array}$$

$$\begin{array}{r} 9. \quad 62 \times 74 \\ \hline 4,588 \end{array}$$

$$\begin{array}{r} 10. \quad 53 \times 89 \\ \hline 4,717 \end{array}$$

$$\begin{array}{r} 11. \quad 32 \times 96 \\ \hline 3,072 \end{array}$$

- 12. Stretch Your Thinking** Greyson is planning to lay a brick driveway which will be made up of 84 rows of 14 bricks per row. He will also lay a backyard patio with 25 rows of 31 bricks per row. How many pallets of bricks should Greyson order if each pallet has 1,000 bricks?

Show your work.

Greyson should order 2 pallets. The driveway will need 84×14 , or 1,176 bricks. The patio will need 25×31 , or 775 bricks. This is a total of 1,951 bricks. So, he should order 2 pallets of 1,000 bricks each.

Homework

Sketch a rectangle for each problem and solve using any method that relates to your sketch. **Check students' drawings and methods.**

1. $8 \times 6,000$

48,000

2. $6 \times 3,542$

21,252

3. $7 \times 3,124$

21,868

4. $5 \times 7,864$

39,320

5. A school is participating in a pull tab program to raise money for a local organization. The school puts 1,295 pull tabs in each bag. The school has 7 bags of pull tabs. How many pull tabs has the school collected?

9,065 pull tabs*Show your work*

6. A dance company has scheduled 4 performances at a theater. The theater has 2,763 seats. Every ticket has been sold for each of the performances. How many tickets were sold in all?

11,052 tickets

7. An amusement park has about 3,600 visitors each day. About how many visitors does the amusement park have in one week?

25,200 visitors

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 23,152 \\ - 10,894 \\ \hline 12,258 \end{array}$$

$$\begin{array}{r} 2. \quad 308,000 \\ - 175,296 \\ \hline 132,704 \end{array}$$

$$\begin{array}{r} 3. \quad 827,381 \\ + 154,338 \\ \hline 981,719 \end{array}$$

Solve each multiplication problem using any method. Use rounding and estimation to check your work. **Check students' work.**

$$\begin{array}{r} 4. \quad 21 \times 36 \\ \hline 756 \end{array}$$

$$\begin{array}{r} 5. \quad 48 \times 16 \\ \hline 768 \end{array}$$

$$\begin{array}{r} 6. \quad 53 \times 99 \\ \hline 5,247 \end{array}$$

$$\begin{array}{r} 7. \quad 64 \times 72 \\ \hline 4,608 \end{array}$$

Solve using any method and show your work. Check your work with estimation.

$$\begin{array}{r} 8. \quad 45 \times 91 \\ \hline 4,095 \end{array}$$

$$\begin{array}{r} 9. \quad 26 \times 33 \\ \hline 858 \end{array}$$

$$\begin{array}{r} 10. \quad 47 \times 52 \\ \hline 2,444 \end{array}$$

$$\begin{array}{r} 11. \quad 87 \times 14 \\ \hline 1,218 \end{array}$$

12. **Stretch Your Thinking** Lily says that $4 \times 7,000$ has the same product as $7 \times 4,000$. Is she correct? Explain using the Associative Property of Multiplication.
Yes, Lily is correct. Possible answer: you can write the factors $4 \times 7,000$ as $4 \times (7 \times 1,000)$ or as $(4 \times 7) \times 1,000$ using the Associative Property.
-
-

Homework

On a separate sheet of paper, sketch a rectangle for each problem and solve using any method. Round and estimate to check your answer. **Drawings will vary.**

1. $5 \times 4,751$ 23,755 2. $7 \times 6,000$ 42,000

3. $6 \times 5,214$ 31,284 4. $8 \times 3,867$ 30,936

5. Describe the steps you used for one of your solutions to Exercises 1–4.

Answers will vary.

A fourth grade class is counting the supplies in the school's art closet. Help them to finish their count.

Show your work.

6. They have 6 rolls of white craft paper. The paper on the rolls is 1,275 feet long. How many feet of craft paper do they have altogether?

7,650 feet

7. They counted 592 boxes of color pencils and 468 boxes of markers. If each box holds 8 pencils or markers, how many color pencils and markers do they have altogether?

8,480 pencils and markers

8. They found 9 boxes of glass beads. There are 1,376 beads per box. How many glass beads do they have in all?

12,384 glass beads

9. They found 7 cases of sketching paper. If each case has 2,500 sheets of paper, how many sheets of sketching paper do they have in all?

17,500 sheets

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 82,905 \\ - 81,927 \\ \hline 978 \end{array}$$

$$\begin{array}{r} 2. \quad 53,742 \\ + 93,587 \\ \hline 147,329 \end{array}$$

$$\begin{array}{r} 3. \quad 400,000 \\ - 162,947 \\ \hline 237,053 \end{array}$$

Solve.

Show your work.

4. Marta bought 18 sheets of stickers for her sticker album. Each sheet contained 32 stickers. How many stickers did Marta buy for her sticker album?

576 stickers

Draw a rectangle model. Solve using any method that relates to the model.

$$5. \quad 3 \times 2,816 \quad \underline{8,448}$$

$$6. \quad 7 \times 1,578 \quad \underline{11,046}$$

Check students' methods.

7. **Stretch Your Thinking** Zoe rounded $6 \times 8,493$ to $6 \times 8,000$. Andrew rounded $6 \times 8,493$ to $6 \times 9,000$. Who will have an estimate closer to the actual product? How do you know? Explain another way to estimate $6 \times 8,493$ that would give a better estimate.

Zoe will have a better estimate because 8,493 is closer to 8,000 than 9,000. A better estimate would be to round 8,493 to the nearest hundred. Then you could break apart 8,500 into 8,000 and 500, multiply both parts by 6, and add the results.

$$\underline{6 \times (8,000 + 500) = (6 \times 8,000) + (6 \times 500)}$$

$$\underline{= 48,000 + 3,000}$$

$$\underline{= 51,000}$$

Homework

Solve using any method and show your work. Check your work with estimation.

$$\begin{array}{r} 1. \ 6 \times 88 \\ \underline{\hspace{1.5cm}} \\ 528 \end{array}$$

$$\begin{array}{r} 2. \ 62 \times 32 \\ \underline{\hspace{1.5cm}} \\ 1,984 \end{array}$$

$$\begin{array}{r} 3. \ 3 \times 3,719 \\ \underline{\hspace{1.5cm}} \\ 11,157 \end{array}$$

$$\begin{array}{r} 4. \ 63 \\ \times 4 \\ \hline 252 \end{array}$$

$$\begin{array}{r} 5. \ 523 \\ \times 8 \\ \hline 4,184 \end{array}$$

$$\begin{array}{r} 6. \ 39 \\ \times 19 \\ \hline 741 \end{array}$$

$$\begin{array}{r} 7. \ 84 \\ \times 47 \\ \hline 3,948 \end{array}$$

$$\begin{array}{r} 8. \ 2,858 \\ \times 9 \\ \hline 25,722 \end{array}$$

$$\begin{array}{r} 9. \ 541 \\ \times 6 \\ \hline 3,246 \end{array}$$

Solve.

10. Mr. Jackson goes on vacation for 22 days. He pays \$17 each day he is gone for Holly's Home Service to get the mail, walk the dog, and water the plants. How much does Mr. Jackson pay Holly's Home Service for the time he is on vacation?

\$374

11. A contractor needs to know the area of a sidewalk that is 2,381 feet long and 7 feet wide. What is the area of the sidewalk?

16,667 feet

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 38,560 \\ + 16,429 \\ \hline 54,989 \end{array}$$

$$\begin{array}{r} 2. \quad 272,311 \\ - 164,838 \\ \hline 107,473 \end{array}$$

$$\begin{array}{r} 3. \quad 815,007 \\ + 174,399 \\ \hline 989,406 \end{array}$$

Draw a rectangle model. Solve using any method that relates to the model.

$$4. \quad 9 \times 4,572 \quad \underline{41,148}$$

$$5. \quad 4 \times 8,386 \quad \underline{33,544}$$

Check students' methods.

A grocery store clerk is ordering produce for the month. Help him find how many snap peas and garlic bulbs are in his order.

Show your work.

6. He orders 4 crates of snap peas. Each crate contains 3,275 snap peas. How many snap peas is he ordering?
13,100 snap peas

7. He orders 9 boxes of garlic bulbs. Each box contains 1,930 bulbs of garlic. How many garlic bulbs is he ordering?
17,370 garlic bulbs

8. **Stretch Your Thinking** A videographer earns \$485 for every wedding he records and \$18 for every extra copy of the video his customers order. How much money does the videographer earn in a summer during which he records 34 videos and has 87 orders for extra copies? Show your work.

He earns \$18,056. He earns $\$485 \times 34 = \$16,490$
for recording the weddings and $\$18 \times 87 = \$1,566$
for the extra copies.

Homework

Solve using any method and show your work. Check your work with estimation.

$$\begin{array}{r} 1. \quad 3 \times 45 \\ \quad \quad 135 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 32 \times 82 \\ \quad \quad 2,624 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 9 \times 2,477 \\ \quad \quad 22,293 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 86 \\ \quad \times 4 \\ \hline 344 \end{array}$$

$$\begin{array}{r} 5. \quad 419 \\ \quad \times 6 \\ \hline 2,514 \end{array}$$

$$\begin{array}{r} 6. \quad 76 \\ \quad \times 39 \\ \hline 2,964 \end{array}$$

$$\begin{array}{r} 7. \quad 23 \\ \quad \times 95 \\ \hline 2,185 \end{array}$$

$$\begin{array}{r} 8. \quad 6,965 \\ \quad \times 8 \\ \hline 55,720 \end{array}$$

$$\begin{array}{r} 9. \quad 746 \\ \quad \times 5 \\ \hline 3,730 \end{array}$$

Solve.

10. Simon makes an array that is 47 units wide and 33 units long. What is the area of Simon's array?

1,551 square units

11. A farmer plants vegetables in rows. He plants 36 rows of carrots with 13 carrot seeds in each row. How many carrot seeds did the farmer plant?

468 carrot seeds

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 563,902 \\ - 153,884 \\ \hline 410,018 \end{array}$$

$$\begin{array}{r} 2. \quad 327,148 \\ - 123,960 \\ \hline 203,188 \end{array}$$

$$\begin{array}{r} 3. \quad 650,295 \\ + 101,586 \\ \hline 751,881 \end{array}$$

Sketch a rectangle model and solve using any method.

Round and estimate to check your answer. **Check students' work.**

$$4. \quad 6 \times 3,916 \quad \underline{23,496}$$

$$5. \quad 7 \times 2,843 \quad \underline{19,901}$$

Solve using any method and show your work. Check your work with estimation.

$$6. \quad 7 \times 43 \quad \underline{301}$$

$$7. \quad 48 \times 26 \quad \underline{1,248}$$

$$8. \quad 4,715 \times 3 \quad \underline{14,145}$$

$$\begin{array}{r} 9. \quad 62 \\ \times 91 \\ \hline 5,642 \end{array}$$

$$\begin{array}{r} 10. \quad 849 \\ \times 6 \\ \hline 5,094 \end{array}$$

$$\begin{array}{r} 11. \quad 5,293 \\ \times 4 \\ \hline 21,172 \end{array}$$

- 12. Stretch Your Thinking** LaDonne has a budget of \$240 for new school clothes. She needs at least two new shirts, two new pairs of pants, and one new pair of shoes. The shirts cost \$18 each. The pants cost \$32 each. The shoes cost \$49 per pair. Plan two different combinations of numbers of shirts, pants, and shoes that LaDonne could buy within her budget. What is the total cost for each buying plan? **Answers will vary.**
LaDonne could buy five shirts, three pairs of pants,
and one pair of shoes for \$235. She could buy four
shirts, two pairs of pants, and two pairs of shoes for \$234.

Homework

Divide with remainders.

$$\begin{array}{r} 5 \text{ R}4 \\ 5 \overline{)29} \\ \underline{-25} \\ 4 \end{array}$$

$$\begin{array}{r} 4 \text{ R}2 \\ 8 \overline{)34} \\ \underline{-32} \\ 2 \end{array}$$

$$\begin{array}{r} 8 \text{ R}3 \\ 9 \overline{)75} \\ \underline{-72} \\ 3 \end{array}$$

$$\begin{array}{r} 6 \text{ R}1 \\ 2 \overline{)13} \\ \underline{-12} \\ 1 \end{array}$$

$$\begin{array}{r} 9 \text{ R}3 \\ 4 \overline{)39} \\ \underline{-36} \\ 3 \end{array}$$

$$\begin{array}{r} 7 \text{ R}2 \\ 4 \overline{)30} \\ \underline{-28} \\ 2 \end{array}$$

$$\begin{array}{r} 6 \text{ R}3 \\ 7 \overline{)45} \\ \underline{-42} \\ 3 \end{array}$$

$$\begin{array}{r} 6 \text{ R}2 \\ 6 \overline{)38} \\ \underline{-36} \\ 2 \end{array}$$

$$\begin{array}{r} 7 \text{ R}4 \\ 5 \overline{)39} \\ \underline{-35} \\ 4 \end{array}$$

$$\begin{array}{r} 8 \text{ R}1 \\ 3 \overline{)25} \\ \underline{-24} \\ 1 \end{array}$$

$$\begin{array}{r} 7 \text{ R}3 \\ 4 \overline{)31} \\ \underline{-28} \\ 3 \end{array}$$

$$\begin{array}{r} 3 \text{ R}8 \\ 9 \overline{)35} \\ \underline{-27} \\ 8 \end{array}$$

$$\begin{array}{r} 6 \text{ R}3 \\ 4 \overline{)27} \\ \underline{-24} \\ 3 \end{array}$$

$$\begin{array}{r} 3 \text{ R}5 \\ 8 \overline{)29} \\ \underline{-24} \\ 5 \end{array}$$

$$\begin{array}{r} 3 \text{ R}1 \\ 7 \overline{)22} \\ \underline{-21} \\ 1 \end{array}$$

$$\begin{array}{r} 8 \text{ R}2 \\ 3 \overline{)26} \\ \underline{-24} \\ 2 \end{array}$$

$$\begin{array}{r} 6 \text{ R}1 \\ 6 \overline{)37} \\ \underline{-36} \\ 1 \end{array}$$

$$\begin{array}{r} 5 \text{ R}2 \\ 8 \overline{)42} \\ \underline{-40} \\ 2 \end{array}$$

Remembering

Write the number of thousands and the number of hundreds in each number.

1. 4,128

4 thousands1 hundreds

2. 8,395

8 thousands3 hundreds

3. 612

0 thousands6 hundreds

Read and write each number in expanded form.

4. 94 $90 + 4$

5. 752 $700 + 50 + 2$

6. 3,576 $3,000 + 500 + 70 + 6$

7. 8,109 $8,000 + 100 + 9$

Read and write each number in standard form.

8. $200 + 30 + 7$ 237

9. $5,000 + 800 + 60$ $5,860$

10. four hundred sixty-three

 463

11. eight thousand, one hundred ten

 $8,110$

Find the area (in square units) of a rectangle with the given dimensions.

12. 5×7 35 sq units

13. 20×3 60 sq units

14. 3×8 24 sq units

15. 4×90 360 sq units

16. 4×4 16 sq units

17. 30×6 180 sq units

18. Stretch Your Thinking Three vocabulary terms for division are shown in the division model. Use these terms to complete the multiplication sentence.

$$\begin{array}{r} \text{quotient} \\ \text{divisor} \overline{) \text{dividend}} \end{array}$$

$$\underline{\text{quotient}} \times \underline{\text{divisor}} = \underline{\text{dividend}}$$

Homework

Solve. Use the Place Value Sections Method for division.

Charlie has 944 baseball cards in his collection. He places the cards in an album with exactly 4 cards on each page. How many pages does Charlie fill in his baseball card album? 236 pages

$$200 + 30 + 6 = 236 \text{ pages}$$

4	944	144	24
	-800	-120	-24
	144	24	0

1. A hardware store has 834 planks of wood to deliver to 6 building sites. If each site gets the same number of planks, how many planks should each building site get? 139 planks

$$100 + 30 + 9 = 139 \text{ planks}$$

6	834	234	54
	-600	-180	-54
	234	54	0

Solve. Use the Expanded Notation Method for division.

2. A park planner is designing a rectangular butterfly garden. The plan is for the garden to have an area of 1,917 square feet. If the garden is 9 feet wide, how long is it? 213 ft

$$\begin{array}{r} 3 \\ 10 \\ 200 \end{array} \Bigg] 213$$

$$\begin{array}{r} 9 \overline{) 1,917} \\ \underline{- 1,800} \\ 117 \\ \underline{- 90} \\ 27 \\ \underline{- 27} \\ 0 \end{array}$$

3. A family drives 1,498 miles from Boston, Massachusetts to Miami, Florida. If they drive the same number of miles each day for 7 days, how many miles will they drive each day? 214 miles

$$\begin{array}{r} 4 \\ 10 \\ 200 \end{array} \Bigg] 214$$

$$\begin{array}{r} 7 \overline{) 1,498} \\ \underline{- 1,400} \\ 98 \\ \underline{- 70} \\ 28 \\ \underline{- 28} \\ 0 \end{array}$$

Remembering

Round each number to the nearest hundred.

1. 591 600

2. 827 800

3. 457 500

Round each number to the nearest thousand.

4. 7,129 7,000

5. 6,742 7,000

6. 1,028 1,000

Draw a rectangle. Find the tens product, the ones product, and the total product.

7. 4×29

8. 8×36

4	$4 \times 20 = 80$	+	$4 \times 9 = 36$
	80		
	$+ 36$		
	$\hline 116$		

8	$8 \times 30 = 240$	+	$8 \times 6 = 48$
	240		
	$+ 48$		
	$\hline 288$		

Divide with remainders.

$$\begin{array}{r} 5 \text{ R}3 \\ 7 \overline{)38} \\ - 35 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 7 \text{ R}1 \\ 4 \overline{)29} \\ - 28 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 4 \text{ R}2 \\ 3 \overline{)14} \\ - 12 \\ \hline 2 \end{array}$$

12. Stretch Your Thinking Divide 594 by 3 using the Place Value Sections Method and Expanded Notation Method. Explain how you can check your answer using multiplication.

$$\underline{1}00 + \underline{9}0 + \underline{8} = \underline{198}$$

3	594	294	24
	$- 300$	270	$- 24$
	$\hline 294$	24	0

I can check the division by multiplying the quotient 198 by the divisor 3 and see if I get the dividend 594.

8	198
90	
100	
$3 \overline{)594}$	
$- 300$	
$\hline 294$	
$- 270$	
$\hline 24$	
$- 24$	
$\hline 0$	

Homework

Solve. Use the Place Value Sections and the Expanded Notation Methods for division.

1. $\underline{90} + \underline{4} = \underline{94}$ $\begin{array}{r} 4 \\ 90 \end{array} \Big] 94$

6	564	24
	-540	-24
	24	0

6	564
	-540
	24
	-24
	0

2. $\underline{30} + \underline{5} = \underline{35}$ $\begin{array}{r} 5 \\ 30 \end{array} \Big] 35$

7	245	35
	-210	-35
	35	0

7	245
	-210
	35
	-35
	0

3. $\underline{1,000} + \underline{900} + \underline{30} + \underline{5} = \underline{1,935}$

5	9,675	4,675	175	25
	-5,000	-4,500	-150	-25
	4,675	175	25	0

5	9,675
	-5,000
	4,675
	-4,500
	175
	-150
	25
	-25
	0

5	30	}	1,935
900			
1,000			
5)9,675			
0			

4. $\underline{2,000} + \underline{300} + \underline{80} + \underline{4} = \underline{2,384}$

4	9,536	1,536	336	16
	-8,000	-1,200	-320	-16
	1,536	336	16	0

4	9,536
	-8,000
	1,536
	-1,200
	336
	-320
	16
	-16
	0

4	80	}	2,384
300			
2,000			
4)9,536			

Remembering

Read and write each number in word form.

- 73,894 seventy-three thousand, eight hundred ninety-four
- 220,508 two hundred twenty thousand, five hundred eight
- 1,000,000 one million
- 915,007 nine hundred fifteen thousand, seven

Estimate each product. Solve to check your estimate.

5. 6×42

$6 \times 40 = 240;$

$6 \times 42 = 252$

6. 3×19

$3 \times 20 = 60;$

$3 \times 19 = 57$

7. 5×78

$5 \times 80 = 400;$

$5 \times 78 = 390$

Solve. Use the Place Value Sections Method and the Expanded Notation Method for division.

8. A ball pit at an entertainment center contains 2,120 balls. The balls are cleaned regularly by a machine which can hold a certain number of balls at once. If the machine must be run 8 times to clean all the balls, how many balls fit in the machine at one time?

265 balls

8	$\begin{array}{r} \underline{2} \ 00 \\ 2,120 \\ - 1,600 \\ \hline 520 \end{array}$	+	$\begin{array}{r} \underline{6} \ 0 \\ 520 \\ - 480 \\ \hline 40 \end{array}$	+	$\begin{array}{r} \underline{5} \\ 40 \\ - 40 \\ \hline 0 \end{array}$	=	<u>265</u>
---	---	---	---	---	--	---	------------

$$\begin{array}{r} 5 \\ 60 \\ 200 \\ \hline 8 \overline{)2,120} \\ - 1,600 \\ \hline 520 \\ - 480 \\ \hline 40 \\ - 40 \\ \hline 0 \end{array}$$

9. **Stretch Your Thinking** How many digits will be in the quotient of 588 divided by 6? Use place value to explain.
There will be 2 digits in the quotient. I know this
because the dividend 588 has 5 hundreds. So I cannot
make any groups of 6 hundreds out of 5 hundreds.

Homework**Divide.**

1. $6 \overline{)2,142}$ ³⁵⁷

2. $4 \overline{)886}$ ^{221 R2}

3. $8 \overline{)576}$ ⁷²

4. $5 \overline{)8,265}$ ^{1,653}

5. $3 \overline{)795}$ ²⁶⁵

6. $9 \overline{)2,664}$ ²⁹⁶

7. $6 \overline{)259}$ ^{43 R1}

8. $7 \overline{)952}$ ¹³⁶

9. $3 \overline{)7,459}$ ^{2,486 R1}

Solve.*Show your work.*

10. For the school field day, students are divided into 5 same-size teams. Any extra students will serve as substitutes. If 243 students participate, how many students will be on each team? How many substitutes will there be?

$$\underline{243 \div 5 = 48 \text{ R}3; 48 \text{ on each team; 3 substitutes}}$$

11. A fruit stand sells packages containing 1 peach, 1 pear, 1 apple, 1 banana, and 1 mango each. One week they sold a total of 395 pieces of fruit. How many packages did they sell?

$$\underline{395 \div 5 = 79; 79 \text{ packages}}$$

Remembering

Compare using $>$, $<$, or $=$.

1. 258,800 $>$ 258,700

2. 142,367 $<$ 342,367

Use the Algebraic Notation Method to solve the problem.

Complete the steps.

3. $7 \cdot 28$ 196

$$7 \cdot 28 = 7 \cdot (20 + 8)$$

$$= 140 + 56$$

$$= 196$$

Solve. Use the Place Value Sections and the Expanded Notation Methods for division.

4. 2 00 + 5 0 + 9 = 259

4	1,036	236	36
	- 800	- 200	- 36
	236	36	0

$$\begin{array}{r} 9 \\ 50 \\ 200 \\ \hline 4 \overline{) 1,036} \\ \underline{- 800} \\ 236 \\ \underline{- 200} \\ 36 \\ \underline{- 36} \\ 0 \end{array} \quad \left. \begin{array}{l} 9 \\ 50 \\ 200 \end{array} \right\} 259$$

5. **Stretch Your Thinking** Jenna divides 2,506 by 4.

Explain the error in Jenna's solution. Then show the correct solution.

$$\begin{array}{r} 604 \\ 4 \overline{) 2,506} \\ \underline{- 24} \\ 1 \\ \underline{- 0} \\ 16 \\ \underline{- 16} \\ 0 \end{array}$$

Jenna just put a 0 in the quotient for the tens place which has a 0 in the dividend. She should have combined the 1 hundred left from the first step with the 0 tens instead of the 6 ones.

$$\begin{array}{r} 626 \text{ R}2 \\ 4 \overline{) 2,506} \\ \underline{- 24} \\ 10 \\ \underline{- 8} \\ 26 \\ \underline{- 24} \\ 2 \end{array}$$

Homework

Use any method to solve.

1. $5 \overline{)652} \begin{array}{l} 130 \\ \text{R2} \end{array}$

2. $4 \overline{)940} \begin{array}{l} 235 \\ \text{R0} \end{array}$

3. $6 \overline{)840} \begin{array}{l} 140 \\ \text{R0} \end{array}$

4. $7 \overline{)942} \begin{array}{l} 134 \\ \text{R4} \end{array}$

5. $5 \overline{)6,502} \begin{array}{l} 1,300 \\ \text{R2} \end{array}$

6. $6 \overline{)8,370} \begin{array}{l} 1,395 \\ \text{R0} \end{array}$

7. $4 \overline{)5,267} \begin{array}{l} 1,316 \\ \text{R3} \end{array}$

8. $8 \overline{)9,161} \begin{array}{l} 1,145 \\ \text{R1} \end{array}$

Solve.

9. Joe had 145 peanuts in a bag. He fed all of the peanuts to the 5 squirrels that he saw. If each squirrel got the same number of peanuts, how many peanuts did each squirrel get?

$$\underline{145 \div 5 = 29; 29 \text{ peanuts}}$$

10. There were 1,148 students at Jefferson High School who wanted to go on a field trip. Since they could not all go at the same time, they went in 7 equal groups. How many students were in each group?

$$\underline{1,148 \div 7 = 164; 164 \text{ students}}$$

11. A printing company has 1,080 ink cartridges to be packed in 9 shipping boxes. If each box holds the same number of cartridges, how many ink cartridges will be packed in each box?

$$\underline{1,080 \div 9 = 120; 120 \text{ ink cartridges}}$$

Remembering

The table shows the water surface area of each of the Great Lakes. Use the data in the table to answer the following questions.

1. What is the combined surface area of the two Great Lakes with the greatest surface area?

141,662 square km

2. Which is greater, the surface area of Lake Michigan or the sum of the surface areas of Lake Erie and Lake Ontario?

Lake Michigan

Lake	Surface Area (square kilometers)
Erie	25,655
Huron	59,565
Michigan	57,753
Ontario	19,009
Superior	82,097

Use any method to solve. Sketch a rectangle model, if you need to.

3. 4×39 156 4. 3×71 213 5. 7×62 434

Divide. Show your work.

6. $5 \overline{)1,985}$ 397

7. $6 \overline{)253}$ 42 R1

8. $7 \overline{)1,477}$ 211

9. **Stretch Your Thinking** Which method do you prefer for division: the Place Value Sections Method, Expanded Notation Method, or Digit-by-Digit Method? Explain. Then solve $6,583 \div 4$ using your preferred method.

Answers will vary. Check students' methods.

$6,583 \div 4 = 1,645 \text{ R}3$

Homework

Solve.

1. $3 \overline{)21}^7$

$3 \overline{)22}^{7 \text{ R1}}$

$3 \overline{)23}^{7 \text{ R2}}$

$3 \overline{)24}^8$

$3 \overline{)25}^{8 \text{ R1}}$

2. $7 \overline{)21}^3$

$7 \overline{)22}^{3 \text{ R1}}$

$7 \overline{)23}^{3 \text{ R2}}$

$7 \overline{)24}^{3 \text{ R3}}$

$7 \overline{)25}^{3 \text{ R4}}$

3. Describe how the repeating pattern in row 1 is different from the pattern in row 2. Explain why.

Explanations may vary. Row 1 has two quotients with remainders before there is a new group. Row 2 will have six quotients with remainders before there is a new group.

Use any method to solve.

4. $9 \overline{)2,359}^{262 \text{ R1}}$

5. $2 \overline{)5,389}^{2,694 \text{ R1}}$

6. $4 \overline{)1,648}^{412}$

7. $5 \overline{)1,456}^{291 \text{ R1}}$

8. $8 \overline{)2,506}^{313 \text{ R2}}$

9. $6 \overline{)8,473}^{1,412 \text{ R1}}$

Solve.

Show your work.

10. Mr. James arranged his collection of 861 baseball cards in 7 equal rows. How many cards were in each row?

$$\underline{861 \div 7 = 123 \text{ cards}}$$

11. A shoe company has 9,728 pairs of shoes to be divided equally among 8 stores. How many pairs of shoes will each store get?

$$\underline{9,728 \div 8 = 1,216; 1,216 \text{ pairs of shoes}}$$

Remembering

Write a number sentence that shows an estimate of each answer. Then write the exact answer. *Estimates may vary.*

1. $413 + 382$ *estimate: $400 + 400 = 800$; exact: 795*

2. $880 + 394$ *estimate: $900 + 400 = 1,300$; exact: 1,274*

3. $7,056 + 798$ *estimate: $7,000 + 800 = 7,800$; exact: 7,854*

Sketch rectangles and solve by any method that relates to your sketch.

4. 8×415 3,320

5. 6×853 5,118

Check students' rectangles.

Use any method to solve.

6. $7 \overline{)325}$ *46 R3*

7. $5 \overline{)7,390}$ *1,478*

8. $6 \overline{)9,329}$ *1,554 R5*

9. Stretch Your Thinking Toby is choosing from two bead art projects. Project A uses equal numbers of red, black, and green beads totaling 825 beads. Project B uses equal numbers of black, blue, green, and yellow beads totaling 1,020 beads. Toby has 260 green beads and doesn't want to purchase more green beads. Explain which of the two bead projects Toby should choose.

Toby should choose project B. Since

$825 \text{ beads} \div 3 \text{ colors} = 275 \text{ beads of each color,}$

Toby does not have enough green beads for

Project A. Since $1,020 \text{ beads} \div 4 \text{ colors} = 255 \text{ beads}$

of each color, he has enough green beads for

Project B.

Homework**Solve.**

$$1. \begin{array}{r} 5 \text{ R1} \\ 4 \overline{)21} \end{array} \quad \begin{array}{r} 5 \text{ R2} \\ 4 \overline{)22} \end{array} \quad \begin{array}{r} 5 \text{ R3} \\ 4 \overline{)23} \end{array} \quad \begin{array}{r} 6 \\ 4 \overline{)24} \end{array} \quad \begin{array}{r} 6 \text{ R1} \\ 4 \overline{)25} \end{array}$$

$$2. \begin{array}{r} 3 \text{ R3} \\ 6 \overline{)21} \end{array} \quad \begin{array}{r} 3 \text{ R4} \\ 6 \overline{)22} \end{array} \quad \begin{array}{r} 3 \text{ R5} \\ 6 \overline{)23} \end{array} \quad \begin{array}{r} 4 \\ 6 \overline{)24} \end{array} \quad \begin{array}{r} 4 \text{ R1} \\ 6 \overline{)25} \end{array}$$

3. Describe how the repeating pattern in row 1 is different from the pattern in row 2. Explain why.

Explanations may vary.

Use any method to solve.

$$4. \begin{array}{r} 840 \text{ R6} \\ 8 \overline{)6,726} \end{array} \quad 5. \begin{array}{r} 1,322 \text{ R5} \\ 7 \overline{)9,259} \end{array} \quad 6. \begin{array}{r} 501 \text{ R1} \\ 3 \overline{)1,504} \end{array} \quad 7. \begin{array}{r} 4,018 \text{ R1} \\ 2 \overline{)8,037} \end{array}$$

$$8. \begin{array}{r} 376 \text{ R1} \\ 9 \overline{)3,385} \end{array} \quad 9. \begin{array}{r} 469 \text{ R2} \\ 5 \overline{)2,347} \end{array} \quad 10. \begin{array}{r} 1,500 \text{ R3} \\ 6 \overline{)9,003} \end{array} \quad 11. \begin{array}{r} 2,090 \\ 4 \overline{)8,360} \end{array}$$

Solve.

12. Altogether, the members of an exercise club drink 840 bottles of water each month. Each member drinks 8 bottles. How many members are there?

$$840 \div 8 = 105; 105 \text{ members}$$

13. There are 7,623 pencils ready to be packaged in boxes at a factory. Each box holds 6 pencils. How many full boxes of pencils can be packaged?

$$7,623 \div 6 = 1,270 \text{ R3}; 1,270 \text{ full boxes of pencils}$$

Remembering

Subtract. Show your new groups.

$$\begin{array}{r} 1. \quad 5,267 \\ - 1,390 \\ \hline 3,877 \end{array}$$

$$\begin{array}{r} 2. \quad 9,000 \\ - 2,482 \\ \hline 6,518 \end{array}$$

$$\begin{array}{r} 3. \quad 6,129 \\ - 5,773 \\ \hline 356 \end{array}$$

Cross out the additional numerical information and solve.

Show your work.

4. Rick is selling fresh-squeezed lemonade for \$2 a serving. Rick makes each serving with 2 lemons and 4 tablespoons of sugar. If he sells 27 servings of lemonade, how much sugar does he use?

Extra: \$2 a serving, 2 lemons; 108 tablespoons

5. An animal shelter receives 9 large bags of dog food every month for 14 years. Each bag weighs 55 pounds. How many pounds of dog food does the animal shelter receive each month?

Extra: 14 years; 495 pounds

Solve using any method.

$$6. \quad \begin{array}{r} 150 \text{ R}2 \\ 3 \overline{)452} \end{array}$$

$$7. \quad \begin{array}{r} 65 \text{ R}7 \\ 8 \overline{)527} \end{array}$$

$$8. \quad \begin{array}{r} 923 \text{ R}1 \\ 4 \overline{)3,693} \end{array}$$

9. **Stretch Your Thinking** What is the greatest remainder you could have with the divisor 3? With the divisor 8? With the divisor 5? Explain.

The greatest remainder you could have with the divisor 3 is 2, with the divisor 8 is 7, and with the divisor 5 is 4. If the remainder is more than the divisor, another group can be divided into the dividend.

Homework

Solve by any method on a separate sheet of paper.
Then check your answer by rounding and estimating.

1. $3 \overline{)246}$ ⁸²

2. $6 \overline{)75}$ ^{12 R3}

3. $7 \overline{)60}$ ^{8 R4}

4. $3 \overline{)256}$ ^{85 R1}

5. $4 \overline{)805}$ ^{201 R1}

6. $5 \overline{)927}$ ^{185 R2}

7. $4 \overline{)325}$ ^{81 R1}

8. $4 \overline{)378}$ ^{94 R2}

9. $6 \overline{)432}$ ⁷²

10. $5 \overline{)1,838}$ ^{367 R3}

11. $4 \overline{)2,715}$ ^{678 R3}

12. $7 \overline{)3,042}$ ^{434 R4}

Solve.

Show your work.

13. The area of Matt's rectangular bedroom is 96 square feet.
If the room is 8 feet wide, how long is it?

$$\underline{96 \div 8 = 12 \text{ feet}}$$

14. The fourth-grade students at Lincoln Elementary School are attending an assembly. There are 7 equal rows of seats in the assembly hall. If there are 392 fourth-grade students, how many students will sit in each row?

$$\underline{392 \div 7 = 56 \text{ students}}$$

15. Pablo is packing books into crates. He has 9 crates. Each crate will contain the same number of books. If he has 234 books, how many books can he put into each crate?

$$\underline{234 \div 9 = 26 \text{ books}}$$

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 1,429 \\ + 3,882 \\ \hline 5,311 \end{array}$$

$$\begin{array}{r} 2. \quad 28,178 \\ - 13,428 \\ \hline 14,750 \end{array}$$

$$\begin{array}{r} 3. \quad 500,000 \\ - 61,835 \\ \hline 438,165 \end{array}$$

Sketch an area model for each exercise. Then find the product.

$$4. \quad 27 \times 59 \quad \underline{1,593}$$

$$5. \quad 36 \times 92 \quad \underline{3,312}$$

Check students' models.

Solve using any method.

$$6. \quad 9 \overline{)271} \quad \begin{array}{l} 30 \\ \text{R}1 \end{array}$$

$$7. \quad 6 \overline{)2,436} \quad \begin{array}{l} 406 \\ \text{R}0 \end{array}$$

$$8. \quad 4 \overline{)2,139} \quad \begin{array}{l} 534 \\ \text{R}3 \end{array}$$

9. Stretch Your Thinking Katherine is considering two new cell phone plans. She doesn't want to spend more for minutes she won't use. One plan allows up to 250 minutes per month for \$49, and the other plan allows up to 350 minutes per month for \$65. In the last 6 months, she used 1,470 minutes. Use estimating and an exact answer to determine the best cell phone plan for Katherine.

Possible answer: estimation $1,500 \div 5 = 300$ minutes.

Exact $1,470 \div 6 = 245$ minutes. Based on the exact

answer, Katherine could choose the plan with

250 minutes for \$49.

Homework

Solve. Write the remainder as a whole number.

$$1. \begin{array}{r} 1,001 \text{ R5} \\ 7 \overline{)7,012} \end{array}$$

$$2. \begin{array}{r} 934 \text{ R4} \\ 9 \overline{)8,410} \end{array}$$

$$3. \begin{array}{r} 3,912 \text{ R1} \\ 2 \overline{)7,825} \end{array}$$

$$4. \begin{array}{r} 702 \text{ R2} \\ 5 \overline{)3,512} \end{array}$$

$$5. \begin{array}{r} 1,103 \\ 6 \overline{)6,618} \end{array}$$

$$6. \begin{array}{r} 903 \text{ R1} \\ 8 \overline{)7,225} \end{array}$$

Solve. Then explain the meaning of the remainder.

7. Principal Clements wants to buy a pencil for each of the 57 fourth-graders in her school. The pencils come in packages of 6. How many packages does Principal Clements need to buy?

$57 \div 6 = 9 \text{ R3}$; The remainder makes it necessary to buy 10 packages instead of 9.

8. Tyler has 71 CDs in his collection. He places the CDs in a book that holds 4 CDs on each page. If Tyler fills each page, how many CDs will be on the last page?

$71 \div 4 = 17 \text{ R3}$; There are 3 CDs on the last page. The remainder is the answer to the question.

9. Amanda and her family are hiking a trail that is 46 miles long. They plan to hike exactly 7 miles each day. How many days will they hike exactly 7 miles?

$46 \div 7 = 6 \text{ R4}$; They will hike exactly 7 miles for 6 days. The remainder is not part of the question.

10. Cesar makes 123 ounces of trail mix. He puts an equal number of ounces in each of 9 bags. How many ounces of trail mix does Cesar have left over?

$123 \div 9 = 13 \text{ R6}$; There are 6 ounces of trail mix left over. The remainder is the answer to the question.

Remembering

The table shows the word count for each of five books in a series. Use the table to answer each question. Estimate to check.

1. How many more words are there in Book 2 than in Book 1?

8,666 more words

estimate: $91,000 - 83,000 = 8,000$

2. What is the difference between the book with the greatest number of words and the book with the least number of words?

36,392 words

estimate: $110,000 - 73,000 = 37,000$

Book	Word Count
1	82,647
2	91,313
3	109,842
4	73,450
5	90,216

Solve each multiplication problem using any method.

Use rounding and estimation to check your work. **Check students' work.**

3. 39×52

2,028

4. 81×76

6,156

5. 18×63

1,134

6. 45×91

4,095

Solve using any method. Then check your answer by rounding and estimating.

7. $9 \overline{)65} \text{ R}2$

8. $96 \overline{)289} \text{ R}1$

9. $628 \overline{)5,024}$

10. **Stretch Your Thinking** Write a word problem that is solved by $43 \div 5 = 8 \text{ R}3$, in which the remainder is the only part needed to answer the question.

Answers will vary. Possible answer: Mattie shares

43 stickers evenly with 5 friends and keeps the stickers left over. How many stickers does Mattie keep?

Homework

When the Kent Elementary School fourth-grade classes were studying butterflies, they took a field trip to a butterfly garden.

Use the correct operation or combination of operations to solve each problem.

Show your work.

1. Nine buses of students, teachers, and parents went on the field trip. If 5 of the buses held 63 people each and the other buses held 54 people each, how many people went in all?

$$5 \times 63 = 315; 4 \times 54 = 216;$$

$$315 + 216 = 531 \text{ people}$$

2. Some female butterflies lay their eggs in clusters. If one kind of butterfly lays 12 eggs at a time and another kind lays 18 eggs at a time, how many eggs would 8 of each kind of butterfly lay?

$$8 \times 12 = 96; 8 \times 18 = 144; 96 + 144 = 240;$$

$$240 \text{ eggs}$$

3. Teachers divided students into groups of 3. Each group of 3 wrote a report that had 9 pictures in it. The students used 585 pictures altogether. How many students were there in all?

$$585 \div 9 = 65; 65 \times 3 = 195; 195 \text{ students}$$

4. Driving to and from the butterfly garden took 45 minutes each way. The students spent 3 hours in the garden and 30 minutes eating lunch. If the groups left the school at 9:00 A.M., what time did they get back?

$$45 + 45 + 30 = 120 \text{ minutes} = 2 \text{ hours};$$

$$2 \text{ hours} + 3 \text{ hours} = 5 \text{ hours};$$

$$9:00 \text{ A.M.} + 5 \text{ hours} = 2:00 \text{ P.M.}$$

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 5,833 \\ - 2,159 \\ \hline 3,674 \end{array}$$

$$\begin{array}{r} 2. \quad 49,802 \\ + 15,658 \\ \hline 65,460 \end{array}$$

$$\begin{array}{r} 3. \quad 98,139 \\ - 27,345 \\ \hline 70,794 \end{array}$$

Sketch rectangles and solve by any method that relates to your sketch.

$$4. \quad 5 \times 6,294 \quad \underline{31,470}$$

$$5. \quad 8 \times 1,375 \quad \underline{11,000}$$

Check students' rectangles.

Solve. Then explain the meaning of the remainder.

6. Vince has 138 artist trading cards. He is arranging them in an album that can hold 4 to a page. If Vince fills each page as he goes, how many cards are on the last page?

$138 \div 4 = 34 \text{ R}2$; There are 2 cards on the last page. The remainder is the answer to the question.

7. Amber is doing an online math drill program. She has exactly 300 seconds to complete as many problems as she can. If it takes Amber 7 seconds to do each problem, how many problems does she complete?

$300 \div 7 = 42 \text{ R}6$; Amber completes 42 problems. The remainder means that after 42 problems, Amber had 6 seconds to go, which was not enough to complete another problem.

8. **Stretch Your Thinking** In the fall, Wesley swam a race in 58 seconds, and Aiden swam it in 54 seconds. In the spring, they swam the same race. Wesley did it in 53 seconds, and Aiden did it in 52 seconds. How much more of an improvement was one boy's race time over the other boy's race time? Explain.

3 seconds; Wesley's time improved by $58 - 53 = 5$ seconds.

Aiden's time improved by $54 - 52 = 2$ seconds. Wesley improved by $5 - 2 = 3$ more seconds than Aiden.

Homework**Divide.***Show your work.*

1.
$$\begin{array}{r} 91 \text{ R1} \\ 5 \overline{)456} \end{array}$$

2.
$$\begin{array}{r} 311 \text{ R3} \\ 4 \overline{)1,247} \end{array}$$

3.
$$\begin{array}{r} 118 \text{ R3} \\ 7 \overline{)829} \end{array}$$

4.
$$\begin{array}{r} 375 \text{ R4} \\ 6 \overline{)2,254} \end{array}$$

5.
$$\begin{array}{r} 243 \\ 3 \overline{)729} \end{array}$$

6.
$$\begin{array}{r} 82 \text{ R2} \\ 8 \overline{)658} \end{array}$$

7.
$$\begin{array}{r} 493 \\ 9 \overline{)4,437} \end{array}$$

8.
$$\begin{array}{r} 729 \text{ R4} \\ 5 \overline{)3,649} \end{array}$$

9.
$$\begin{array}{r} 145 \text{ R5} \\ 6 \overline{)875} \end{array}$$

Solve.*Show your work.*

10. Sharon has 1,278 beads to make bracelets. She sorts them into 6 different containers so she can have an equal amount of beads in each container. How many beads will Sharon put in each container?

213 beads

11. Kyle collects baseball cards. He places his cards into an album that has 9 cards on each page. He has a total of 483 baseball cards. He fills each page before putting cards on the next page. How many cards will be on the last page?

6 cards

Remembering

Answer each question about the information in the table.

1. What was the total amount donated to the theatre in 2007 and 2009 combined?

\$81,552

2. How much more was donated in 2010 than in 2006?

\$59,757

Donations to a Children's Theatre

Year	Donations
2006	\$26,304
2007	\$28,315
2008	\$63,418
2009	\$53,237
2010	\$86,061

Solve using any method and show your work.

Check your work with estimation.

3. $26 \times 6 = \underline{156}$

4. $932 \times 7 = \underline{6,524}$

5. $2,107 \times 8 = \underline{16,856}$

Use the correct operation or combination of operations to solve the problem.

Show your work.

6. Selena sold 9 homemade bracelets for \$12 each and 14 pairs of earrings for \$8 each. How much did she make in sales?

$9 \times \$12 = \$108; 14 \times \$8 = \$112; \$108 + \$112 = \$220$

7. **Stretch Your Thinking** At a skating rink, Emma makes 21 laps at a steady pace during a 5-minute song. She divided $21 \div 5 = 4 \text{ R}1$ and says that means she did $4 + 1 = 5$ laps each minute. Explain Emma's error.

Emma should not have added the remainder to the quotient. The answer 4 R1 means Emma made 4 full laps and part of another lap each minute.

Homework

Simplify each expression.

1. $11m - 9m = \underline{2m}$

2. $y + 8y = \underline{9y}$

3. $13s - s = \underline{12s}$

4. $d + 2d + d = \underline{4d}$

5. $(9b - b) - 2b = \underline{6b}$

6. $104z + z = \underline{105z}$

7. $21 - (10 - 5) = \underline{16}$

8. $(900 - 100) - 100 = \underline{700}$

9. $90 - (50 - 1) = \underline{41}$

10. $18 \div (27 \div 9) = \underline{6}$

11. $(63 \div 7) \div 9 = \underline{1}$

12. $40 \div (36 \div 9) = \underline{10}$

13. $(48 \div 6) \cdot (11 - 9) = \underline{16}$

14. $(3 + 17) \div (16 - 12) = \underline{5}$

15. $(15 + 10) - (50 \div 10) = \underline{20}$

16. $(19 + 11) \div (9 - 6) = \underline{10}$

Evaluate.

17. $c = 3$

$4 \cdot (7 - c)$

16

18. $r = 2$

$(42 \div 7) \cdot (r + 1)$

18

19. $w = 7$

$(72 \div 9) \cdot w$

56

20. $m = 0$

$(12 \div 3) \cdot (5 - m)$

20

21. $h = 14$

$45 \div (h - 5)$

5

22. $p = 19$

$(p + 1) \div (9 - 4)$

4

23. $v = 6$

$(18 - 9) + (2 + v)$

17

24. $t = 1$

$(7 \cdot 2) \div t$

14

25. $g = 10$

$(g + 90) \div (17 - 13)$

25

Solve for \square or n .

26. $7 \cdot (3 + 2) = 7 \cdot \square$

$\square = \underline{5}$

27. $(9 - 1) \cdot 4 = \square \cdot 4$

$\square = \underline{8}$

28. $8 \cdot (4 + 5) = \square \cdot 9$

$\square = \underline{8}$

29. $6 \cdot (8 - 8) = n$

$n = \underline{0}$

30. $(12 - 6) \div 3 = n$

$n = \underline{2}$

31. $(21 \div 7) \cdot (5 + 5) = n$

$n = \underline{30}$

Remembering

Read and write each number in expanded form.

1. ninety-six thousand, one hundred thirty-seven

$$\underline{90,000 + 6,000 + 100 + 30 + 7}$$

2. four hundred thirteen thousand, five hundred twenty-one

$$\underline{400,000 + 10,000 + 3,000 + 500 + 20 + 1}$$

3. seven hundred eight thousand, fifty-three

$$\underline{700,000 + 8,000 + 50 + 3}$$

4. six hundred thirty thousand, four hundred seventeen

$$\underline{600,000 + 30,000 + 400 + 10 + 7}$$

Find the area (in square units) of a rectangle with the given dimensions.

5. 4×6 24 sq units

6. 4×60 240 sq units

7. 5×9 45 sq units

8. 50×9 450 sq units

Divide with remainders.

$$\begin{array}{r} 3 \text{ R}1 \\ 9 \overline{)28} \\ \underline{-27} \\ 1 \end{array}$$

$$\begin{array}{r} 5 \text{ R}2 \\ 3 \overline{)17} \\ \underline{-15} \\ 2 \end{array}$$

$$\begin{array}{r} 7 \text{ R}4 \\ 6 \overline{)46} \\ \underline{-42} \\ 4 \end{array}$$

$$\begin{array}{r} 7 \text{ R}5 \\ 7 \overline{)54} \\ \underline{-49} \\ 5 \end{array}$$

13. **Stretch Your Thinking** Evaluate the expression $(d - 10) + (d \div 3)$ for $d = 21$. Explain each step.

Possible explanation: Write the expression.

Substitute 21 for d in the expression: $(21 - 10)$

+ $(21 \div 3)$. Simplify $(21 - 10)$ and $(21 \div 3)$ first

because they are in parentheses. $21 - 10 = 11$

and $21 \div 3 = 7$. Add 11 and 7 to get 18.

Homework

Write = or \neq to make each statement true.

1. $5 + 2 + 6 \neq 6 + 7$

2. $90 \neq 110 - 9$

3. $70 \neq 30 + 30$

4. $70 = 95 - 25$

5. $2 + 8 + 10 \neq 30$

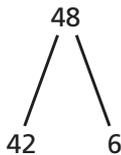
6. $27 - 10 = 14 + 3$

7. $51 + 99 = 150$

8. $35 \neq 100 - 55$

9. $50 \neq 20 + 5 + 20$

10. Write the eight related addition and subtraction equations for the break-apart drawing.



$$48 = 42 + 6$$

$$42 + 6 = 48$$

$$48 = 6 + 42$$

$$6 + 42 = 48$$

$$42 = 48 - 6$$

$$48 - 6 = 42$$

$$6 = 48 - 42$$

$$48 - 42 = 6$$

Write an equation to solve the problem. Draw a model if you need to. Equations may vary. Check students' models.

Show your work.

11. There were some people at the arts and crafts fair. Then 347 people went home. Now 498 people are left at the fair. How many people were at the fair to start?

$$p - 347 = 498; p = 498 + 347;$$

$$p = 845; 845 \text{ people}$$

12. A group of scientists spends 3,980 hours observing the behavior of monarch butterflies. They spend some more hours recording their observations. Altogether, the scientists spend 5,726 hours observing the butterflies and recording their observations. How many hours do the scientists spend recording their observations?

$$3,980 + r = 5,726; r = 5,726 - 3,980;$$

$$r = 1,746; 1,746 \text{ hours}$$

Remembering

Solve.

1. What is 538,152 rounded to the nearest:

a. hundred? 538,200

b. thousand? 538,000

c. ten thousand? 540,000

d. hundred thousand? 500,000

Draw a rectangle model. Find the tens product, the ones product, and the total product.

2. 3×65

	60	+	5
3	$3 \times 60 = 180$		$3 \times 5 = 15$

$$\begin{array}{r} 180 \\ + 15 \\ \hline 195 \end{array}$$

3. 8×29

	20	+	9
8	$8 \times 20 = 160$		$8 \times 9 = 72$

$$\begin{array}{r} 160 \\ + 72 \\ \hline 232 \end{array}$$

Evaluate each expression.

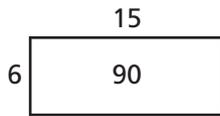
4. $(12 - 4) \cdot (6 + 3) = \underline{72}$

5. $(8 \div 2) + (12 - 2) = \underline{14}$

6. **Stretch Your Thinking** There were 381 books sold at a children's used book fair. At the end of the day, there were still 493 books remaining. Samantha says there were 112 books at the start of the book fair. Explain her error. How many books were there at the start of the book fair? **Possible explanation:** Samantha subtracted 381 from 493. She should have added the books sold and the remaining books to find how many books there were at the start of the book fair. $381 + 493 = 874$ books

Homework

1. Write the eight related multiplication and division equations for the rectangle model below.



$$\underline{90 = 15 \times 6}$$

$$\underline{15 \times 6 = 90}$$

$$\underline{90 = 6 \times 15}$$

$$\underline{6 \times 15 = 90}$$

$$\underline{15 = 90 \div 6}$$

$$\underline{90 \div 15 = 6}$$

$$\underline{6 = 90 \div 15}$$

$$\underline{90 \div 6 = 15}$$

Solve each equation.

2. $r = 200 \div 5$

$$r = \underline{40}$$

3. $12 \times d = 84$

$$d = \underline{7}$$

4. $80 \div 10 = n$

$$n = \underline{8}$$

5. $120 = 10 \times m$

$$m = \underline{12}$$

6. $88 = 8 \times c$

$$c = \underline{11}$$

7. $100 \div q = 20$

$$q = \underline{5}$$

Write an equation to solve the problem. Draw a model

if you need to. Equations may vary. Check students' models.

8. Lucy bought some shrubs to plant in her garden. Each shrub cost \$9. If Lucy spent \$216 in all, how many shrubs did she buy?

Show your work.

$$\underline{s \times 9 = 216; s = 216 \div 9;}$$

$$\underline{s = 24; 24 \text{ shrubs}}$$

9. Jeremiah has 592 flyers in stacks of 8 flyers each. How many stacks of flyers did Jeremiah make?

$$\underline{f = 592 \div 8; f = 74; 74 \text{ stacks}}$$

10. The apples from an average-sized tree will fill 20 baskets. If an orchard has 17 average-sized trees, how many baskets of apples can it produce?

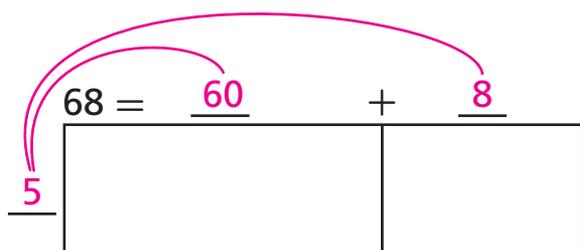
$$\underline{20 \times 17 = b; 20 \times 17 = 340;}$$

$$\underline{b = 340; 340 \text{ baskets}}$$

Remembering

Use the Algebraic Notation Method to solve the problem.
Complete the steps.

1. $5 \cdot 68 = \underline{\hspace{2cm}}$ **340**



$$\begin{aligned} 5 \cdot 68 &= \underline{5} \cdot (\underline{60} + \underline{8}) \\ &= 300 + 40 \\ &= 340 \end{aligned}$$

Solve. Use the Place Value Sections and the Expanded Notation Methods for division.

2. $\underline{70} + \underline{8} = 78$

3	234	24
	- 210	- 24
	24	0

$$\begin{array}{r} 8 \\ 70 \overline{) 78} \\ \underline{- 70} \\ 24 \\ \underline{- 24} \\ 0 \end{array}$$

3. $\underline{50} + \underline{2} = 52$

9	468	18
	- 450	- 18
	18	0

$$\begin{array}{r} 2 \\ 50 \overline{) 52} \\ \underline{- 50} \\ 18 \\ \underline{- 18} \\ 0 \end{array}$$

Write = or \neq to make each statement true.

4. $40 + 40 \text{ (}\neq\text{)} 90$

5. $12 - 4 \text{ (}\neq\text{)} 12 + 4$

6. $4 + 7 \text{ (=)} 4 + 2 + 5$

7. $26 \text{ (=)} 30 - 4$

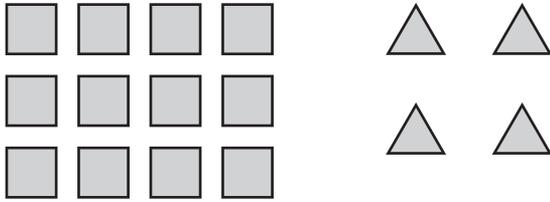
8. $8 + 10 + 2 \text{ (=)} 20$

9. $85 - 25 \text{ (}\neq\text{)} 65$

10. **Stretch Your Thinking** Write a word problem about puzzle pieces using the equation $9 \times p = 450$. Then solve the equation. **Possible answer:**
Emma has 9 jigsaw puzzles, each with the same number of pieces. If she has 450 puzzle pieces in all, how many pieces are in each puzzle? $p = 50$.
There are 50 pieces in each puzzle.

Homework

Use the shapes to answer Exercises 1–4.



1. How many squares? How many triangles?

Use multiplication to find the answers.

12 squares; 4 triangles

2. Because $4 \times \underline{3} = 12$, there are 3 times as many squares as triangles.

3. Write a multiplication equation that compares the number of squares s to the number of triangles t .

$s = 3t$

4. Write a division equation that compares the number of triangles t to the number of squares s .

$t = s \div 3$

Solve each comparison problem.

5. Stephen and Rocco were playing a video game. Stephen scored 2,500 points which is 5 times as many points as Rocco scored. How many points did Rocco score?

$5p = 2,500$, or $2,500 \div 5 = p$; $p = 500$; 500 points

6. Nick's dog weighs 72 pounds. Elizabeth's cat weighs 9 pounds. How many times as many pounds does Nick's dog weigh as Elizabeth's cat weighs?

$c \times 9 = 72$, or $72 \div 9 = c$; $c = 8$; 8 times as many pounds

Remembering

Solve using any numerical method. Use rounding and estimating to see if your answer makes sense. **Methods will vary.**

$$\begin{array}{r} 1. \quad 71 \\ \times 4 \\ \hline 284 \end{array}$$

$$\begin{array}{r} 2. \quad 36 \\ \times 5 \\ \hline 180 \end{array}$$

$$\begin{array}{r} 3. \quad 94 \\ \times 8 \\ \hline 752 \end{array}$$

$$\begin{array}{r} 4. \quad 77 \\ \times 6 \\ \hline 462 \end{array}$$

Divide.

$$5. \quad 6 \overline{)89} \quad \begin{array}{l} 14 \text{ R}5 \end{array}$$

$$6. \quad 5 \overline{)485} \quad \begin{array}{l} 97 \end{array}$$

$$7. \quad 4 \overline{)743} \quad \begin{array}{l} 185 \text{ R}3 \end{array}$$

Solve each equation.

$$8. \quad 9 \times n = 108$$

$$n = \underline{\quad 12 \quad}$$

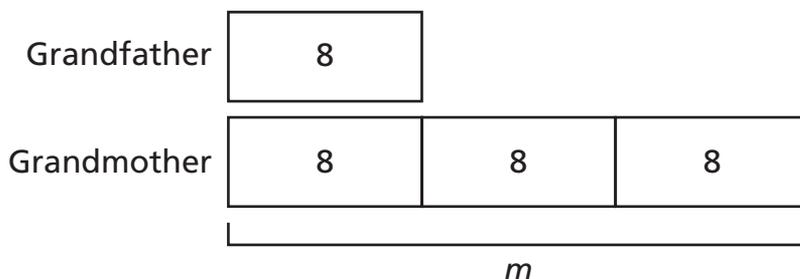
$$9. \quad 40 \div t = 10$$

$$t = \underline{\quad 4 \quad}$$

$$10. \quad r = 56 \div 7$$

$$r = \underline{\quad 8 \quad}$$

11. **Stretch Your Thinking** Write and solve a word problem to match the comparison bars shown below.



Possible answer: Davis talks to his grandfather on the phone for 8 minutes. He talks to his grandmother on the phone 3 times as long as he talks with his grandfather. How many minutes does Davis talk to his grandmother on the phone? $3 \times 8 = 24$; 24 minutes

Homework

Write and solve an equation to solve each problem.

Show your work.

Draw comparison bars when needed.

Equations and models may vary.

1. This year, a business had profits of \$8,040. This is 4 times as great as the profits that the business had last year. What were last year's profits?

$$p \times 4 = 8,040 \text{ or } 8,040 \div 4 = p; p = 2,010; \$2,010$$

2. In July, 74,371 people visited an art museum. In August 95,595 people visited the art museum. How many fewer people visited the art museum in July than in August?

$$95,595 - 74,371 = p; p = 21,224; 21,224 \text{ fewer people}$$

3. Drake has 36 animal stickers. Brenda has 9 animal stickers. How many times as many animal stickers does Drake have as Brenda has?

$$s \cdot 9 = 36 \text{ or } 36 \div 9 = s; s = 4; 4 \text{ times as many stickers}$$

4. A game is being watched by 60 adults and some children. If there are 20 more adults than children, how many children are watching the game?

$$60 - 20 = c; c = 40; 40 \text{ children}$$

5. During the first lunch period, 54 students ate hot lunch. This is 9 fewer students than ate hot lunch during the second lunch period. How many students ate hot lunch during the second lunch period?

$$54 + 9 = s; s = 63; 63 \text{ students}$$

6. The Jenkins Family traveled 750 miles by car during the summer. The Palmer Family traveled 3 times as many miles by car this summer. How many miles did the Palmer Family travel?

$$750 \times 3 = m; m = 2,250; 2,250 \text{ miles}$$

Remembering

Copy each exercise, aligning the places correctly. Then add.

1. $11,931 + 3,428$ **15,359**

2. $25,422 + 89,360$ **114,782**

Draw a rectangle model. Solve using any method that relates to the model.

3. 3×428 1,284

4. 7×519 3,633

Check students' work.

Write and solve an equation to solve the problem.

Draw comparison bars if you need to.

Equations may vary.

5. Virginia sold 84 rolls of wrapping paper this year. She sold 3 times as many rolls of wrapping paper this year as she sold last year. How many rolls of wrapping paper did Virginia sell last year?

$84 \div 3 = r; r = 28; 28$ rolls of wrapping paper

6. **Stretch Your Thinking** There are 1,438 boys and 1,196 girls at a school. How many fewer girls are there than boys?

Write the comparison question for this problem in a different way. Then write and solve an equation to solve the problem. Draw comparison bars if you need to.

How many more boys are there than girls?

$1,438 - 1,196 = d; d = 242$ There are

242 more boys than girls.

Homework

The graph below shows the amount of snow recorded each month last winter. Use the graph for Problems 1–6.

1. During which month was the amount of snow recorded 12 inches greater than the amount of snow recorded in December?

February

2. How many fewer inches of snow were recorded in March than were recorded in February?

18 fewer inches

3. The total amount of snow shown in the graph is 4 times as much snow as was recorded during the winter of 2004. How much snow was recorded during the winter of 2004?

13 inches

4. Write an addition equation and a subtraction equation that compare the number of inches of snow recorded during December (d) to the number of inches of snow recorded during March (m).

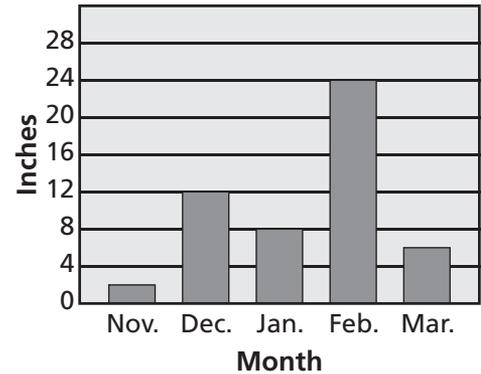
$d = m + 6, m = d - 6$

5. Write a multiplication equation and a division equation that compare the number of inches of snow recorded during November (n) to the number of inches of snow recorded during January (j).

$j = 4n, n = j \div 4$

6. On a separate sheet of paper, write a sentence about the graph that contains the words *times as much*. **Answers will vary.**

Snowfall Last Winter



Remembering

Sketch an area model for each exercise. Then find the product.

1. 28×45 1,260

2. 53×96 5,088

Check students' models.

Solve using any method.

3. $9 \overline{)506}$ ^{56 R2}

4. $2 \overline{)538}$ ²⁶⁹

5. $7 \overline{)8,165}$ ^{1,166 R3}

Write and solve an equation to solve each problem.

Draw comparison bars when needed. **Equations may vary.**

Show your work.

6. Benjamin received 52 emails at work today. This is 4 times as many emails as he received yesterday. How many emails did Benjamin receive yesterday?

$52 = 4e; e = 13; 13 \text{ emails}$

7. There are 327 third-grade students on a field trip at the history museum. There are 423 fourth-grade students on the same field trip. How many fewer third-grade students are there than fourth-grade students on the field trip?

$423 - 327 = s; s = 96; 96 \text{ fewer third-grade students}$

8. **Stretch Your Thinking** Look at the graph. Tatiana says there are 4 more dog owners than fish owners in the classroom. Explain Tatiana's error. Then write an equation that compares the numbers of dog owners and fish owners in the classroom.

Tatiana didn't use the key showing each picture equals 2 students.

Possible equations: $12 - 4 = 8, 8 + 4 = 12.$

Pet Owners in the Classroom	
Pet	
Cat	
Bird	
Dog	
Fish	

 = 2 students

Homework

Use an equation to solve.

Show your work.

1. The soccer club has 127 members. The baseball club has 97 members. Both clubs will meet to discuss a fundraiser. The members will be seated at tables of 8 members each. How many tables will they use?

$$(127 + 97) \div 8 = t; t = 28; 28 \text{ tables}$$

2. A hardware store pays \$3,500 for 42 lawnmowers. Then the store sells the lawnmowers for \$99 each. How much profit does the store make from the lawnmower sales?

$$(42 \times \$99) - \$3,500 = l; l = 658; \$658$$

3. George buys a set of 224 stamps. He gives 44 stamps to a friend. Then he places the remaining stamps into an album with 5 stamps on each page. How many pages does he fill in his album?

$$(224 - 44) \div 5 = s; s = 36; 36 \text{ pages}$$

4. Shane and his family go to the movie theater and buy 6 tickets for \$12 each. Then they spend a total of \$31 for popcorn and drinks. How much did Shane and his family spend for tickets, popcorn and drinks at the movie theater?

$$(6 \times \$12) + \$31 = m; m = 103; \$103$$

5. Last year, 226 people attended the school graduation ceremony. This year, the school expects 125 more people than last year. The school has arranged for a van to transport people from the parking area to the ceremony. Each van holds 9 people. How many trips will the van make?

$$(226 + 125) \div 9 = v; v = 39; 39 \text{ trips}$$

Remembering

Solve each multiplication problem, using any method.

Use rounding and estimation to check your work. **Check students' work.**

1. 22×58

1,276

2. 34×91

3,094

3. 63×72

4,536

4. 17×56

952

Solve by using any method. Then check your answer by rounding and estimating.

5. $9 \overline{)39}$ ^{4 R3}

6. $4 \overline{)168}$ ⁴²

7. $5 \overline{)4,204}$ ^{840 R4}

The graph shows the number of points Derek scored during his first five basketball games.

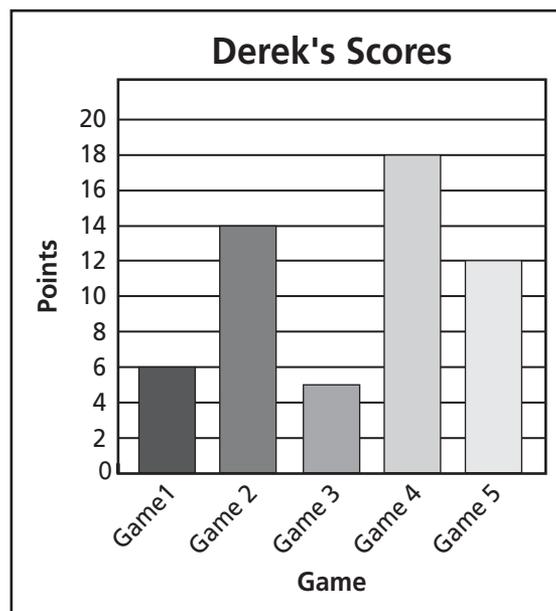
8. Write a multiplication equation and a division equation that compare the number of points Derek scored during Game 1 (x) to the number of points Derek scored during Game 4 (y).

$y = 3x, x = y \div 3$

9. **Stretch Your Thinking** There will be 138 people at a fundraising auction. Each table seats six. An additional 3 tables are needed to display the auction items. What is the minimum number of tables that are needed for the fundraiser? Which equation *cannot* be used to answer this question? Explain.

$$138 \div (6 + 3) = t \quad (138 \div 6) + 3 = t$$

$138 \div (6 + 3) = t$ cannot be used. The parentheses around $6 + 3$ tell you to add first. But you must add the 3 item tables after finding the number of tables needed for seating. $t = 26$



Homework**Use an equation to solve.***Show your work.*

1. Rosa and Kate both went shopping. Kate bought a jacket for \$45 and boots for \$42. Rosa bought jeans for \$27, a sweater for \$22, and sneakers. They both spent the same exact amount of money. How much were Rosa's sneakers?
 $(\$45 + \$42) - (\$27 + \$22) = s; s = 38; \$38$
-

2. Kyle works at a bakery on weekends. On Saturday, Kyle needs to make 120 muffins. Each recipe makes 8 muffins and uses 2 cups of flour. On Sunday, he needs to bake a large batch of cookies that uses 6 cups of flour. How many cups of flour will Kyle use to bake the muffins and the cookies?
 $(120 \div 8 \times 2) + 6 = f; f = 36; 36 \text{ cups of flour}$
-

3. A toy factory made 715 small stuffed bears and packed them in boxes with 5 bears in each box. Then they made 693 large stuffed bears and packed them in boxes with 3 bears in each box. All the boxes of small and large stuffed bears are loaded into a truck for delivery. How many boxes are loaded into the truck?
 $(715 \div 5) + (693 \div 3) = b; b = 374; 374 \text{ boxes}$
-

4. Last summer, Chris went to Europe and bought postcards from the cities he visited. In France, he visited 6 cities and bought 11 postcards in each city. In Italy, he visited 7 cities and bought 9 postcards in each city. In Spain, he visited 10 cities and bought 15 postcards in each city. How many postcards did Chris buy in Europe?
 $6 \times 11 + 7 \times 9 + 10 \times 15 = p; p = 279; 279$
-

5. Three fourth grade classes went on a field trip to see a play. Each class had 19 students and 2 adults attending. The rows in the playhouse each seat 9 people. How many rows did the fourth grade classes and adults take up at the playhouse?
 $3 \times (19 + 2) \div 9 = r; r = 7; 7 \text{ rows}$
-

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 9,000 \\ - 5,613 \\ \hline 3,387 \end{array}$$

$$\begin{array}{r} 2. \quad 317,492 \\ + 36,057 \\ \hline 353,549 \end{array}$$

$$\begin{array}{r} 3. \quad 659,741 \\ - 652,438 \\ \hline 7,303 \end{array}$$

Solve. Then explain the meaning of the remainder.

4. Jessica needs to bake 50 muffins. Her baking pan holds 12 muffins. How many rounds of baking will she need to do?

$50 \div 12 = 4 \text{ R}2$; Jessica will need to do 5 rounds of baking. The remainder makes it necessary for her to do 5 rounds of baking instead of 4 rounds of baking.

Use an equation to solve. Equations may vary.

Show your work.

5. At the fair, Hannah bought her family 5 hot dogs for \$3 each and a pitcher of lemonade for \$6. How much money did she spend in all?

$$(5 \times \$3) + \$6 = s; s = 21; \$21$$

6. Reggie is keeping 7 of his 31 stuffed animals and splitting the remainder of his collection evenly among his 3 younger sisters. How many stuffed animals does each sister get?

$$(31 - 7) \div 3 = a; a = 8; 8 \text{ animals}$$

7. **Stretch Your Thinking** Write a word problem using the equation $(\$60 + \$3 - \$15) \div \$4 = w$. Then solve the equation to solve the problem. Possible answer:

Kelli wants to buy a craft kit for \$60. She will also pay \$3 in tax. Kelli plans to save \$4 each week until she has enough money. If her mother gives her \$15 toward the cost of the craft kit, for how many weeks does Kelli need to save money?

$$(\$60 + \$3 - \$15) \div \$4 = w; \$48 \div \$4 = w; 12 \text{ weeks.}$$

Homework

Solve each problem.

1. $5 \times 7 + 9 = t$

$35 + 9 = 44; t = 44$

2. $9 \times (1 + 3) = m$

$9 \times 4 = 36; m = 36$

3. $7 - 2 \times 2 = k$

$7 - 4 = 3; k = 3$

4. $(7 \times 2) + (4 \times 9) = w$

$14 + 36 = 50; w = 50$

5. $(7 - 2) \times (3 + 2) = r$

$5 \times 5 = 25; r = 25$

6. $8 \times (12 - 7) = v$

$8 \times 5 = 40; v = 40$

7. Whitney and Georgia are at the snack bar buying food for their family. Sandwiches cost \$4 each. Salads cost \$2 each. How much money will it cost them to buy 5 sandwiches and 7 salads?

 $\$34$

8. Lisa put tulips and roses into vases. Each vase has 12 flowers. The red vase has 7 tulips. The blue vase has twice as many roses as the red vase. How many roses are in the blue vase?

10 roses

9. Pam has 9 bags of apples. Each bag contains 6 apples. There are 3 bags of red apples and 1 bag of green apples. The rest of the bags contain yellow apples. How many more yellow apples are there than red apples?

12 more yellow apples

10. Clay works on a farm. He packaged eggs into containers that hold 1 dozen eggs each. He filled 4 containers with white eggs and 5 containers with brown eggs. How many eggs did Clay collect? Hint: one dozen eggs = 12 eggs

108 eggs

Remembering

Subtract. Show your new groups.

$$\begin{array}{r} 1. \quad 3,146 \\ - 1,960 \\ \hline 1,186 \end{array}$$

$$\begin{array}{r} 2. \quad 7,504 \\ - 2,738 \\ \hline 4,766 \end{array}$$

$$\begin{array}{r} 3. \quad 6,000 \\ - 5,241 \\ \hline 759 \end{array}$$

Solve using any method and show your work.

Use estimation to check your work.

$$\begin{array}{r} 4. \quad 23 \times 88 \\ \hline 2,024 \end{array}$$

$$\begin{array}{r} 5. \quad 71 \times 49 \\ \hline 3,479 \end{array}$$

$$\begin{array}{r} 6. \quad 62 \times 67 \\ \hline 4,154 \end{array}$$

$$\begin{array}{r} 7. \quad 15 \times 38 \\ \hline 570 \end{array}$$

Use an equation to solve. Equations may vary.

8. An audio book is made up of 8 CDs. Each of the first 7 CDs is 42 minutes long and the final CD is 26 minutes long. Mark plans to listen to the book the same number of minutes for 8 days. How many minutes each day will Mark listen to the audio book?

$$(7 \times 42 + 26) \div 8 = m; m = 40; 40 \text{ minutes}$$

9. **Stretch Your Thinking** A sign shows the price per pound for several bulk food items. Use the information to write a word problem that requires at least 3 steps to solve. Then solve your problem

Possible answer: Katy buys 3 pounds of snack

mix, 2 pounds of wild rice, and 4 pounds of

dried fruit. She gives the cashier \$40. When

Katy gets home, her neighbor buys 1 pound

of the dried fruit and 1 pound of the wild

rice from her. How much money does Katy

have now? \$8

Food Item	Cost per pound
mixed nuts	\$5
dried fruit	\$3
snack mix	\$7
wild rice	\$2
red lentils	\$4

Homework

List all the factor pairs for each number.

1. 49

1 and 49; 7 and 7

2. 71

1 and 71

3. 18

1 and 18; 2 and 9; 3 and 6

4. 57

1 and 57

Write whether each number is *prime* or *composite*.

5. 50

composite

6. 29

prime

7. 81

composite

8. 95

composite

9. 19

prime

10. 54

composite

Tell whether 6 is a factor of each number. Write *yes* or *no*.

11. 6

yes

12. 80

no

13. 36

yes

14. 72

yes

Tell whether each number is a multiple of 8. Write *yes* or *no*.

15. 64

yes

16. 32

yes

17. 88

yes

18. 18

no

Use the rule to complete the pattern.

19. Rule: skip count by 11

11, 22, 33, 44, 55, 66, 77, 88, 99

20. Rule: skip count by 9

9, 18, 27, 36, 45, 54, 63, 72, 81, 90

21. Rule: skip count by 8

8, 16, 24, 32, 40, 48, 56, 64, 72, 80

Remembering

Draw a rectangle model. Solve using any method that relates to the model.

1. $8 \times 1,593 = \underline{12,744}$

2. $3 \times 6,247 = \underline{18,741}$

Check students' work.

Use the correct operation or combination of operations to solve the problem.

3. Melina has 4 sheets of wacky face stickers with 24 stickers on each sheet. Melina cuts each sticker individually from the sheet. She then divides them evenly into 3 piles to give to friends. How many stickers are in each pile?

32 stickers

Solve.

4. $5 \times 4 + 7 = g = \underline{27}$

5. $(3 \times 7) + (2 \times 10) = h = \underline{41}$

6. $16 - (5 \times 3) = m = \underline{1}$

7. $(9 - 3) \times (2 + 7) = l = \underline{54}$

8. $(12 - 8) + (3 \times 3) = p = \underline{13}$

9. $(24 \div 4) + 19 = t = \underline{25}$

10. **Stretch Your Thinking** Use *prime* or *composite* to complete the sentence. Then explain your choice.

All even numbers greater than 2 are composite.

Possible explanation: I know all even numbers

greater than 2 are composite because they all have

1 and 2 as factors. Prime numbers have only 1 and

the number itself as factors. Composite numbers

have more than one factor pair.

Homework

Use the rule to find the next three terms in the pattern.

1. 2, 6, 18, 54, ...

Rule: multiply by 3

162, 486, 1,458

2. 115, 145, 175, 205, 235, ...

Rule: add 30

265, 295, 325

Use the rule to find the first ten terms in the pattern.

3. First term: 12

Rule: add 25

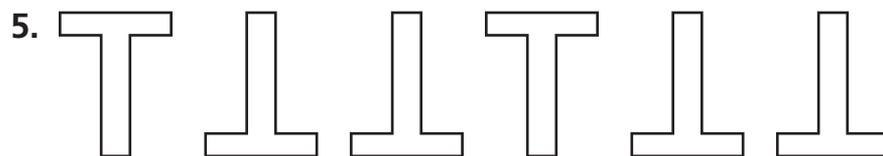
12, 37, 62, 87, 112, 137, 162, 187, 212, 237

Make a table to solve.

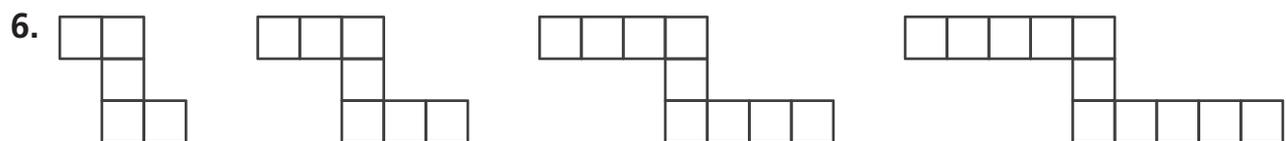
4. Jay saves \$2 in June, \$4 in July, \$6 in August, and \$8 in September. If the pattern continues, how much money will Jay save in December?

\$14

Describe the next term of each pattern.



The next term is a capital T.



The next term has 6 squares on the top row and 6 squares on the bottom row.

Remembering

Subtract.

$$\begin{array}{r} 1. \quad 491,562 \\ - 208,723 \\ \hline 282,839 \end{array}$$

$$\begin{array}{r} 2. \quad 392,119 \\ - 48,319 \\ \hline 343,800 \end{array}$$

Solve.

Show your work.

3. Sid unpacks 8 cartons of paper clips. Each carton contains 3,500 paper clips. How many paper clips is this altogether?
28,000 paper clips

4. Camille unpacks 102 boxes of red pens and 155 boxes of blue pens. Each box contains 8 pens. How many pens does she unpack altogether?
2,056 pens

List all of the factor pairs for each number.

5. 55 1 and 55; 5 and 11 6. 14 1 and 14; 2 and 7

7. **Stretch Your Thinking** During the first week of the year, Angelina's dad gives her \$10 and says that he will give her \$10 more each week for the rest of the year. At the end of the year, how much money will Angelina receive from her dad? (Hint: 1 year = 52 weeks) Make a table to show the pattern, and explain your answer.

Week	1	2	3	4	5
Dollars	10	20	30	40	50

\$520; She receives \$10 the first week, and \$10 more each week after that. Angelina's total for any given week of the year is 10 times the week number. That means during the last week of the year, week 52, she will receive $52 \times \$10 = \520 .

Homework

1. Design the blank pot below by drawing a pattern that meets the following conditions.

- ▶ At least three different shapes are used.
- ▶ The pattern begins with a square or a circle.
- ▶ The pattern is repeated at least two times.
- ▶ At least two different colors are used.

Check students' patterns.



2. Describe your pattern.

Answers will vary.

3. Suppose 184 students from Wilson Middle School complete this page at home. If each student draws 9 shapes on his or her pot, how many shapes in all would be drawn?

$184 \times 9 = 1,656$; 1,656 shapes

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 8,500 \\ - 1,265 \\ \hline 7,235 \end{array}$$

$$\begin{array}{r} 2. \quad 24,187 \\ - 14,856 \\ \hline 9,331 \end{array}$$

$$\begin{array}{r} 3. \quad 683,519 \\ + 292,744 \\ \hline 976,263 \end{array}$$

Solve using any method and show your work. Check your work with estimation.

$$\begin{array}{r} 4. \quad 19 \\ \times 82 \\ \hline 1,558 \end{array}$$

$$\begin{array}{r} 5. \quad 649 \\ \times 3 \\ \hline 1,947 \end{array}$$

$$\begin{array}{r} 6. \quad 2,934 \\ \times 8 \\ \hline 23,472 \end{array}$$

Use the rule to find the next five terms in the pattern.

7. 3, 6, 12, 24, ...

Rule: multiply by 2

48, 96, 192, 384, 768

8. 25, 60, 95, 130, ...

Rule: add 35

165, 200, 235, 270, 305

Use the rule to find the first ten terms in the pattern.

9. First term: 18

Rule: add 12

18, 30, 42, 54, 66, 78, 90, 102, 114, 126

10. **Stretch Your Thinking** For a cookie exchange, Kaiya bakes 2 pans of 12 chocolate chip cookies each, 3 pans of 16 lemon drops each, and 4 pans of 10 peanut butter cookies each. She is dividing the cookies into 8 tins, with an equal number of each type of cookie in each tin. How many of each type of cookie will be in each tin? How many cookies in all will be in each tin? Explain.

Possible explanation: $(2 \times 12) \div 8 = 24 \div 8 = 3$

chocolate chip cookies in each tin; $(3 \times 16) \div 8 =$

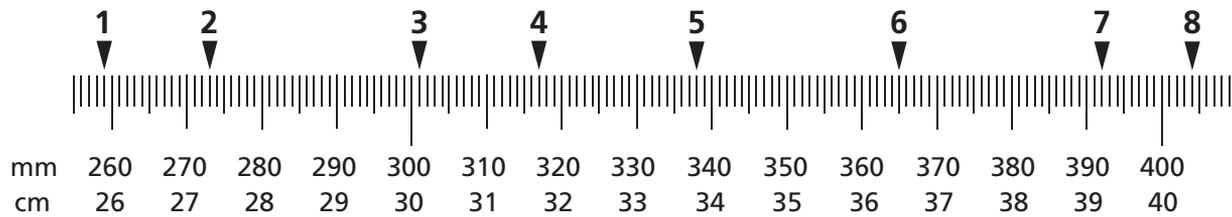
$48 \div 8 = 6$ lemon drops in each tin; $(4 \times 10) \div 8 =$

$40 \div 8 = 5$ peanut butter cookies in each tin; $3 +$

$6 + 5 = 14$ cookies in each tin.

Homework

Write each measurement in millimeters (mm). Round the measurement to the nearest centimeter (cm).



1. 259 mm rounds to 26 cm 2. 273 mm rounds to 27 cm
 3. 301 mm rounds to 30 cm 4. 317 mm rounds to 32 cm
 5. 338 mm rounds to 34 cm 6. 365 mm rounds to 37 cm
 7. 392 mm rounds to 39 cm 8. 404 mm rounds to 40 cm

Write a number sentence to answer each question.

9. How many meters are equal to 7 kilometers?

$$\underline{7 \text{ km} \times 1,000 = 7,000 \text{ m}}$$

10. How many centimeters are equal to 4 meters?

$$\underline{4 \text{ m} \times 100 = 400 \text{ cm}}$$

11. How many millimeters are equal to 15 centimeters?

$$\underline{15 \text{ cm} \times 10 = 150 \text{ mm}}$$

12. How many millimeters are equal to 12 meters?

$$\underline{12 \text{ m} \times 1,000 = 12,000 \text{ mm}}$$

13. How many centimeters are equal to 2 kilometers?

$$\underline{2 \text{ km} \times 1,000 = 2,000 \text{ m and } 2,000 \text{ m} \times 100 = 200,000 \text{ cm}}$$

Solve.

Show your work.

14. Chester has a ribbon that is 2 meters long. He wants to cut it into 5 equal pieces. How many centimeters long will each piece be?

$$\underline{2 \times 100 = 200 \text{ cm and } 200 \div 5 = 40 \text{ cm;}}$$

each piece will be 40 cm long.

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 7,295 \\ + 2,941 \\ \hline 10,236 \end{array}$$

$$\begin{array}{r} 2. \quad 84,366 \\ - 20,472 \\ \hline 63,894 \end{array}$$

$$\begin{array}{r} 3. \quad 541,000 \\ - 181,276 \\ \hline 359,724 \end{array}$$

Divide with remainders.

$$\begin{array}{r} 4. \quad 4 \overline{)31} \quad 7 \text{ R}3 \\ - 28 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 5. \quad 6 \overline{)44} \quad 7 \text{ R}2 \\ - 42 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 6. \quad 9 \overline{)32} \quad 3 \text{ R}5 \\ - 27 \\ \hline 5 \end{array}$$

Evaluate.

$$\begin{array}{l} 7. \quad t = 5 \\ (9 + t) \div 2 \\ \hline 7 \end{array}$$

$$\begin{array}{l} 8. \quad k = 25 \\ k \div (10 \div 2) \\ \hline 5 \end{array}$$

$$\begin{array}{l} 9. \quad p = 3 \\ (6 + p) \cdot (15 - 11) \\ \hline 36 \end{array}$$

$$\begin{array}{l} 10. \quad g = 2 \\ (g \div 2) \cdot 8 \\ \hline 8 \end{array}$$

$$\begin{array}{l} 11. \quad r = 5 \\ (15 - r) \cdot (9 - 3) \\ \hline 60 \end{array}$$

$$\begin{array}{l} 12. \quad x = 1 \\ (2 \cdot 8) \div (4 \div x) \\ \hline 4 \end{array}$$

13. **Stretch Your Thinking** Kyle says the number is greater when an object is measured in centimeters than in millimeters. Is Kyle correct? Explain.

No, Kyle is not correct. If an object has a length of 4 centimeters, it has the length of 40 millimeters.
40 > 4.

Homework**Complete.**

1. How many milliliters are equal to 3 L?
3,000 mL
2. How many milliliters are equal to 35 L?
35,000 mL
3. How many grams are in 40 kg?
40,000 g
4. How many grams are in 5,000 kg?
5,000,000 g

Solve.*Show your work.*

5. Every morning for breakfast, Mika drinks 20 cL of orange juice. How many milliliters of orange juice does she drink each day?
200 mL of orange juice
6. Angie's puppy weighed 3 kg when she first got it. Two years later, it weighed 9 kg. How many grams did the puppy gain?
6,000 g
7. Write and solve two word problems: one that involves converting units of liquid volume and one that involves converting units of mass.
Word problems will vary.

Remembering

Solve. Use the Place Value Sections Method and the Expanded Notation Method for division.

1. A coin candy machine contains 5,696 pieces of candy. With each quarter, a customer receives 8 pieces of candy. How many customers can use the candy machine before it must be refilled?

712 customers

$$\begin{array}{r} 2 \\ 10 \\ 700 \\ \hline 8 \overline{)5,696} \\ \underline{-5,600} \\ 96 \\ \underline{-80} \\ 16 \\ \underline{-16} \\ 0 \end{array} \quad \left. \begin{array}{l} 2 \\ 10 \\ 700 \end{array} \right\} 712$$

$$\begin{array}{r} \underline{7}00 + \underline{1}0 + \underline{2} = \underline{712} \\ 8 \begin{array}{|c|c|c|} \hline 5,696 & 96 & 16 \\ \hline \underline{-5,600} & \underline{-80} & \underline{-16} \\ \hline 96 & 16 & 0 \end{array} \end{array}$$

Write an equation to solve the problem. Draw a model if you need to. **Equations may vary. Check students' models.**

2. At the library one day, 1,742 books were checked out in the morning. Some more books were checked out in the afternoon. Altogether that day, 2,563 books were checked out. How many books were checked out of the library in the afternoon?

$$\underline{1,742 + b = 2,563; b = 2,563 - 1,742;}$$

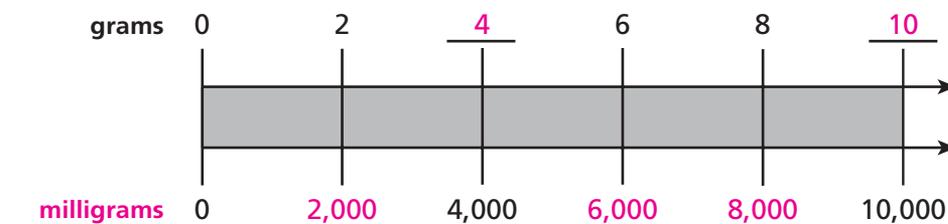
$$\underline{b = 821; 821 \text{ books}}$$

Write a number sentence to answer the question.

3. How many centimeters are equal to 6 meters?

$$\underline{6 \text{ m} \times 100 = 600 \text{ cm}}$$

4. **Stretch Your Thinking** Complete the double number line.



Homework

Convert each measurement.

1. 45 min = 2,700 sec

2. 2 hr = 120 min

3. 3 years = 156 weeks

4. 1 day = 1,440 min

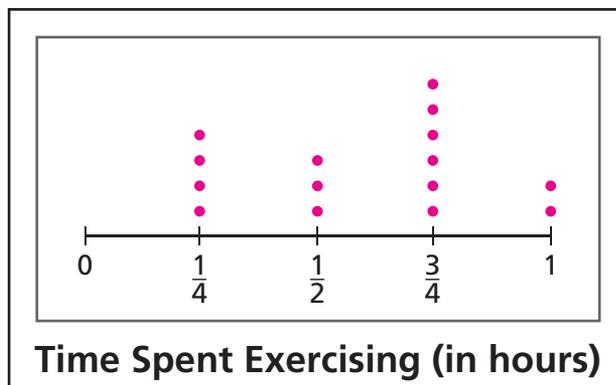
5. 6 weeks = 42 days

6. 18 days = 432 hours

Complete the line plot. Answer the questions using the line plot.

7. Melissa asked her classmates how much time they spend each day exercising. The table shows the data Melissa collected. Complete the line plot using the data from the table.

Time	Number
0 hour	0
$\frac{1}{4}$ hour	4
$\frac{1}{2}$ hour	3
$\frac{3}{4}$ hour	6
1 hour	2



- a. How many more students exercised for $\frac{3}{4}$ hour than $\frac{1}{4}$ hour? 2
- b. How many students did Melissa ask about how much time they exercise? 15

Solve.

8. Donald takes the bus to work. The bus ride is 37 minutes long. Donald gets on the bus at 7:22. At what time does Donald get off the bus?

7:59

9. Kinesha started her homework at 6:15. She finished at 7:32. How long did it take Kinesha to do her homework?

1 hour 17 minutes

Remembering

Solve. Use the Place Value Sections and the Expanded Notation Methods for division.

$$1. \quad \underline{3}00 + \underline{7}0 + \underline{9} = \underline{379}$$

5	1,895 - 1,500 395	395 - 350 45	45 - 45 0
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$$\begin{array}{r} 9 \\ 70 \\ 300 \end{array} \left. \vphantom{\begin{array}{r} 9 \\ 70 \\ 300 \end{array}} \right\} 379$$

$$\begin{array}{r} 5 \overline{)1,895} \\ - 1,500 \\ \hline 395 \\ - 350 \\ \hline 45 \\ - 45 \\ \hline 0 \end{array}$$

Solve each equation.

$$2. 180 \div m = 3$$

$$m = \underline{60}$$

$$3. r \times 9 = 108$$

$$r = \underline{12}$$

$$4. 350 \div 7 = p$$

$$p = \underline{50}$$

Complete.

5. How many grams are equal to 8 kilograms?

8,000 g

6. How many milliliters are equal to 14 centiliters?

140 mL

7. How many milligrams are equal to 200 grams?

200,000 mg

Solve.

Show your work.

8. A full box of paperclips weighs 150 grams. People use some paperclips from the box, and it now weighs 138 grams. How many milligrams lighter is the box?

12,000 mg

9. **Stretch Your Thinking** Cassie and her family go to a restaurant for dinner. They leave their house at 5:25 and arrive at the restaurant at 5:53. They leave the restaurant at 7:09. How long does it take for the family to arrive at the restaurant? How many minutes pass from the time they leave their house to the time they leave the restaurant?

28 minutes; 104 minutes

Homework

Complete the tables.

1.

Yards	Inches
3	108
6	216
9	324
12	432

2.

Miles	Feet
2	10,560
3	15,840
4	21,120
5	26,400

Solve.

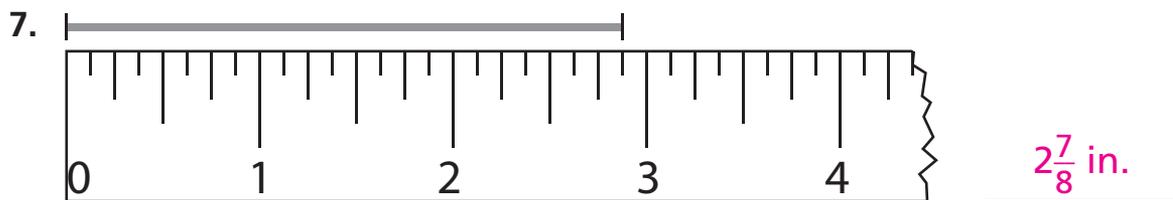
3. 4 ft = 48 in.

4. 3 miles = 5,280 yards

5. 11 yd = 33 ft

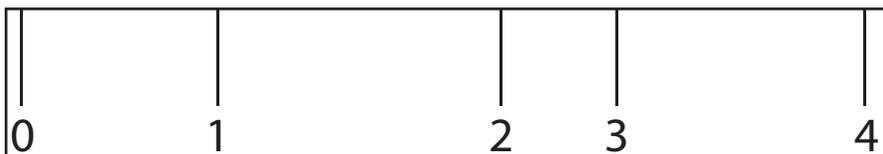
6. 26 ft = 312 in.

Write the measurement of the line segment to the nearest $\frac{1}{8}$ inch.



Solve.

8. Explain what is wrong with the ruler shown below.



Possible answer: the inches shown on the ruler
are not divided into equal sections. So, you
cannot measure in inches using this ruler.

Remembering

Divide.

$$1. \begin{array}{r} 97 \\ 6 \overline{)582} \end{array}$$

$$2. \begin{array}{r} 992 \text{ R}1 \\ 5 \overline{)4,961} \end{array}$$

$$3. \begin{array}{r} 904 \text{ R}6 \\ 7 \overline{)6,334} \end{array}$$

Solve the comparison problem.

4. Michael made \$265 taking care of his neighbors' pets this summer. This was 5 times the amount he made last summer. How much money did Michael make taking care of pets last summer?

$$\underline{m \times 5 = \$265, \text{ or } \$265 \div 5 = m; m = \$53; \$53}$$

Convert each measurement.

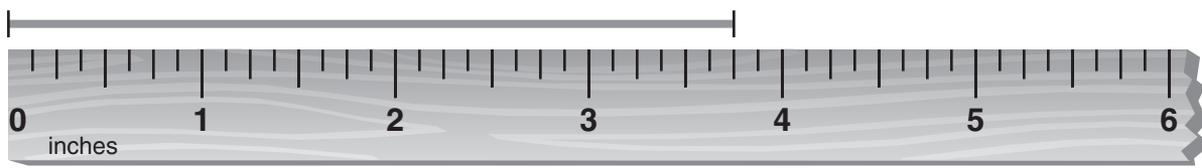
$$5. 9 \text{ days} = \underline{216} \text{ hrs}$$

$$6. 14 \text{ min} = \underline{840} \text{ sec}$$

$$7. 6 \text{ hrs} = \underline{360} \text{ min}$$

$$8. 4 \text{ weeks} = \underline{28} \text{ days}$$

9. **Stretch Your Thinking** Zack says that the line segment is $3\frac{7}{10}$ inches long. Explain Zack's error. What is the correct measurement of the line segment?



Possible answer: Zack may have thought each inch
on the ruler was divided into 10 equal parts. He may
have located 2 marks past half an inch as $5 + 2 = 7$
out of 10. Each inch is divided into 8 equal parts. The
correct measurement is $3\frac{6}{8}$ or $3\frac{3}{4}$ inches.

Homework**Solve.***Show your work.*

1. A female rabbit gave birth to 6 babies. Each baby weighed 4 ounces. How many ounces did the babies weigh in all?

24 ounces

2. One watermelon weighs 128 ounces. Another weighs 112 ounces. Which watermelon is heavier? By how many ounces?

128 ounces is heavier by 16 ounces

3. A box of cereal weighs 21 ounces. Does it weigh more or less than 1 pound? How much more or less?

more than 1 pound; 5 ounces more

4. Mark had 3 quarts of milk. How many pints of milk did Mark have?

6 pints

5. Trevon's mom bought 3 gallons of fruit juice at the store. How many fluid ounces of fruit juice did Trevon's mom buy?

384 fluid ounces

6. Marinda made a drink that contained 2 pints of apple juice, 3 pints of grape juice, and 2 pints of cranberry juice. How many pints of juice did Marinda make?

7 pints

Remembering

Solve using any method.

$$1. \begin{array}{r} 91 \text{ R6} \\ 7 \overline{)643} \end{array}$$

$$2. \begin{array}{r} 2,849 \\ 2 \overline{)5,698} \end{array}$$

$$3. \begin{array}{r} 2,228 \text{ R1} \\ 4 \overline{)8,913} \end{array}$$

Write and solve an equation to solve each problem.

Show your work.

Draw comparison bars when needed.

4. Chris swam 94 laps at a pool for a fundraiser. This is twice the number of laps he expected he would be able to swim. How many laps was Chris expecting to swim?

$$l \times 2 = 94 \text{ or } 94 \div 2 = l; l = 47; 47 \text{ laps}$$

5. Jackie drank 60 ounces of water today, which was 12 more ounces than she drank yesterday. How much water did Jackie drink yesterday?

$$w + 12 = 60; w = 48; 48 \text{ ounces}$$

Complete the tables.

6.

Feet	Inches
2	24
4	48
5	60
8	96

7.

Miles	Yards
3	5,280
4	7,040
8	14,080
10	17,600

8. **Stretch Your Thinking** Kai needs to pour 2 gallons of water into his fish tank. All he has is a measuring cup. How many cups of water should he put in the tank? Explain.

32 cups; I know that 1 gallon = 4 quarts, so

2 gallons = 8 quarts. I also know 1 quart = 4 cups.

Since Kai needs 8 quarts, that's 8×4 , or 32 cups.

Homework

Find the area and perimeter for rectangles with the lengths and widths shown.

1. $l = 5$ units

$w = 6$ units

$A = \underline{30 \text{ sq units}}$

$P = \underline{22 \text{ units}}$

2. $l = 8$ units

$w = 4$ units

$A = \underline{32 \text{ sq units}}$

$P = \underline{24 \text{ units}}$

3. $l = 7$ units

$w = 5$ units

$A = \underline{35 \text{ sq units}}$

$P = \underline{24 \text{ units}}$

4. $l = 4$ units

$w = 7$ units

$A = \underline{28 \text{ sq units}}$

$P = \underline{22 \text{ units}}$

5. **Challenge** Using only whole numbers, make as many different rectangles as you can that have either the same area or the same perimeter as the rectangles in Exercises 1–4. **Check students' work.**

Solve each word problem. Show the formula you used to find the answer.

Show your work.

6. Enzo is building a dog run that measures 10 feet by 9 feet. How many feet of fencing does he need to fence in the area?

$$\underline{38 \text{ ft}; 10 + 10 + 9 + 9}$$

7. A sheet of construction paper is 9 inches long and 11 inches wide. How many 1-inch squares of paper can Dwayne cut out of one sheet of paper?

$$\underline{99 \text{ 1-inch squares}; 9 \times 11}$$

8. Mieko has a rug that is 6 feet long and 8 feet wide. Her room measures 9 feet each way. Will the rug fit in her room? How do you know?

Yes; the length and the width of the rug are both shorter than the length and the width of the room.

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 7,382 \\ - 2,990 \\ \hline 4,392 \end{array}$$

$$\begin{array}{r} 2. \quad 47,291 \\ - 3,845 \\ \hline 43,446 \end{array}$$

$$\begin{array}{r} 3. \quad 573,019 \\ + 32,485 \\ \hline 605,504 \end{array}$$

Use an equation to solve.

4. A store pays \$715 for a shipment of 38 board games to stock their shelves. Each board game sells for \$24. How much profit does the store make on the sales of the board games?

Show your work.

$$(38 \times \$24) - \$715 = p; p = 197; \$197$$

Solve.

5. A preschool uses 4 gallons of milk a day. How many fluid ounces of milk does the preschool use in a day?

$$512 \text{ fluid ounces}$$

6. **Stretch Your Thinking** A bathroom has a length of 10 feet and a width of 9 feet. Kade wants to put down tiles on the floor that are each 1 square foot. Then he will put a baseboard along the edges where the walls meet the floor. How many tiles does Kade need? How much baseboard does he need? Show your work.

90 tiles; 38 feet of baseboard; The area of the floor is $10 \text{ feet} \times 9 \text{ feet} = 90 \text{ square feet}$. Since each tile is 1 square foot, he needs 90 tiles. The perimeter is $10 \text{ feet} + 9 \text{ feet} + 10 \text{ feet} + 9 \text{ feet} = 38 \text{ feet}$. Since the baseboard is going around the entire edge of the room, he needs 38 feet of baseboard.

Homework**Solve.***Show Your Work.*

1. Barbara has a rectangular shaped mouse pad. The longest side of the mouse pad is 8 inches and the shortest side is 3 inches. What is the perimeter and area of the mouse pad?

$$\text{Perimeter} = 22 \text{ inches; area} = 24 \text{ inches; } P = 8 + 8 + 3 + 3; A = 8 \times 3$$

2. Yeasmin has a cup with 27 milliliters of milk in it. She pours another 34 milliliters of milk into the cup. She then drinks 14 milliliters of the milk. How much milk is left in the cup?

$$47 \text{ milliliters; } 27 + 34 = 61; 61 - 14 = 47$$

3. John's dog weighed 7 pounds when he got him. The dog's weight tripled each year for two years. How many ounces does John's dog now weigh?

$$1,008 \text{ ounces; } 7 \times 3 = 21; 21 \times 3 = 63; 63 \times 16 = 1,008$$

4. The area of a rectangular shaped living room was 240 sq ft. The longest side of the room was 20 ft. What is the length of the small side of the room?

$$12 \text{ ft; } 240 \div 20 = 12$$

5. A grapefruit has a mass of 100 grams. A watermelon has a mass of 4 times the mass of the grapefruit. What is the mass of the watermelon, in centigrams?

$$40,000 \text{ centigrams; } 100 \times 4 = 400; 400 \times 100$$

6. Hannah ran 200 yards during recess. Juanita ran 340 yards during recess. In feet, how much further did Juanita run than Hannah?

$$420 \text{ ft; } 340 - 200 = 140; 140 \times 3 = 420$$

7. The perimeter of the rectangular shaped building is 960 ft. The shortest side of the building is 150 ft. What is the length of one of the longest sides of the building?

$$330 \text{ ft; } 150 + 150 = 300; 960 - 300 = 660; 660 \div 2 = 330$$

Remembering

Solve by any method. Then check your answer by rounding and estimating.

$$1. \begin{array}{r} 8 \text{ R1} \\ 6 \overline{)49} \end{array}$$

$$2. \begin{array}{r} 125 \text{ R2} \\ 4 \overline{)502} \end{array}$$

$$3. \begin{array}{r} 630 \text{ R1} \\ 6 \overline{)3,781} \end{array}$$

Use an equation to solve.

4. Sydney bakes mini muffins for a bake sale. She bakes 4 pans that hold 12 muffins each and 3 pans that hold 18 muffins each. How many muffins does Sydney bake?

$$\underline{(4 \times 12) + (3 \times 18) = m; m = 102; 102 \text{ muffins}}$$

Find the area and perimeter for rectangles with the lengths and widths shown.

5. $l = 8$ units

$w = 7$ units

$A = \underline{56 \text{ sq units}}$

$P = \underline{30 \text{ units}}$

6. $l = 2$ units

$w = 14$ units

$A = \underline{28 \text{ sq units}}$

$P = \underline{32 \text{ units}}$

7. $l = 12$ units

$w = 3$ units

$A = \underline{36 \text{ sq units}}$

$P = \underline{30 \text{ units}}$

8. **Stretch Your Thinking** Ms. Carpsse writes the following problem on the board. *A 20-foot length of ribbon is cut into 4 equal pieces. How many inches long is each piece of ribbon?* Ashe says you should first divide 20 feet by 4, then convert to inches. Wesley says you should first convert 20 feet to inches, then divide by 4. Explain how both students are correct.

Using Ashe's order of steps, $20 \text{ feet} \div 4 = 5 \text{ feet}$,
then $5 \text{ feet} \times 12 = 60 \text{ inches}$. Using Wesley's order
of steps, $20 \text{ feet} \times 12 \text{ inches} = 240 \text{ inches}$, then
 $240 \text{ inches} \div 4 = 60 \text{ inches}$. Both ways give the same
correct answer.

Homework**Solve.***Show Your Work.*

1. Yonni has a 5 gallon fish tank. He needs to change the water in the fish tank. How many cups of water will Yonni need to replace all the water in the fish tank?

80 cups

2. Barry is building a fence around his backyard. The backyard is in the shape of a rectangle and the longest side of the yard is 20 meters. The fence will have a perimeter of 60 meters. How many meters long is the short side of the backyard?

10 meters

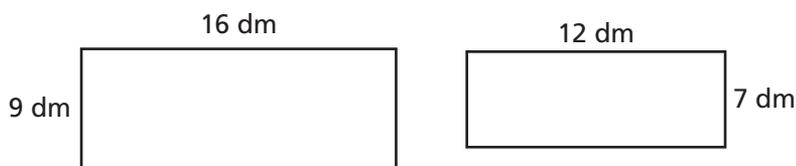
3. Yesi's dog weighed 5 pounds when she got him. He now weighs 45 pounds. How much weight did Yesi's dog gain, in ounces?

640 ounces

4. Fiona's family is replacing the carpet in their living room. The living room is in the shape of a square. The length of one wall is 16 feet. How many square feet of carpet does Fiona's family need to buy to replace their old carpet?

256 square feet

5. Trevon drew the two rectangles below. He wanted to know the difference between the areas of the two rectangles. What is the difference between the two areas?



60 square decimeters

Remembering

Solve. Then explain the meaning of the remainder.

1. There are 43 students at a musical performance. Each row in the auditorium has 8 seats. If the students fill seats row by row from front to back, how many people are in the last row?

$43 \div 8 = 5 \text{ R}3$; There are
 3 people in the last row. The
 remainder is the answer to
 the question.

Write whether each number is *prime* or *composite*.

2. 49

composite

3. 31

prime

4. 17

prime

Solve.

Show your work.

5. The perimeter of a postage stamp is 90 millimeters. The longer side of the stamp is 25 millimeters. What is the length of the shorter side?

20 millimeters; $25 + 25 = 50$; $90 - 50 = 40$;

$40 \div 2 = 20$

6. **Stretch Your Thinking** The directions for lemonade say to put 2 cups of the liquid concentrate into 1 gallon of water. If Olivia only wants to make 1 pint of lemonade, how many fluid ounces of concentrate should she use? Explain.

2 fluid ounces; First, I figured out how many pints
 are in a gallon. I know 1 gallon is 4 quarts and 1 quart
 is 2 pints, so 1 gallon is 4×2 , or 8 pints. That means
 Olivia wants to make one-eighth the original amount
 of lemonade. So, she needs one-eighth the amount
 of concentrate. Since 1 cup = 8 fluid ounces, the
 2 original cups = 16 fluid ounces. One-eighth of
 16 fluid ounces is 2 fluid ounces.

Homework

Write each fraction as a sum of unit fractions.

$$1. \frac{2}{4} = \frac{\frac{1}{4} + \frac{1}{4}}{\quad}$$

$$2. \frac{5}{8} = \frac{\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}}{\quad}$$

$$3. \frac{2}{6} = \frac{\frac{1}{6} + \frac{1}{6}}{\quad}$$

$$4. \frac{7}{8} = \frac{\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}}{\quad}$$

$$5. \frac{4}{12} = \frac{\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}}{\quad}$$

$$6. \frac{6}{12} = \frac{\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}}{\quad}$$

$$7. \frac{8}{12} = \frac{\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}}{\quad}$$

$$8. \frac{4}{6} = \frac{\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}}{\quad}$$

Name the fraction for each sum of unit fractions.

$$9. \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{\frac{3}{4}}{\quad}$$

$$10. \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{\frac{3}{8}}{\quad}$$

$$11. \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{\frac{4}{8}}{\quad}$$

$$12. \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} = \frac{\frac{7}{12}}{\quad}$$

$$13. \frac{1}{12} + \frac{1}{12} = \frac{\frac{2}{12}}{\quad}$$

$$14. \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{\frac{3}{6}}{\quad}$$

$$15. \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{\frac{5}{6}}{\quad}$$

$$16. \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{\frac{6}{8}}{\quad}$$

Write three things you learned today about fractions.

Answers will vary.

Remembering

Solve using any method and show your work.
Check your work with estimation.

1. 2×87

$$\begin{array}{r} 174 \\ \hline \end{array}$$

2. 35×64

$$\begin{array}{r} 2,240 \\ \hline \end{array}$$

3. 336

$$\begin{array}{r} \times 8 \\ \hline 2,688 \end{array}$$

Solve using any method.

4. $5 \overline{)481}$ $96 \text{ R}1$

5. $4 \overline{)2,575}$ $643 \text{ R}3$

6. $7 \overline{)3,855}$ $550 \text{ R}5$

Simplify each expression.

7. $(7 - 3) \cdot 8 = \underline{32}$

8. $(6 \cdot 3) \div (11 - 9) = \underline{9}$

9. $9t - 3t = \underline{6t}$

10. $(12n - n) + 5n = \underline{16n}$

11. Stretch Your Thinking Kia has a long piece of ribbon.

She cuts the ribbon in half then cuts each of those halves in half again. Draw the cut ribbon. Kia uses 3 of the cut pieces for wrapping bouquets of flowers. Write a sum of unit fractions and the total to show the amount of the ribbon she has used. What fraction represents the amount she has left over?

Check students' drawings. Kia used

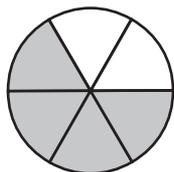
$$\underline{\frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4} \text{ of the ribbon.}}$$

She has $\underline{\frac{1}{4}}$ of the ribbon left over.

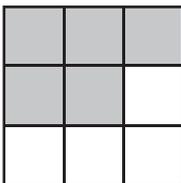
Homework

Name the fraction of the shape that is shaded and the fraction of the shape that is not shaded. Then, write an equation that shows how the two fractions make one whole.

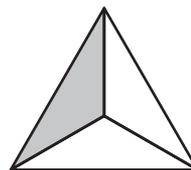
1.

shaded: $\frac{4}{6}$ unshaded: $\frac{2}{6}$ equation: $\frac{4}{6} + \frac{2}{6} = \frac{6}{6}$

2.

shaded: $\frac{5}{9}$ unshaded: $\frac{4}{9}$ equation: $\frac{5}{9} + \frac{4}{9} = \frac{9}{9}$

3.

shaded: $\frac{1}{3}$ unshaded: $\frac{2}{3}$ equation: $\frac{1}{3} + \frac{2}{3} = \frac{3}{3}$

Write the fraction that will complete each equation.

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

5. $1 = \frac{8}{8} = \frac{3}{8} + \frac{5}{8}$

6. $1 = \frac{4}{4} = \frac{2}{4} + \frac{2}{4}$

7. $1 = \frac{10}{10} = \frac{7}{10} + \frac{3}{10}$

8. $1 = \frac{6}{6} = \frac{5}{6} + \frac{1}{6}$

9. $1 = \frac{9}{9} = \frac{8}{9} + \frac{1}{9}$

10. $1 = \frac{7}{7} = \frac{4}{7} + \frac{3}{7}$

11. $1 = \frac{12}{12} = \frac{9}{12} + \frac{3}{12}$

Solve.

Show your work.

12. Kim drank $\frac{1}{3}$ of a carton of milk. Joan drank $\frac{1}{4}$ of a carton of milk. Who drank more milk?

Kim drank more milk than Joan because $\frac{1}{3}$ is

greater than $\frac{1}{4}$. $\frac{1}{3} > \frac{1}{4}$

13. Maria read $\frac{1}{8}$ of a story. Darren read $\frac{1}{7}$ of the same story. Who read less of the story?

Maria read less than Darren because $\frac{1}{8}$ is less

than $\frac{1}{7}$. $\frac{1}{8} < \frac{1}{7}$

Remembering

Write = or \neq to make each statement true.

1. $25 + 25 \text{ (} = \text{)} 50$

2. $17 + 3 \text{ (} = \text{)} 30 - 10$

3. $9 + 8 \text{ (} = \text{)} 8 + 9$

4. $31 \text{ (} \neq \text{)} 23 + 9$

5. $3 + 1 + 12 \text{ (} \neq \text{)} 15$

6. $40 - 22 \text{ (} = \text{)} 18$

Solve each equation.

7. $8 \div b = 2$

$b = \underline{\quad 4 \quad}$

8. $j \div 6 = 7$

$j = \underline{\quad 42 \quad}$

9. $k = 5 \times 3$

$k = \underline{\quad 15 \quad}$

10. $q \times 10 = 90$

$q = \underline{\quad 9 \quad}$

11. $12 \times r = 36$

$r = \underline{\quad 3 \quad}$

12. $a = 7 \times 8$

$a = \underline{\quad 56 \quad}$

Write each fraction as a sum of unit fractions.

13. $\frac{4}{6} = \underline{\quad \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} \quad}$

14. $\frac{6}{8} = \underline{\quad \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} \quad}$

15. **Stretch Your Thinking** Margaret and June both made a pumpkin pie of the same size. Each cut her pie into equal pieces. Margaret's whole pie can be represented by the fraction $\frac{8}{8}$. June's whole pie can be represented by the fraction $\frac{6}{6}$. What is different about the two pies? If Margaret and June each eat 1 piece of their own pie, who will eat more? Explain how you know.

Margaret cut her pie into 8 pieces, while June cut her pie into 6 pieces. If they each eat a slice of their own pie, June will eat more. Since her pie is cut into fewer pieces, each piece is bigger: $\frac{1}{6} > \frac{1}{8}$.

Homework

Solve.

$$1. \frac{4}{8} + \frac{2}{8} = \underline{\frac{6}{8}}$$

$$2. \frac{3}{11} + \frac{6}{11} = \underline{\frac{9}{11}}$$

$$3. \frac{3}{4} - \frac{2}{4} = \underline{\frac{1}{4}}$$

$$4. \frac{3}{5} + \frac{4}{5} = \underline{\frac{7}{5}}$$

$$5. \frac{2}{6} + \frac{1}{6} = \underline{\frac{3}{6}}$$

$$6. \frac{6}{7} - \frac{2}{7} = \underline{\frac{4}{7}}$$

$$7. \frac{5}{12} + \frac{4}{12} = \underline{\frac{9}{12}}$$

$$8. \frac{9}{10} - \frac{3}{10} = \underline{\frac{6}{10}}$$

$$9. \frac{8}{9} - \frac{4}{9} = \underline{\frac{4}{9}}$$

Solve.

Show your work.

10. Sue is driving to see her mom. The first day she traveled $\frac{2}{5}$ of the distance. The next day she traveled another $\frac{2}{5}$ of the distance. What fraction of the distance has she driven?

$$\underline{\frac{2}{5} + \frac{2}{5} = \frac{4}{5}}$$

11. When Keshawn sharpens her pencil, she loses about $\frac{1}{12}$ of the length. One day, she sharpened her pencil 3 times. The next day she sharpened the same pencil 5 times. What fraction of the pencil did Keshawn sharpen away?

$$\underline{\frac{3}{12} + \frac{5}{12} = \frac{8}{12}}$$

12. One day, a flower shop sold $\frac{7}{10}$ of its roses in the morning and $\frac{2}{10}$ of its roses in the afternoon. What fraction of its roses did the shop sell that day?

$$\underline{\frac{7}{10} + \frac{2}{10} = \frac{9}{10}}$$

13. Bonnie's orange was cut into eighths. She ate $\frac{3}{8}$ of the orange and her friend ate $\frac{3}{8}$ of it. Did they eat the whole orange? Explain.

$$\underline{\text{No. } \frac{3}{8} + \frac{3}{8} = \frac{6}{8}; \frac{6}{8} < 1}$$

14. Write and solve a fraction word problem of your own.

Answers will vary.

Remembering

Solve the comparison problem.

1. There are 108 cars parked in front of a building. This is 4 times the number of cars that are parked in the back of the building. How many cars are parked in the back of the building?

$$108 = 4 \times c, \text{ or } 108 \div 4 = c; c = 27; 27 \text{ cars}$$

Write a number sentence to answer each question.

2. How many millimeters are equal to 8 meters?

$$8 \text{ m} \times 1,000 = 8,000 \text{ mm}$$

3. How many centimeters are equal to 35 kilometers?

$$35 \text{ km} \times 100,000 = 3,500,000 \text{ cm}$$

4. How many meters are equal to 72 kilometers?

$$72 \text{ km} \times 1,000 = 72,000 \text{ m}$$

Name the fraction that will complete each equation.

5. $1 = \frac{6}{6} = \frac{4}{6} + \underline{\frac{2}{6}}$

6. $1 = \frac{10}{10} = \frac{1}{10} + \underline{\frac{9}{10}}$

7. $1 = \frac{3}{3} = \frac{2}{3} + \underline{\frac{1}{3}}$

8. $1 = \frac{8}{8} = \frac{4}{8} + \underline{\frac{4}{8}}$

9. **Stretch Your Thinking** Lilly started the morning with a glass of juice that was $\frac{4}{5}$ full. She drank $\frac{3}{5}$ of the glass, then partially refilled with another $\frac{2}{5}$ of a glass. At this point, how full is Lilly's glass with juice? Explain your answer.

Lilly's glass is $\frac{3}{5}$ full. I subtracted then added

$$\text{as follows: } \frac{4}{5} - \frac{3}{5} = \frac{1}{5}; \frac{1}{5} + \frac{2}{5} = \frac{3}{5}$$

Homework

Write the equivalent fraction.

1. $6\frac{2}{5} = \frac{32}{5}$

2. $2\frac{3}{8} = \frac{19}{8}$

3. $4\frac{6}{7} = \frac{34}{7}$

4. $8\frac{1}{3} = \frac{25}{3}$

5. $3\frac{7}{10} = \frac{37}{10}$

6. $5\frac{5}{6} = \frac{35}{6}$

7. $7\frac{3}{4} = \frac{31}{4}$

8. $1\frac{4}{9} = \frac{13}{9}$

Write the equivalent mixed number.

9. $\frac{50}{7} = 7\frac{1}{7}$

10. $\frac{16}{10} = 1\frac{6}{10}$

11. $\frac{23}{4} = 5\frac{3}{4}$

12. $\frac{50}{5} = 10$

13. $\frac{21}{8} = 2\frac{5}{8}$

14. $\frac{11}{3} = 3\frac{2}{3}$

15. $\frac{60}{9} = 6\frac{6}{9}$

16. $\frac{23}{5} = 4\frac{3}{5}$

Solve.

Show your work.

17. Castor brought $6\frac{3}{4}$ small carrot cakes to share with the 26 students in his class. Did Castor bring enough for each student to have $\frac{1}{4}$ of a cake? Explain your thinking.

$6\frac{3}{4} = \frac{27}{4}$; There is enough for 27 people to each have $\frac{1}{4}$ of a cake.

18. Claire cut some apples into eighths. She and her friends ate all but 17 pieces. How many whole apples and parts of apples did she have left over? Tell how you know.

$\frac{17}{8} = 2\frac{1}{8}$; She had two whole apples and 1 part of an apple left.

Remembering

Write and solve an equation to solve each problem.
Draw comparison bars when needed.

Show your work.

1. Brigitte fostered 14 dogs this year, which is 5 less than last year. How many dogs did Brigitte foster last year?

$$14 = d - 5 \text{ or } d = 14 + 5; d = 19; 19 \text{ dogs}$$

2. Rema has two jobs. In one year, she worked 276 hours at her first job. In the same year, she worked 3 times the number of hours at her second job. How many hours did Rema work that year at her second job?

$$276 \times 3 = h; h = 828; 828 \text{ hours}$$

Complete.

3. How many milliliters are equal to 21 L? 21,000 mL

4. How many milligrams are equal to 9 g? 9,000 mg

5. How many grams are equal to 400 kg? 400,000 g

Solve.

6. $\frac{3}{4} - \frac{1}{4} = \underline{\frac{2}{4}}$

7. $\frac{2}{9} + \frac{3}{9} = \underline{\frac{5}{9}}$

8. $\frac{7}{8} - \frac{1}{8} = \underline{\frac{6}{8}}$

9. **Stretch Your Thinking** Harrison says that to convert a mixed number to a fraction greater than 1, he thinks of it this way: $4\frac{2}{5} = \frac{5}{5} + \frac{5}{5} + \frac{5}{5} + \frac{5}{5} + \frac{2}{5} = \frac{22}{5}$. Does his strategy work? Explain.

Yes; The mixed number $4\frac{2}{5}$ is made up of a whole

number part and a fraction part. Harrison changed

the whole number to a sum of fractions with the same

denominator as the fraction part of the mixed number.

Since 1 whole = $\frac{5}{5}$, 4 wholes equal $\frac{5}{5} + \frac{5}{5} + \frac{5}{5} + \frac{5}{5}$, which

is $\frac{20}{5}$. When this is added to the fraction $\frac{2}{5}$, the total is $\frac{22}{5}$.

Homework**Add.**

$$\begin{array}{r} 1. \quad 3\frac{2}{6} \\ + 6\frac{3}{6} \\ \hline 9\frac{5}{6} \end{array}$$

$$\begin{array}{r} 2. \quad 8\frac{5}{10} \\ + 9\frac{6}{10} \\ \hline 18\frac{1}{10} \end{array}$$

$$\begin{array}{r} 3. \quad 7\frac{3}{4} \\ + 4\frac{2}{4} \\ \hline 12\frac{1}{4} \end{array}$$

$$\begin{array}{r} 4. \quad 1\frac{5}{9} \\ + 5\frac{7}{9} \\ \hline 7\frac{3}{9} \end{array}$$

$$\begin{array}{r} 5. \quad 3\frac{2}{5} \\ + 3\frac{3}{5} \\ \hline 7 \end{array}$$

$$\begin{array}{r} 6. \quad 1\frac{2}{8} \\ + 2\frac{5}{8} \\ \hline 3\frac{7}{8} \end{array}$$

Subtract.

$$\begin{array}{r} 7. \quad 7\frac{2}{3} \\ - 3\frac{1}{3} \\ \hline 4\frac{1}{3} \end{array}$$

$$\begin{array}{r} 8. \quad 8\frac{2}{7} \\ - 5\frac{5}{7} \\ \hline 2\frac{4}{7} \end{array}$$

$$\begin{array}{r} 9. \quad 6\frac{1}{4} \\ - 2\frac{3}{4} \\ \hline 3\frac{2}{4} \end{array}$$

$$\begin{array}{r} 10. \quad 9\frac{1}{8} \\ - 4\frac{5}{8} \\ \hline 4\frac{4}{8} \end{array}$$

$$\begin{array}{r} 11. \quad 9\frac{4}{6} \\ - 4\frac{1}{6} \\ \hline 5\frac{3}{6} \end{array}$$

$$\begin{array}{r} 12. \quad 3\frac{1}{5} \\ - 2\frac{3}{5} \\ \hline \frac{3}{5} \end{array}$$

Add or subtract.

$$13. \quad \frac{1}{4} + \frac{7}{4} = \underline{\frac{8}{4}}$$

$$14. \quad \frac{3}{8} + \frac{6}{8} = \underline{\frac{9}{8}}$$

$$15. \quad \frac{9}{6} - \frac{8}{6} = \underline{\frac{1}{6}}$$

$$16. \quad \frac{5}{9} + \frac{6}{9} = \underline{\frac{11}{9}}$$

$$17. \quad \frac{9}{2} - \frac{6}{2} = \underline{\frac{3}{2}}$$

$$18. \quad \frac{5}{10} - \frac{2}{10} = \underline{\frac{3}{10}}$$

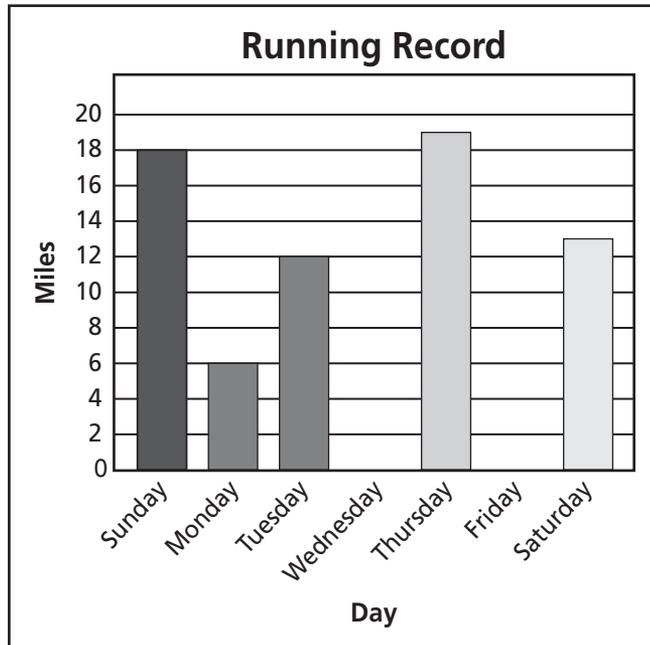
$$19. \quad \frac{2}{5} + \frac{4}{5} = \underline{\frac{6}{5}}$$

$$20. \quad \frac{8}{7} - \frac{3}{7} = \underline{\frac{5}{7}}$$

$$21. \quad \frac{7}{3} - \frac{2}{3} = \underline{\frac{5}{3}}$$

Remembering

The graph shows the number of miles Matt ran during a week of training for a marathon. Use the graph for Exercises 1–2.



1. On which day did Jason run 3 times the number of miles as he ran on Monday?

Sunday

2. Write an addition equation and a subtraction equation that compares the number of miles Matt ran on Thursday (x) to the number of miles Jason ran on Tuesday (y).

$$x = y + 7, y = x - 7$$

Convert each measurement.

3. 4 min = 240 sec

4. 12 hrs = 720 min

5. 5 days = 120 hrs

6. 2 days = 2,880 min

Write the equivalent mixed number.

7. $\frac{9}{4} =$ $2\frac{1}{4}$

8. $\frac{12}{3} =$ 4

9. $\frac{63}{10} =$ $6\frac{3}{10}$

10. $\frac{11}{2} =$ $5\frac{1}{2}$

11. $\frac{14}{4} =$ $3\frac{2}{4}$

12. $\frac{15}{6} =$ $2\frac{3}{6}$

13. **Stretch Your Thinking** Garrett picked $12\frac{7}{8}$ pounds of peaches. Elise picked $13\frac{3}{8}$ pounds of peaches. Who picked more peaches? How much more? Explain.

Elise picked more; I know this because the whole number part of Elise's amount is greater; Elise picked $\frac{4}{8}$ more pounds of peaches than Garrett:

$$13\frac{3}{8} - 12\frac{7}{8} = 12\frac{11}{8} - 12\frac{7}{8} = \frac{4}{8}$$

Homework

Write each mixed number as a fraction.

1. $6\frac{5}{8} = \underline{\frac{53}{8}}$

2. $2\frac{1}{4} = \underline{\frac{9}{4}}$

3. $8\frac{3}{10} = \underline{\frac{83}{10}}$

4. $4\frac{2}{6} = \underline{\frac{26}{6}}$

Write each fraction as a mixed number.

5. $\frac{26}{3} = \underline{8\frac{2}{3}}$

6. $\frac{47}{7} = \underline{6\frac{5}{7}}$

7. $\frac{59}{9} = \underline{6\frac{5}{9}}$

8. $\frac{44}{5} = \underline{8\frac{4}{5}}$

Add or subtract.

9. $\frac{2}{3} + \frac{2}{3} = \underline{\frac{4}{3}}$

10. $\frac{5}{7} - \frac{3}{7} = \underline{\frac{2}{7}}$

11. $1\frac{3}{9} + \frac{7}{9} = \underline{2\frac{1}{9}}$

12. $\frac{3}{4} + 3\frac{3}{4} = \underline{4\frac{2}{4}}$

13. $2\frac{4}{15} - \frac{10}{15} = \underline{1\frac{9}{15}}$

14. $\frac{15}{20} - \frac{6}{20} = \underline{\frac{9}{20}}$

15. $3\frac{3}{5} - 3\frac{1}{5} = \underline{\frac{2}{5}}$

16. $1\frac{1}{6} + 2\frac{2}{6} = \underline{3\frac{3}{6}}$

17. $2\frac{7}{8} - 1\frac{2}{8} = \underline{1\frac{5}{8}}$

Solve.

Show your work.

18. Rashid made a loaf of bread that called for $3\frac{1}{3}$ cups of flour. He combined white flour and whole wheat flour. If he used $1\frac{2}{3}$ cups of white flour, how much whole wheat flour did he use?

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

19. Manuela spent $1\frac{3}{4}$ hours writing her book report. Katy spent $\frac{3}{4}$ hour more time on her book report than Manuela spent. How much time did Katy spend writing her report?

 $2\frac{2}{4}$ hours

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 23,546 \\ + \quad 3,198 \\ \hline 26,744 \end{array}$$

$$\begin{array}{r} 2. \quad 50,427 \\ - \quad 27,152 \\ \hline 23,275 \end{array}$$

$$\begin{array}{r} 3. \quad 850,000 \\ - \quad 541,086 \\ \hline 308,914 \end{array}$$

Use an equation to solve.

Show your work.

4. Each of Caroline's 2 older cats gets 7 ounces of food each day. Her younger cat gets 9 ounces of food each day. How much food does Caroline feed her cats altogether each day?

$$(2 \times 7) + 9 = f; f = 23; 23 \text{ ounces}$$

5. Chad shares his 84 toy cars equally among his 3 friends and himself. Then he donates 15 cars to a used toy collection. How many cars does Chad have left?

$$(84 \div 4) - 15 = c; c = 6; 6 \text{ cars}$$

Add.

$$\begin{array}{r} 6. \quad 3\frac{4}{9} \\ + \quad 5\frac{2}{9} \\ \hline 8\frac{6}{9} \end{array}$$

$$\begin{array}{r} 7. \quad 7\frac{1}{5} \\ + \quad 2\frac{2}{5} \\ \hline 9\frac{3}{5} \end{array}$$

$$\begin{array}{r} 8. \quad 9\frac{7}{10} \\ + \quad 8\frac{4}{10} \\ \hline 18\frac{1}{10} \end{array}$$

$$\begin{array}{r} 9. \quad 5\frac{2}{7} \\ + \quad 2\frac{6}{7} \\ \hline 8\frac{1}{7} \end{array}$$

10. **Stretch Your Thinking** Chris ordered pizza for his family from a company that cuts its pizzas into 8 slices each. The fraction of a pizza eaten by each family member is shown in the table at the right. If they had less than 1 whole pizza left over, how many pizzas did they order? What fraction of a pizza was left over?

Show your work.

$$3 \text{ pizzas; } \frac{7}{8} \text{ of a pizza left over; } \frac{3}{8} + \frac{2}{8} + \frac{4}{8} + \frac{5}{8} + \frac{3}{8}$$

$$= \frac{17}{8} = 2\frac{1}{8} \text{ eaten; next whole number is 3; } 3 - 2\frac{1}{8} =$$

$$2\frac{8}{8} - 2\frac{1}{8} = \frac{7}{8} \text{ left over.}$$

Family member	Fraction of pizza eaten
Chris	$\frac{3}{8}$
Stacy	$\frac{2}{8}$
Rylan	$\frac{4}{8}$
Alec	$\frac{5}{8}$
Kelli	$\frac{3}{8}$

Homework**Multiply.**

1. $3 \times \frac{1}{4} = \underline{\frac{3}{4}}$

2. $5 \times \frac{1}{3} = \underline{\frac{5}{3} \text{ or } 1\frac{2}{3}}$

3. $4 \times \frac{1}{6} = \underline{\frac{4}{6}}$

4. $7 \times \frac{1}{7} = \underline{\frac{7}{7} \text{ or } 1}$

5. $2 \times \frac{1}{8} = \underline{\frac{2}{8}}$

6. $3 \times \frac{1}{10} = \underline{\frac{3}{10}}$

7. $2 \times \frac{3}{4} = \underline{\frac{6}{4} \text{ or } 1\frac{2}{4}}$

8. $12 \times \frac{2}{3} = \underline{\frac{24}{3} \text{ or } 8}$

9. $12 \times \frac{5}{6} = \underline{\frac{60}{6} \text{ or } 10}$

10. $3 \times \frac{2}{7} = \underline{\frac{6}{7}}$

11. $24 \times \frac{5}{8} = \underline{\frac{120}{8} \text{ or } 15}$

12. $8 \times \frac{3}{10} = \underline{\frac{24}{10} \text{ or } 2\frac{4}{10}}$

13. $20 \times \frac{3}{5} = \underline{\frac{60}{5} \text{ or } 12}$

14. $9 \times \frac{5}{9} = \underline{\frac{45}{9} \text{ or } 5}$

15. $10 \times \frac{7}{12} = \underline{\frac{70}{12} \text{ or } 5\frac{10}{12}}$

Solve.*Show your work.*

16. Manuel eats $\frac{1}{8}$ of a melon for a snack each day. How much melon does he eat in five days?

$$5 \times \frac{1}{8} = \frac{5}{8} \text{ melon}$$

17. Shannen collects paper for recycling. She collects $\frac{1}{3}$ pound of paper each week. How much paper will she collect in 4 weeks?

$$4 \times \frac{1}{3} = \frac{4}{3} \text{ pounds or } 1\frac{1}{3} \text{ pounds}$$

18. Aisha is unpacking boxes. It takes $\frac{3}{4}$ hour to unpack each box. How long will it take her to unpack 6 boxes?

$$6 \times \frac{3}{4} = \frac{18}{4} \text{ hours or } 4\frac{2}{4} \text{ hours}$$

19. Mrs. Suarez cut a pizza into 8 equal slices. Each person in her family ate 2 slices. If there are 3 people in her family, what fraction of the pizza did they eat altogether?

$$3 \times \frac{2}{8} = \frac{6}{8} \text{ pizza}$$

20. Hailey is knitting a scarf. Each half hour, she adds $\frac{3}{7}$ inch to the scarf's length. How much length will she add to the scarf in 12 hours?

$$12 \times \frac{3}{7} = \frac{36}{7} \text{ inches or } 5\frac{1}{7} \text{ inches}$$

Remembering

Use an equation to solve.

Show your work.

1. Camille bought 2 pairs of pants for \$29 each and a shirt for \$18. She paid with \$80. How much did she get in change?

$$\underline{\$80 - (2 \times \$29 + \$18) = c; c = 4; \$4}$$

2. On a weekend road trip, the Jensen family drove 210 miles on highways, where their car gets 35 miles for each gallon of gasoline, and 54 miles on city streets, where their car gets 18 miles for each gallon. How many gallons of gas did they use?

$$\underline{(210 \div 35) + (54 \div 18) = g; g = 9; 9 \text{ gallons}}$$

Complete the tables.

3.

Yards	Feet
2	6
5	15
8	24
10	30

4.

Feet	Inches
3	36
4	48
9	108
12	144

Add or subtract.

5. $\frac{9}{10} - \frac{3}{10} = \underline{\frac{6}{10}}$

6. $\frac{2}{5} + \frac{4}{5} = \underline{\frac{6}{5} \text{ or } 1\frac{1}{5}}$

7. $2\frac{1}{8} + 5\frac{3}{8} = \underline{7\frac{4}{8}}$

8. $8\frac{6}{7} - 8\frac{2}{7} = \underline{\frac{4}{7}}$

9. $4\frac{3}{6} + 1\frac{5}{6} = \underline{6\frac{2}{6}}$

10. $7\frac{1}{4} - 4\frac{3}{4} = \underline{2\frac{2}{4}}$

11. **Stretch Your Thinking** A worm moves forward $\frac{3}{8}$ inch every 5 minutes for 1 hour 25 minutes. How far does the worm move in this time? Explain.

$$\underline{6\frac{3}{8} \text{ inches; } 1 \text{ hour } 25 \text{ min} = 60 \text{ min} + 25 \text{ min} = 85 \text{ min;}}$$

$$\underline{85 \text{ min} \div 5 \text{ min} = 17; 17 \times \frac{3}{8} = \frac{51}{8} = 6\frac{3}{8} \text{ inches}}$$

Homework

Draw a model for each problem. Then solve. Drawings will vary.

$$1. 4 \cdot \frac{1}{5} = \underline{\frac{4}{5}}$$

$$2. 7 \cdot \frac{1}{3} = \underline{\frac{7}{3} \text{ or } 2\frac{1}{3}}$$

$$3. 2 \cdot \frac{3}{8} = \underline{\frac{6}{8}}$$

$$4. 5 \cdot \frac{3}{4} = \underline{\frac{15}{4} \text{ or } 3\frac{3}{4}}$$

Multiply.

$$5. 12 \cdot \frac{5}{6} = \underline{\frac{60}{6} \text{ or } 10}$$

$$6. 9 \cdot \frac{1}{2} = \underline{\frac{9}{2} \text{ or } 4\frac{1}{2}}$$

$$7. 25 \cdot \frac{3}{7} = \underline{\frac{75}{7} \text{ or } 10\frac{5}{7}}$$

$$8. 12 \cdot \frac{4}{5} = \underline{\frac{48}{5} \text{ or } 9\frac{3}{5}}$$

$$9. 5 \cdot \frac{2}{12} = \underline{\frac{10}{12}}$$

$$10. 9 \cdot \frac{2}{3} = \underline{\frac{18}{3} \text{ or } 6}$$

Write an equation. Then solve.

Show your work.

11. Cal's shoe is $\frac{3}{4}$ foot long. He used his shoe to measure his bedroom and found that it was 15 shoes long. What is the length of Cal's room in feet?

$$l = 15 \cdot \frac{3}{4}; \underline{\frac{45}{4} \text{ feet or } 11\frac{1}{4} \text{ feet}}$$

12. The cafeteria at a summer camp gives each camper $\frac{2}{3}$ cup of juice for breakfast. This morning, 50 campers had juice for breakfast. How much juice did the cafeteria serve in all?

$$j = 50 \cdot \frac{2}{3}; \underline{\frac{100}{3} \text{ cups or } 33\frac{1}{3} \text{ cups}}$$

Remembering

Solve each problem.

1. $24 \div 8 + 9 = h$

$3 + 9 = 12$

2. $(14 \div 2) - (3 \times 2) = l$

$7 - 6 = 1$

3. $20 - (5 \times 4) = p$

$20 - 20 = 0$

4. $(2 \times 9) + 9 = g$

$18 + 9 = 27$

5. $(3 + 7) \times (2 + 4) = m$

$10 \times 6 = 60$

6. $(9 \div 3) + (5 - 4) = t$

$3 + 1 = 4$

Solve.

Show your work.

7. A baby weighs 7 pounds 2 ounces at birth. How many ounces does the baby weigh?

114 ounces

8. Jack bought 2 quarts of motor oil. His car took 1 quart and another half quart. How many cups of oil does he have left?

2 cups

Multiply.

9. $6 \times \frac{1}{7} = \underline{\frac{6}{7}}$

10. $5 \times \frac{3}{8} = \underline{\frac{15}{8} \text{ or } 1\frac{7}{8}}$

11. $2 \times \frac{9}{10} = \underline{\frac{18}{10} \text{ or } 1\frac{8}{10}}$

12. $8 \times \frac{3}{4} = \underline{\frac{24}{4} \text{ or } 6}$

13. $3 \times \frac{1}{3} = \underline{\frac{3}{3} \text{ or } 1}$

14. $15 \times \frac{3}{11} = \underline{\frac{45}{11} \text{ or } 4\frac{1}{11}}$

15. **Stretch Your Thinking** Write a word problem using the whole number 4 and the fraction $\frac{3}{8}$. Then solve your problem.

Possible answer: Claire is making 4 placemats. Each placemat uses $\frac{3}{8}$ yard of fabric. How much fabric does Claire use for the placements? $1\frac{4}{8}$ yards of fabric

Homework**Add or subtract.**

$$\begin{array}{r} 1. \quad 2\frac{2}{3} \\ + 4\frac{1}{3} \\ \hline 7 \end{array}$$

$$\begin{array}{r} 2. \quad 9\frac{7}{9} \\ - 4\frac{5}{9} \\ \hline 5\frac{2}{9} \end{array}$$

$$\begin{array}{r} 3. \quad 5\frac{4}{5} \\ + 7\frac{3}{5} \\ \hline 13\frac{2}{5} \end{array}$$

$$\begin{array}{r} 4. \quad 8 \\ - 1\frac{1}{6} \\ \hline 6\frac{5}{6} \end{array}$$

$$\begin{array}{r} 5. \quad 18\frac{5}{8} \\ + 12\frac{7}{8} \\ \hline 31\frac{4}{8} \end{array}$$

$$\begin{array}{r} 6. \quad 10\frac{1}{4} \\ - 3\frac{3}{4} \\ \hline 6\frac{2}{4} \end{array}$$

Multiply. Write your answer as a mixed number or a whole number, when possible.

$$7. 5 \cdot \frac{1}{5} = \underline{1}$$

$$8. 5 \cdot \frac{4}{7} = \underline{2\frac{6}{7}}$$

$$9. 20 \cdot \frac{3}{10} = \underline{6}$$

$$10. 8 \cdot \frac{1}{6} = \underline{1\frac{2}{6}}$$

$$11. 9 \cdot \frac{7}{12} = \underline{5\frac{3}{12}}$$

$$12. 2 \cdot \frac{4}{9} = \underline{\frac{8}{9}}$$

Write an equation. Then solve.**Equations will vary.***Show your work.*

13. At the science-club picnic $\frac{2}{3}$ cup of potato salad will be served to each student. If 20 students attend the picnic, how much potato salad will be needed?

$$p = 20 \cdot \frac{2}{3}; 13\frac{1}{3} \text{ cups}$$

14. Skye spent $4\frac{2}{6}$ hours reading over the weekend. If she read $1\frac{5}{6}$ hours on Saturday, how long did she read on Sunday?

$$1\frac{5}{6} + x = 4\frac{2}{6}; 2\frac{3}{6} \text{ hours}$$

Remembering

Tell whether 3 is a factor of each number. Write *yes* or *no*.

1. 12

yes

2. 14

no

3. 38

no

4. 51

yes

Tell whether each number is a multiple of 6. Write *yes* or *no*.

5. 46

no

6. 54

yes

7. 21

no

8. 30

yes

Find the area and perimeter for rectangles with the lengths and widths shown.

9. $l = 7$ units $w = 8$ units

$A = \underline{56 \text{ sq units}}$

$P = \underline{30 \text{ units}}$

10. $l = 2$ units $w = 4$ units

$A = \underline{8 \text{ sq units}}$

$P = \underline{12 \text{ units}}$

11. $l = 7$ units $w = 5$ units

$A = \underline{35 \text{ sq units}}$

$P = \underline{24 \text{ units}}$

Write an equation. Then solve.

Show your work.

12. Mattie walks $\frac{3}{4}$ mile to school and then back each day. How many miles does she walk to and from school in 5 days?

$$w = 10 \cdot \frac{3}{4}; \frac{30}{4} \text{ or } 7\frac{2}{4} \text{ miles}$$

13. A certain postage stamp is 2 inches long and $\frac{5}{6}$ inches wide. What is the area of the stamp?

$$a = 2 \cdot \frac{5}{6}; \frac{10}{6} \text{ or } 1\frac{4}{6} \text{ square inches}$$

14. **Stretch Your Thinking** For a woodworking project, Tyler has cut 14 boards that are each $\frac{3}{4}$ yard and one board that is $2\frac{1}{4}$ yards. What is the total length of the boards Tyler has cut? Show your work.

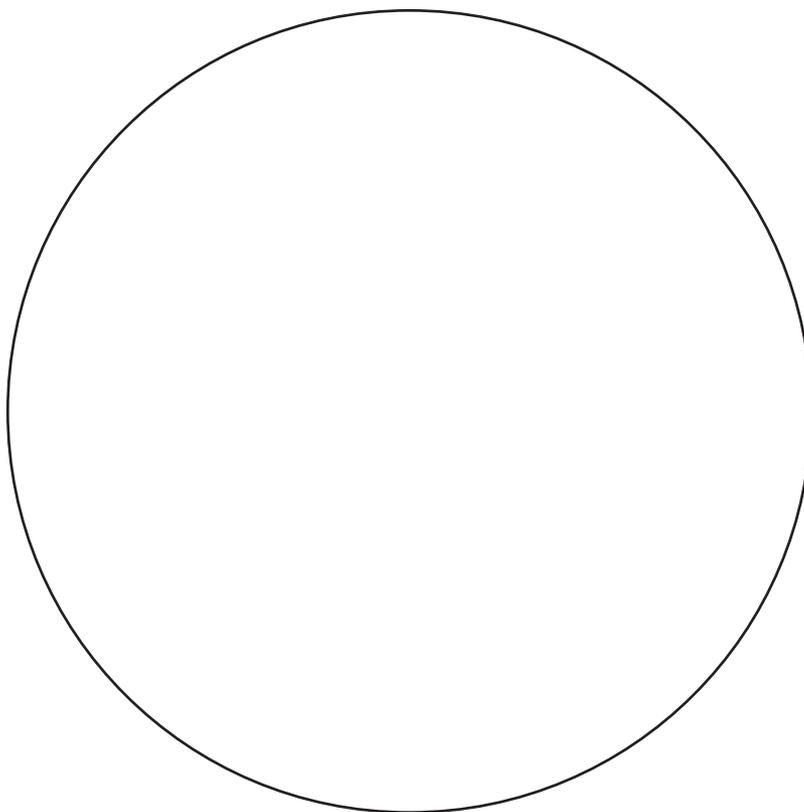
$$12\frac{3}{4} \text{ yards; } 14 \times \frac{3}{4} = \frac{42}{4} = 10\frac{2}{4}, 10\frac{2}{4} + 2\frac{1}{4} = 12\frac{3}{4} \text{ yards}$$

Homework

A pizza garden is a smaller version of a pizza farm. You can make a pizza garden at your home or in your community.

1. Use the circle below to draw a vegetarian pizza garden with 8 wedges. In each wedge, show one of the following vegetarian ingredients: wheat, fruit, vegetables, Italian herbs, and dairy cows. Use each type of ingredient at least once.

Check students' drawings.



2. What fraction of your pizza garden is made up of wheat or fruit?

Answers will vary.

3. What fraction of your pizza garden is *not* made up of vegetables?

Answers will vary.

Remembering

Use the rule to find the next five terms in the pattern.

1. 7, 14, 28, 56, ...

2. 10, 18, 26, 34, ...

Rule: multiply by 2

Rule: add 8

$$\underline{112, 224, 448, 896, 1,792}$$

$$\underline{42, 50, 58, 66, 74}$$

Use the rule to find the first ten terms in the pattern.

3. First term: 3

Rule: multiply by 2

$$\underline{3, 6, 12, 24, 48, 96, 192, 384, 768, 1,536}$$

Solve.

4. A rectangular vegetable garden is 10 yards by 7 yards.
What is the perimeter of the garden in feet?

$$\underline{102 \text{ feet; } 10 + 7 + 10 + 7 = 34 \text{ yards;}}$$

$$\underline{34 \text{ yards} \times 3 = 102 \text{ feet}}$$

Multiply. Change fractions greater than 1 to mixed numbers or whole numbers.

5. $7 \cdot \frac{3}{5} = \underline{4\frac{1}{5}}$

6. $12 \cdot \frac{1}{2} = \underline{6}$

7. $9 \cdot \frac{3}{10} = \underline{2\frac{7}{10}}$

8. **Stretch Your Thinking** The table shows the amount of snowfall, in inches, during the winter months last year and this year. How much would it have to snow in February this year for the total snowfall this winter to be the same as last winter? Show your work.

Last Year			This Year		
Dec.	Jan.	Feb.	Dec.	Jan.	Feb.
$12\frac{7}{8}$	$17\frac{1}{8}$	$26\frac{3}{8}$	$35\frac{5}{8}$	$11\frac{1}{8}$?

$$\underline{9\frac{5}{8} \text{ inches; } 12\frac{7}{8} + 17\frac{1}{8} + 26\frac{3}{8} = 56\frac{3}{8}, 35\frac{5}{8} + 11\frac{1}{8} = 46\frac{6}{8},}$$

$$\underline{56\frac{3}{8} - 46\frac{6}{8} = 9\frac{5}{8}}$$

Homework

Write $>$ or $<$ to make each statement true.

1. $\frac{1}{5} < \frac{1}{4}$

2. $\frac{6}{10} > \frac{5}{10}$

3. $\frac{4}{10} > \frac{4}{12}$

4. $\frac{3}{5} < \frac{4}{5}$

5. $\frac{3}{6} > \frac{3}{8}$

6. $\frac{7}{100} < \frac{8}{100}$

Solve. Explain your answers.

Show your work.

7. Juan took $\frac{2}{12}$ of the fruit salad and Harry took $\frac{3}{12}$ of the same salad. Who took more of the salad?

Harry took more. The denominators are the same
so you can compare the numerators. 3 is greater
than 2, so Harry took more salad.

8. Kim drank $\frac{1}{3}$ of a carton of milk. Joan drank $\frac{1}{4}$ of a carton. Who drank more?

Kim drank more. $\frac{1}{4}$ is less than $\frac{1}{3}$ because the whole
is divided into more pieces.

9. Maria read $\frac{3}{8}$ of a story. Darren read $\frac{3}{6}$ of the same story. Who read more of the story?

Darren read more. The numerators are the same
so you can compare the denominators. 6 is
less than 8, so Darren read more.

10. Write 2 things you learned today about comparing fractions.

Answers will vary.

11. Write and solve a fraction word problem of your own.

Answers will vary.

Remembering

Divide.

$$1. \overset{45 \text{ R}3}{6 \overline{)273}}$$

$$2. \overset{967 \text{ R}1}{2 \overline{)1,935}}$$

$$3. \overset{116}{7 \overline{)812}}$$

Write = or \neq to make each statement true.

$$4. 16 - 4 \text{ (}\neq\text{)} 2$$

$$5. 20 + 8 \text{ (=)} 30 - 2$$

$$6. 9 - 4 \text{ (}\neq\text{)} 12$$

$$7. 48 \text{ (=)} 24 + 24$$

$$8. 50 + 3 + 8 \text{ (}\neq\text{)} 71$$

$$9. 13 + 15 \text{ (=)} 15 + 13$$

Solve each equation.

$$10. 18 \div s = 9$$

$$s = \underline{2}$$

$$11. m = 8 \times 4$$

$$m = \underline{32}$$

$$12. p \div 10 = 7$$

$$p = \underline{70}$$

$$13. t \times 12 = 60$$

$$t = \underline{5}$$

$$14. 3 \times y = 18$$

$$y = \underline{6}$$

$$15. j = 42 \div 6$$

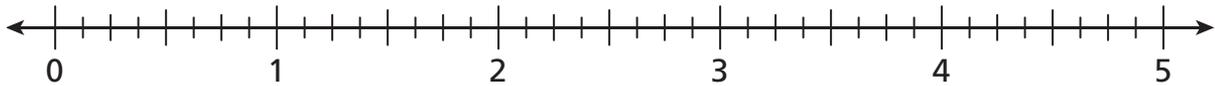
$$j = \underline{7}$$

16. **Stretch Your Thinking** Ellen, Fern, and Kyle are all drinking milk from the same size cartons in the cafeteria. Ellen's carton is $\frac{3}{7}$ full. Fern's carton is $\frac{3}{10}$ full. Kevin's carton is $\frac{3}{4}$ full. Who has the least milk left in their carton? Explain how you know.

Fern; I compared the fractions to find whose carton was the least full. Since the fractions all have the same numerator, I looked at the denominators. Since 10 is the greatest of the three denominators, I know $\frac{3}{10}$ is the least of the three fractions. Fern's carton is the least full.

Homework

1. Use the number line to compare the fractions or mixed numbers. Write $>$ or $<$ to make the statement true.



a. $\frac{3}{4} > \frac{5}{8}$

b. $1\frac{1}{4} < \frac{3}{2}$

c. $\frac{9}{4} < 2\frac{1}{2}$

d. $\frac{7}{2} > \frac{17}{8}$

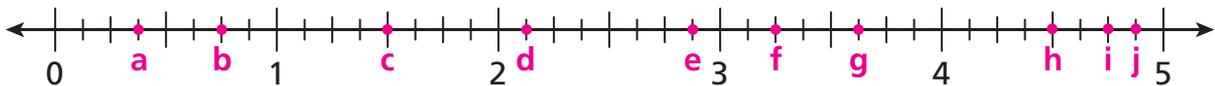
e. $4\frac{2}{4} < 4\frac{5}{8}$

f. $4\frac{1}{2} > \frac{33}{8}$

g. $1\frac{3}{4} < 1\frac{7}{8}$

h. $1\frac{1}{2} > 1\frac{1}{8}$

2. Mark and label the letter of each fraction or mixed number on the number line.



a. $\frac{3}{8}$

b. $\frac{3}{4}$

c. $1\frac{1}{4}$

d. $2\frac{1}{8}$

e. $2\frac{7}{8}$

f. $3\frac{1}{4}$

g. $3\frac{5}{8}$

h. $4\frac{2}{4}$

i. $4\frac{6}{8}$

j. $4\frac{7}{8}$

The list below shows the amount of fruit purchased from the market.

Fruit Purchases (lb = pounds)

apples $2\frac{1}{8}$ lb	bananas $2\frac{3}{8}$ lb
grapes $2\frac{2}{3}$ lb	oranges $3\frac{1}{10}$ lb

3. Decide if each weight is closer to 2 pounds, $2\frac{1}{2}$ pounds, or 3 pounds. Write *closer to 2 pounds*, *closer to $2\frac{1}{2}$ pounds*, or *closer to 3 pounds*.

a. apples closer to 2 lbb. bananas closer to $2\frac{1}{2}$ lbc. grapes closer to $2\frac{1}{2}$ lbd. oranges closer to 3 lb

4. Which purchase had a greater weight?

a. apples or grapes grapesb. oranges or bananas oranges

Remembering

Solve, using any method.

$$1. \begin{array}{r} 152 \text{ R3} \\ 8 \overline{)1,219} \end{array}$$

$$2. \begin{array}{r} 2,383 \\ 3 \overline{)7,149} \end{array}$$

$$3. \begin{array}{r} 1,009 \text{ R2} \\ 4 \overline{)4,038} \end{array}$$

Solve each comparison problem.

4. Mateo read 2,382 pages in a book series over the summer. This is 3 times the number of pages as his younger brother read over the summer. How many pages did Mateo's brother read over the summer?

$p \times 3 = 2,382$, or $2,382 \div 3 = p$; $p = 794$; 794 pages

5. In Jen's town, there was 9 inches of snow in a year. In her cousin's town, there was 216 inches of snow in the same year. How many times the number of inches of snow was there in the cousin's town as in Jen's town?

$9 \times s = 216$, or $216 \div 9 = s$; $s = 24$; 24 times as many inches

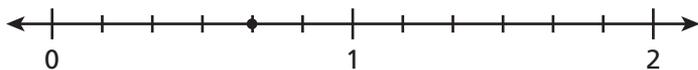
Write $<$ or $>$ to make each statement true.

$$6. \frac{2}{5} \text{ } \textcircled{<} \text{ } \frac{4}{5}$$

$$7. \frac{1}{8} \text{ } \textcircled{<} \text{ } \frac{3}{8}$$

$$8. \frac{4}{5} \text{ } \textcircled{>} \text{ } \frac{4}{6}$$

9. **Stretch Your Thinking** Dakota says the point on the number line shown here is $\frac{4}{5}$. His teacher says that he is reading the number line incorrectly. What is Dakota's error? What is the correct fraction?



Dakota has an incorrect denominator. He may have counted the number of lines between 0 and 1, which is 5, instead of counting the spaces that the line is divided into, which is 6. The correct fraction is $\frac{4}{6}$.

Homework

1. Draw a small square, a medium square, and a large square. Shade $\frac{1}{6}$ of each. **Drawings will vary.**
2. Draw a small circle, a medium circle, and a large circle. Shade $\frac{3}{4}$ of each. **Drawings will vary.**
3. Draw a short rectangle, a medium rectangle, and a long rectangle. Shade $\frac{3}{5}$ of each. **Drawings will vary.**
4. Look at the different size shapes you shaded in Problems 1–3. Describe what they show about fractions of different wholes.
Answers will vary. Possible answer: A fractional part of a larger whole is larger than the same fractional part of a smaller whole.

Solve.

Show your work.

5. Kris ate $\frac{3}{8}$ of a pizza and Kim ate $\frac{4}{8}$ of the same pizza. Did they eat the whole pizza? Explain.
 $\frac{3}{8} + \frac{4}{8} = \frac{7}{8}; \frac{7}{8} < 1$; They did not eat the whole pizza.
6. Amena ate $\frac{1}{2}$ of a sandwich. Lavonne ate $\frac{1}{2}$ of a different sandwich. Amena said they ate the same amount. Lavonne said Amena ate more. Could Lavonne be correct? Explain your thinking.
Lavonne could be correct. If Amena's sandwich was larger than Lavonne's, then $\frac{1}{2}$ of Amena's sandwich would be larger than $\frac{1}{2}$ of Lavonne's sandwich.

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 8,159 \\ + 2,713 \\ \hline 10,872 \end{array}$$

$$\begin{array}{r} 2. \quad 54,992 \\ + 8,317 \\ \hline 63,309 \end{array}$$

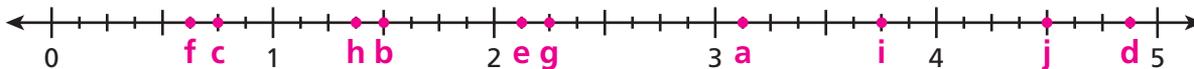
$$\begin{array}{r} 3. \quad 625,000 \\ - 139,256 \\ \hline 485,744 \end{array}$$

Use an equation to solve.

4. Chad harvested 39 potatoes from his garden. He kept 11 for himself and shared the remaining potatoes evenly among his 4 neighbors. How many potatoes did each neighbor get?

$$(39 - 11) \div 4 = p; p = 7; 7 \text{ potatoes}$$

5. Mark and label the point for each fraction or mixed number with its letter.



- a. $3\frac{1}{8}$ b. $1\frac{2}{4}$ c. $\frac{3}{4}$ d. $4\frac{7}{8}$ e. $2\frac{1}{8}$
 f. $\frac{5}{8}$ g. $2\frac{1}{4}$ h. $1\frac{3}{8}$ i. $3\frac{6}{8}$ j. $4\frac{1}{2}$

6. **Stretch Your Thinking** Raylene made a bracelet with 28 beads. She also made a necklace with twice the number of beads as the bracelet. If $\frac{1}{2}$ of the beads on the bracelet are green and $\frac{1}{4}$ of the beads on the necklace are green, does the bracelet, the necklace, or neither have more green beads? Explain.

neither; Since $\frac{1}{2}$ is twice the portion of a whole as $\frac{1}{4}$, and the total beads in the bracelet is half as many as in the necklace, the number of green beads in each must be the same.

Homework

Use the fraction strips to show how each pair is equivalent.

1. $\frac{1}{3}$ and $\frac{2}{6}$



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

2. $\frac{3}{4}$ and $\frac{9}{12}$



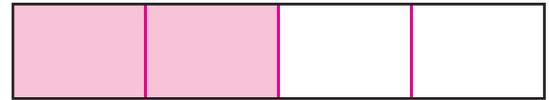
$$\frac{3}{4} = \frac{3 \times \boxed{3}}{4 \times \boxed{3}} = \frac{9}{12}$$

3. $\frac{2}{5}$ and $\frac{4}{10}$



$$\frac{2}{5} = \frac{2 \times \boxed{2}}{5 \times \boxed{2}} = \frac{4}{10}$$

4. $\frac{2}{4}$ and $\frac{6}{12}$



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

Complete to show how the fractions are equivalent.

5. $\frac{5}{6}$ and $\frac{35}{42}$

$$\frac{5}{6} = \frac{5 \times \boxed{7}}{6 \times \boxed{7}} = \frac{35}{42}$$

6. $\frac{4}{10}$ and $\frac{40}{100}$

$$\frac{4}{10} = \frac{4 \times 10}{10 \times \boxed{10}} = \frac{\boxed{40}}{\boxed{100}}$$

Complete.

7. $\frac{4}{5} = \frac{4 \times \boxed{9}}{5 \times \boxed{9}} = \frac{\boxed{36}}{45}$

8. $\frac{2}{5} = \frac{2 \times \boxed{8}}{5 \times \boxed{8}} = \frac{\boxed{16}}{40}$

9. $\frac{3}{8} = \frac{3 \times \boxed{6}}{8 \times \boxed{6}} = \frac{18}{\boxed{48}}$

Remembering

Solve. Then explain the meaning of the remainder.

1. Doris is putting together gift bags. She has 53 favors to divide evenly among gift bags for 7 guests. How many favors will each guest get?

$53 \div 7 = 7 \text{ R}4$; Each guest gets 7 favors. The remainder means there will be 4 favors left over that don't go in the gift bags.

Solve each problem.

2. $2 \times 9 + 5 = r$

$18 + 5 = 23$

3. $36 \div (20 - 8) = t$

$36 \div 12 = 3$

Solve.

4. Mattie and Leah each bought an ice cream cone for the same price. Mattie said it cost her $\frac{2}{3}$ of her allowance. Leah said it cost her $\frac{1}{3}$ of her allowance. Who gets more allowance? Explain.

Leah; If two-thirds of Mattie's allowance is the same as only one-third of Leah's allowance, then Leah's allowance must be greater.

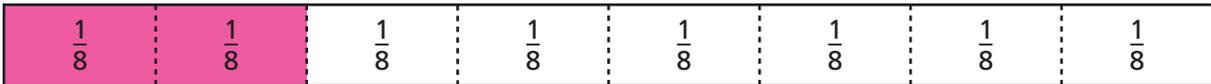
5. **Stretch Your Thinking** Omar cuts a pizza into 4 slices and takes 3 of the slices. He says that he would have the same amount of pizza if he cut the pizza into 8 slices and takes 6 of the slices. Paul says he can cut the pizza into 16 slices and take 12 slices to have the same amount. Who is correct? Explain.

They are both correct; Possible answer: Omar says that $\frac{3}{4} = \frac{6}{8}$, which is true. 8 slices is twice as many as 4 slices, and having 6 slices is also twice as many as having 3 slices. Paul says that $\frac{3}{4} = \frac{12}{16}$, which is true. 16 slices is 4 times as many as 4 slices, and having 12 slices is also 4 times as many as having 3 slices.

Homework

Shade the fraction bar to show the fraction of items sold.
Group the unit fractions to form an equivalent fraction in simplest form. Show your work numerically.

1. The manager of Fantasy Flowers made 8 bouquets of wild flowers. By noon, she sold 2 of the bouquets. What fraction did she sell?



Group size: 2 Fraction of bouquets sold: $\frac{2 \div 2}{8 \div 2} = \underline{\frac{1}{4}}$

2. A car dealer had 12 red cars on his lot at the beginning of the month. The first week he sold 8 of them. What fraction did he sell that week?



Group size: 4 Fraction of red cars sold: $\frac{8 \div 4}{12 \div 4} = \underline{\frac{2}{3}}$

3. A music store received 10 copies of a new CD. They sold 6 of them in the first hour. What fraction did the store sell in the first hour?



Group size: 2 Fraction of CDs sold: $\frac{6 \div 2}{10 \div 2} = \underline{\frac{3}{5}}$

Simplify each fraction. There are multiple solutions to Exercises 5–7. Possible answers are given.

4. $\frac{8 \div 2}{10 \div 2} = \underline{\frac{4}{5}}$

5. $\frac{6 \div 2}{12 \div 2} = \underline{\frac{3}{6}}$

6. $\frac{25 \div 5}{100 \div 5} = \underline{\frac{5}{20}}$

7. $\frac{4 \div 4}{8 \div 4} = \underline{\frac{1}{2}}$

Remembering

Tell whether 4 is a factor of each number. Write *yes* or *no*.

1. 12

yes

2. 20

yes

3. 10

no

4. 26

no

Tell whether each number is a multiple of 3. Write *yes* or *no*.

5. 15

yes

6. 32

no

7. 27

yes

8. 25

no

Name the fraction for each sum of unit fractions.

9. $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \underline{\frac{5}{8}}$

10. $\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} = \underline{\frac{6}{12}}$

11. $\frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} = \underline{\frac{7}{9}}$

Complete.

12. $\frac{3}{5} = \frac{3 \times \boxed{7}}{5 \times \boxed{7}} = \frac{21}{\boxed{35}}$

13. $\frac{2}{9} = \frac{2 \times \boxed{4}}{9 \times \boxed{4}} = \frac{\boxed{8}}{36}$

14. $\frac{5}{6} = \frac{5 \times \boxed{3}}{6 \times \boxed{3}} = \frac{15}{\boxed{18}}$

15. **Stretch Your Thinking** Explain two different ways to simplify $\frac{6}{12}$.

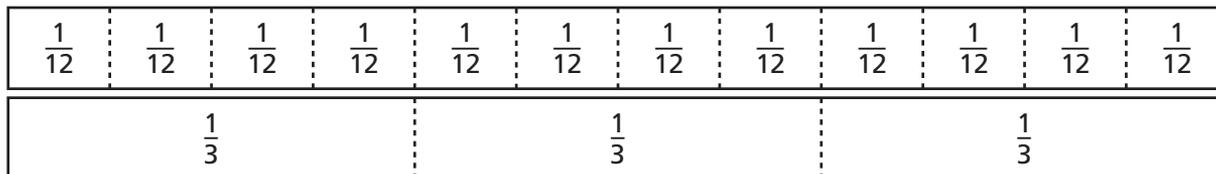
Possible answer: divide the numerator and the denominator by 6 to simplify to $\frac{1}{2}$, or divide the numerator and the denominator by 2 to get $\frac{3}{6}$ and then divide the numerator and the denominator by 3 to simplify to $\frac{1}{2}$.

Homework

1. Use the fraction strips to compare the fractions

$$\frac{7}{12} \text{ and } \frac{2}{3}$$

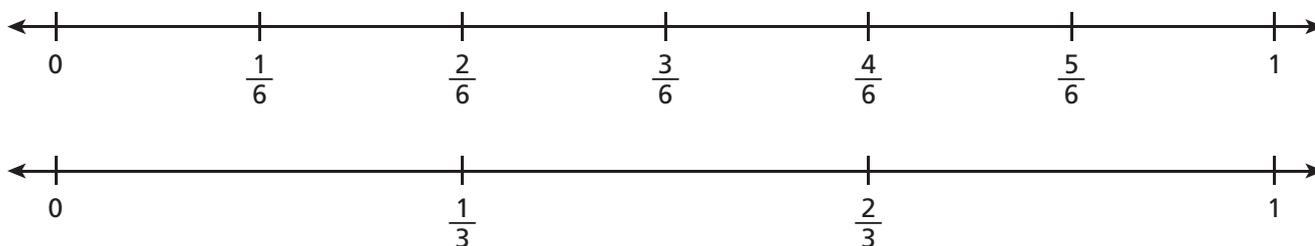
$$\frac{7}{12} < \frac{2}{3}$$



2. Use the number lines to compare the fractions

$$\frac{5}{6} \text{ and } \frac{2}{3}$$

$$\frac{5}{6} > \frac{2}{3}$$



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

3. $\frac{1}{6} < \frac{3}{5}$

4. $\frac{7}{8} > \frac{3}{4}$

5. $\frac{1}{4} < \frac{3}{10}$

6. $\frac{7}{10} > \frac{5}{8}$

7. $\frac{2}{3} > \frac{1}{2}$

8. $\frac{2}{5} < \frac{7}{10}$

Remembering

Write a number sentence to answer each question.

1. How many meters are equal to 58 kilometers?

$$58 \text{ km} \times 1,000 = 58,000 \text{ m}$$

2. How many millimeters are equal to 17 centimeters?

$$17 \text{ cm} \times 10 = 170 \text{ mm}$$

Name the fraction that will complete each equation.

$$3. 1 = \frac{4}{4} = \frac{1}{4} + \frac{3}{4} \quad 4. 1 = \frac{8}{8} = \frac{2}{8} + \frac{6}{8} \quad 5. 1 = \frac{6}{6} = \frac{1}{6} + \frac{5}{6}$$

Simplify each fraction.

$$6. \frac{12 \div \boxed{3}}{15 \div \boxed{3}} = \frac{4}{5}$$

$$7. \frac{48 \div \boxed{8}}{56 \div \boxed{8}} = \frac{6}{7}$$

$$8. \frac{28 \div \boxed{4}}{36 \div \boxed{4}} = \frac{7}{9}$$

$$9. \frac{15 \div \boxed{5}}{40 \div \boxed{5}} = \frac{3}{8}$$

10. **Stretch Your Thinking** Kathleen, Penny, and Megan all order 12-ounce smoothies. After 5 minutes, Kathleen still has $\frac{3}{4}$ left, Penny has $\frac{5}{6}$ left, and Megan has $\frac{5}{8}$ left. Who has the least amount of smoothie in their cup? Who has the greatest? Explain.

Megan has the least and Penny has the most;

I wrote equivalent fractions for all three

fractions using the denominator 24: $\frac{3 \times 6}{4 \times 6} = \frac{18}{24}$,

$\frac{5 \times 4}{6 \times 4} = \frac{20}{24}$, $\frac{5 \times 3}{8 \times 3} = \frac{15}{24}$; Since the least numerator

is 15, Megan has the least amount of smoothie

left, and since the greatest numerator is 20,

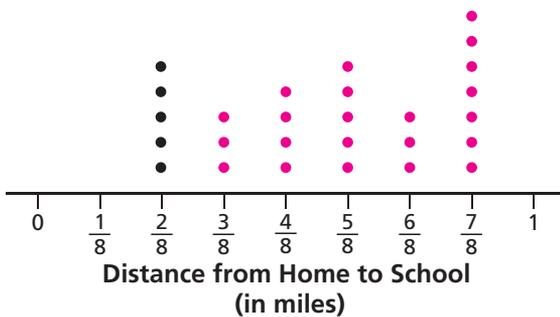
Penny has the greatest amount of smoothie left.

Homework

Tyler asked his classmates the distance in miles from their home to the school. The distances they named are shown in the table.

Distance from Home to School (in miles)	Number of Students
$\frac{2}{8}$	5
$\frac{3}{8}$	3
$\frac{4}{8}$	4
$\frac{5}{8}$	5
$\frac{6}{8}$	3
$\frac{7}{8}$	7

1. Make a line plot of the data.



2. How many students did Tyler ask in all? Explain how you know.

27; Counted the number of marks.

3. Find the difference between the greatest distance and the least distance.

$\frac{5}{8}$ mile

4. Layla lives the least distance from the school. Her friend Geneva lives $\frac{3}{8}$ mile from her. Geneva walked to Layla's house. Then the two girls walked to school together. How far did Geneva walk altogether?

$\frac{5}{8}$ mile

Remembering

Complete.

1. How many liters are equal to 39 kL? 39,000 L

2. How many milligrams are equal to 4 cg? 40 mg

Solve.

$$3. \frac{5}{9} + \frac{2}{9} = \underline{\frac{7}{9}}$$

$$4. \frac{4}{6} - \frac{1}{6} = \underline{\frac{3}{6}}$$

$$5. \frac{10}{11} - \frac{3}{11} = \underline{\frac{7}{11}}$$

Use a common denominator to compare the fractions.

Write $<$, $=$, or $>$ to make a true statement.

$$6. \frac{9}{10} \text{ (} > \text{)} \frac{2}{3}$$

$$7. \frac{5}{8} \text{ (} > \text{)} \frac{3}{5}$$

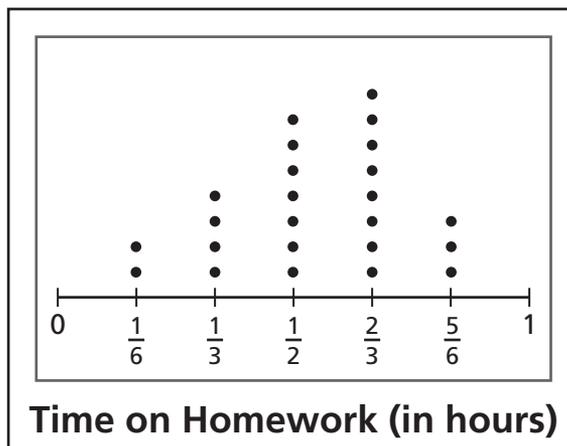
$$8. \frac{2}{3} \text{ (} < \text{)} \frac{5}{6}$$

$$9. \frac{4}{14} \text{ (} = \text{)} \frac{2}{7}$$

$$10. \frac{4}{5} \text{ (} > \text{)} \frac{4}{10}$$

$$11. \frac{6}{8} \text{ (} < \text{)} \frac{5}{6}$$

12. **Stretch Your Thinking** Mr. Brady asked his students how long it took each of them to complete their homework from the previous night. He presented the results in the line plot shown. How many minutes did the greatest number of students take to do their homework? How many combined hours did those particular students spend on homework? Explain.



40 minutes; $5\frac{1}{3}$ hours; The greatest number of marks on the plot shows that 8 students spent $\frac{2}{3}$ hour each on homework. I made an equivalent fraction with denominator 60, $\frac{2}{3} \times \frac{20}{20} = \frac{40}{60}$, to convert to 40 minutes; I figured the combined hours by multiplying $\frac{2}{3}$ by 8, $\frac{2}{3} \cdot 8 = \frac{16}{3} = 5\frac{1}{3}$, to get $5\frac{1}{3}$ hours.

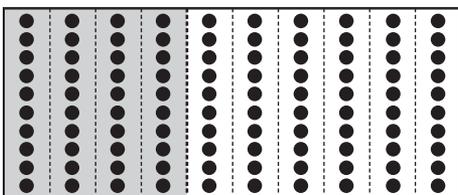
Homework

Use the visual to fill in each blank.

1. The shaded part of the whole represents:

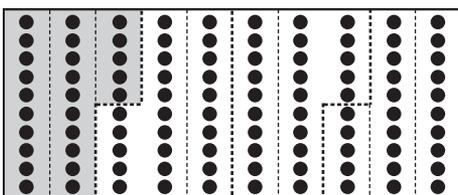
$$\frac{40}{100} = \underline{40} \text{ of } \underline{100} \text{ equal parts and the decimal } \underline{0.40}$$

$$\frac{4}{10} = \underline{4} \text{ of } \underline{10} \text{ equal parts and the decimal } \underline{0.4}$$



2. The shaded part of the whole represents:

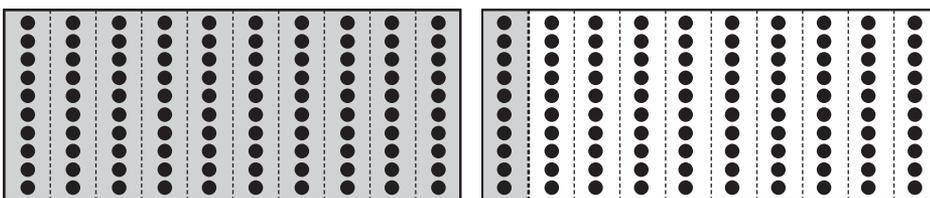
$$\frac{25}{100} = \underline{25} \text{ of } \underline{100} \text{ equal parts, } \frac{1}{4} = \underline{1} \text{ of } \underline{4} \text{ equal parts, and the decimal } \underline{0.25}$$



3. The shaded part of the whole represents:

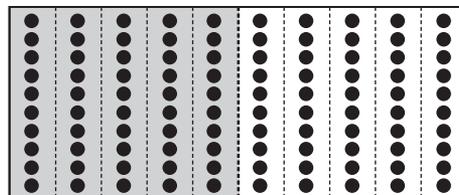
$$\frac{110}{100} = \underline{110} \text{ of } \underline{100} \text{ equal parts, } \frac{11}{10} = \underline{11} \text{ of } \underline{10} \text{ equal parts,}$$

$$1\frac{1}{10} = \underline{1} \text{ whole and } \underline{1} \text{ of } \underline{10} \text{ equal parts, and the decimal } \underline{1.1}$$



Solve.

4. Juan shaded a part of the whole. Four fractions represent the shaded part of the whole. List each fraction. Explain how each fraction relates to the shaded part of the whole.



$\frac{50}{100}$: 50 of 100 equal parts or pennies; $\frac{5}{10}$: 5 of 10 equal parts with 10 pennies in each part; and $\frac{1}{2}$: 1 of 2 equal parts with 50 pennies in each part;
 $\frac{2}{4}$: 2 of 4 equal parts with 25 pennies in each part.

Remembering

Convert each measurement.

1. 12 hrs = 720 min

2. 2 months = 8 wks

3. 43 min = 2,580 sec

4. 6 days = 144 hrs

Write the equivalent mixed number.

5. $\frac{12}{5} = \underline{2\frac{2}{5}}$

6. $\frac{19}{4} = \underline{4\frac{3}{4}}$

7. $\frac{15}{2} = \underline{7\frac{1}{2}}$

8. $\frac{29}{3} = \underline{9\frac{2}{3}}$

9. $\frac{49}{8} = \underline{6\frac{1}{8}}$

10. $\frac{37}{6} = \underline{6\frac{1}{6}}$

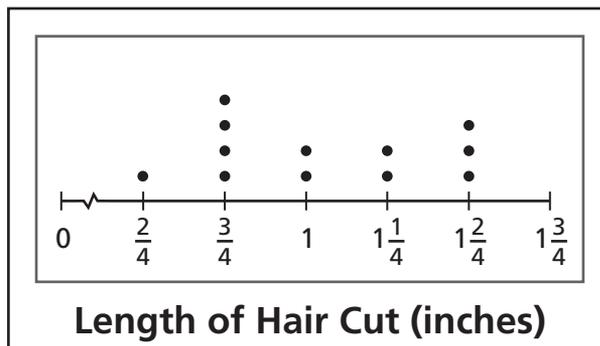
The line plot shows how much hair Emmy had cut each time she went to the hair dresser this year. Use the line plot to answer Exercises 11–12.

11. How many times did Emmy get her hair cut in the year?

12 times

12. How much longer was the length of hair Emmy had cut most often than the length of hair she had cut least often?

$\frac{1}{4}$ inch



13. **Stretch Your Thinking** Milo has 3 quarters in his right pocket and 8 dimes in his left pocket. Show the amount of money Milo has in each pocket as a sum of fractions and as a sum of decimals. In which pocket is there more money?

Right pocket: $\frac{25}{100} + \frac{25}{100} + \frac{25}{100} = \frac{75}{100}$; $0.25 + 0.25 +$

$0.25 = 0.75$. Left pocket: $\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} +$

$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \frac{8}{10}$; $0.10 + 0.10 + 0.10 + 0.10 + 0.10$

$+ 0.10 + 0.10 + 0.10 = 0.80$. There is more money

in Milo's left pocket.

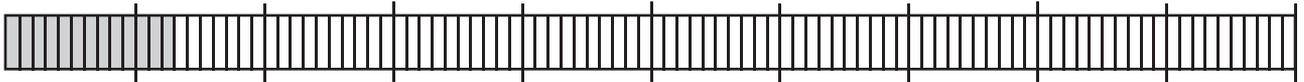
Homework

Write a fraction and a decimal number to show what part of each bar is shaded.



1. Fraction: $\frac{7}{10}$

Decimal Number: 0.7



2. Fraction: $\frac{13}{100}$

Decimal Number: 0.13

Write these amounts as decimal numbers.

3. 5 tenths 0.5

4. 9 hundredths 0.09

5. 56 hundredths 0.56

6. $\frac{80}{100}$ 0.80

7. $\frac{3}{10}$ 0.3

8. $\frac{1}{100}$ 0.01

9. 3 cents $\$0.03$

10. 2 quarters $\$0.50$

11. 3 nickels $\$0.15$

Answer the questions below.

12. If you took a test with 10 questions and got 7 of them right, what decimal part would that be? 0.7
What decimal part did you get wrong? 0.3

13. If you had a dollar and spent 5 cents, what decimal amount did you spend? $\$0.05$ What decimal amount do you have left? $\$0.95$

14. If you had a bag of 100 beads and used 40, what decimal number did you use? Express this number in both tenths and hundredths. 0.4 0.40

15. If you had to travel 100 miles and went 25 miles, what decimal part of the trip did you travel? 0.25 miles
What decimal part of the trip do you still have left? 0.75 miles

Remembering

Convert.

1. 7 ft = 84 in.

2. 4 mi = 7,040 yd

3. 15 yd = 45 ft

4. 2 yd = 72 in.

Add or subtract.

$$\begin{array}{r} 5. \quad 8\frac{4}{8} \\ + 2\frac{2}{8} \\ \hline 10\frac{6}{8} \end{array}$$

$$\begin{array}{r} 6. \quad 1\frac{1}{3} \\ + 7\frac{1}{3} \\ \hline 8\frac{2}{3} \end{array}$$

$$\begin{array}{r} 7. \quad 5\frac{11}{12} \\ - 1\frac{5}{12} \\ \hline 4\frac{6}{12} \end{array}$$

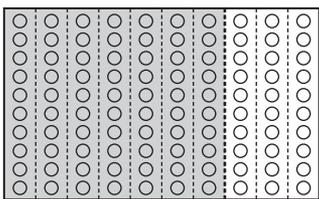
$$\begin{array}{r} 8. \quad 8\frac{2}{5} \\ - 7\frac{4}{5} \\ \hline \frac{3}{5} \end{array}$$

Use the visual to fill in each blank.

9. The shaded part of the whole represents:

$\frac{70}{100}$ represents 70 of 100 equal parts
and the decimal 0.70.

$\frac{7}{10}$ represents 7 of 10 equal parts
and the decimal 0.7.



10. **Stretch Your Thinking** Rosemary put 7 dimes and 3 pennies in a tip jar at the café. Show this amount as a decimal and as a fraction. How much more change would Rosemary have to put in the tip jar to make a whole dollar?

$0.73 = \frac{73}{100}$; Another 0.27 or $\frac{27}{100}$ would make

one whole dollar.

Homework

Write the decimal numbers that come next.

1. 0.05 0.06 0.07 0.08 0.09 0.10 0.11
 2. 0.26 0.27 0.28 0.29 0.30 0.31 0.32
 3. 0.3 0.4 0.5 0.6 0.7 0.8 0.9

Write each number in decimal form.

4. 9 tenths 0.9 5. 5 hundredths 0.05 6. 29 hundredths 0.29
 7. $\frac{73}{100}$ 0.73 8. $\frac{2}{10}$ 0.2 9. $\frac{8}{100}$ 0.08
 10. 4 pennies \$0.04 11. 3 quarters \$0.75 12. 6 dimes and 1 nickel \$0.65

Solve.

A small jar contains 4 white gumballs and 6 red gumballs.

13. What decimal number shows which part of the gumballs are red? 0.6
 14. What decimal number shows which part of the gumballs are white? 0.4
 15. A large jar of 100 gumballs has the same fractions of red gumballs and white gumballs as the small jar. How many gumballs in the large jar are red? 60 How many are white? 40

A sidewalk has 100 squares. There are cracks in 9 of the squares.

16. What decimal number shows what part of the sidewalk is cracked? 0.09
 17. What fraction shows what part of the sidewalk is cracked? $\frac{9}{100}$

Write each decimal tenth as a decimal hundredth.

18. $0.6 = \underline{0.60}$ 19. $0.2 = \underline{0.20}$ 20. $0.5 = \underline{0.50}$

Remembering

Solve.

Show your work.

1. Mena bought a 1-gallon jug of water. How many 2-cup servings are in the jug?

8 servings

2. Kaden's filled backpack weighs 7 pounds. How many ounces does the backpack weigh?

112 ounces

Add or subtract.

3. $\frac{7}{8} - \frac{3}{8} = \frac{4}{8}$, or $\frac{1}{2}$

4. $\frac{1}{4} + \frac{3}{4} = 1$

5. $10\frac{11}{12} - 5\frac{4}{12} = 5\frac{7}{12}$

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

7. $\frac{4}{9} + 3\frac{4}{9} = 3\frac{8}{9}$

8. $8\frac{5}{6} - 4\frac{4}{6} = 4\frac{1}{6}$

Write these amounts as decimal numbers.

9. 8 tenths 0.8

10. 5 hundredths 0.05

11. 27 hundredths 0.27

12. $\frac{2}{100}$ 0.02

13. $\frac{93}{100}$ 0.93

14. $\frac{7}{10}$ 0.7

15. 46 pennies 0.46

16. 3 nickels 0.15

17. 9 dimes 0.9

18. **Stretch Your Thinking** Ben says that 0.80 is greater than 0.8 because 80 is greater than 8. Explain his error.

Possible answer: the 0 at the end of the decimal number does not make a difference like it does with whole numbers. The decimal 0.80 is equivalent to the fraction $\frac{80}{100}$. The decimal 0.8 is equivalent to the fraction $\frac{8}{10}$. 80 parts of a whole divided into 100 parts is the same amount as 8 parts of a whole divided into 10 parts. It's like saying 80 pennies is equal to 8 dimes.

Homework

Write each number in decimal form.

1. 6 tenths 0.6

2. 85 hundredths 0.85

3. 9 hundredths 0.09

4. 7 tenths 0.7

5. $\frac{4}{100}$ 0.04

6. $2\frac{9}{10}$ 2.9

7. $\frac{23}{10}$ 2.3

8. $11\frac{3}{100}$ 11.03

9. 6 cents \$0.06

10. twelve *and* 5 tenths 12.5

11. thirty *and* 25 hundredths 30.25

Write each decimal in expanded form.

12. 27.9 20 + 7 + 0.9

13. 153.76 100 + 50 + 3 + 0.7 + 0.06

14. 203.06 200 + 3 + 0.06

Use the graph to answer questions 15–17.

15. What decimal part of all the melons did Amy pick? 0.1

16. What decimal part of all the melons did Paco pick? 0.4

17. What decimal part of all the melons did Joey and Lisa pick together? 0.5

Melons Picked

Amy	
Joey	
Lisa	
Paco	

Key:  = 1 melon

Solve.

18. A centipede has 100 legs. What decimal part is one leg? 0.01

19. At a banquet, each cake was cut into 100 pieces. The guests ate 4 whole cakes and all but one piece of another. What decimal number represents the number of cakes that were eaten? 4.99

20. Miguel earned \$10 and saved \$3. What decimal part did he save? 0.3

21. Jing earned \$100, and saved \$30. What decimal part did she save? 0.30

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 5,000 \\ - 3,296 \\ \hline 1,704 \end{array}$$

$$\begin{array}{r} 2. \quad 286,361 \\ + 45,743 \\ \hline 332,104 \end{array}$$

$$\begin{array}{r} 3. \quad 863,542 \\ - 794,815 \\ \hline 68,727 \end{array}$$

Multiply.

$$4. \quad 4 \times \frac{1}{5} = \frac{4}{5}$$

$$5. \quad 9 \times \frac{2}{3} = \frac{18}{3}, \text{ or } 6$$

$$6. \quad 3 \times \frac{7}{8} = \frac{21}{8}, \text{ or } 2\frac{5}{8}$$

$$7. \quad 2 \times \frac{5}{12} = \frac{10}{12}, \text{ or } \frac{5}{6}$$

$$8. \quad 5 \times \frac{6}{7} = \frac{30}{7}, \text{ or } 4\frac{2}{7}$$

$$9. \quad 7 \times \frac{9}{10} = \frac{63}{10}, \text{ or } 6\frac{3}{10}$$

Write the decimal numbers that come next.

10. 0.03 0.04 0.05 0.06; 0.07; 0.08; 0.09

11. 0.2 0.3 0.4 0.5; 0.6; 0.7; 0.8

12. 0.75 0.76 0.77 0.78; 0.79; 0.80; 0.81

Write each decimal tenth as a decimal hundredth.

13. $0.4 = \underline{0.40}$

14. $0.9 = \underline{0.90}$

15. $0.1 = \underline{0.10}$

16. $0.3 = \underline{0.30}$

17. $0.5 = \underline{0.50}$

18. $0.7 = \underline{0.70}$

19. Stretch Your Thinking A handful of paperclips is 5.2 grams. A handful of push pins is 500 centigrams. Which handful weighs more? Explain.

The handful of paperclips weighs more. Each gram
is equal to 100 centigrams. So, 5.2 grams = 520
centigrams. Since 520 centigrams > 500 centigrams,
the paperclips weigh more.

Homework

Write these amounts as decimal numbers.

1. 4 tenths 0.4

2. 72 hundredths 0.72

3. 6 hundredths 0.06

4. 8 cents \$0.08

5. $\frac{68}{100}$ 0.68

6. $9\frac{4}{10}$ 9.4

7. $\frac{16}{100}$ 0.16

8. $6\frac{7}{100}$ 6.07

9. 30 hundredths 0.30

Circle the number that does not have the same value as the others.

10. 0.95 0.950 0.905

11. 0.2 0.20 0.02

12. 0.730 0.703 0.73

13. 1.6 1.60 1.06

14. 0.59 5.90 $\frac{59}{100}$

15. 0.08 0.008 0.080

Write $>$, $<$, or $=$ to compare these numbers.

16. 4.67 $<$ 12.7 17. 0.35 $<$ 0.4 18. 4.58 $>$ 1.25 19. 8.3 $>$ 0.83

20. 0.92 $>$ 0.91 21. 2.3 $>$ 0.84 22. 10.1 $>$ 10.01 23. 7.4 $>$ 0.74

The table shows how far four students jumped in the long jump contest. Use the table to answer the questions.

24. Whose jump was longest? Hester

25. Whose jump was shortest? Amanda

26. Which two students jumped the same distance? Joshua, Miguel

Long Jump Contest

Name	Length of Jump
Joshua	1.60 meters
Amanda	1.59 meters
Hester	1.7 meters
Miguel	1.6 meters

Remembering

Choose a measurement unit for each rectangle and find the area and perimeter. Show your work.

1. 11 by 8

88 sq units;

38 units

2. 5 by 9

45 sq units;

28 units

3. 2 by 6

12 sq units;

16 units

Multiply.

4. $5 \cdot \frac{2}{3} = \frac{10}{3}$ or $3\frac{1}{3}$

5. $12 \cdot \frac{1}{5} = \frac{12}{5}$ or $2\frac{2}{5}$

6. $8 \cdot \frac{4}{7} = \frac{32}{7}$ or $4\frac{4}{7}$

7. $6 \cdot \frac{3}{8} = \frac{18}{8}$ or $2\frac{2}{8} = 2\frac{1}{4}$

Solve.

8. There are 10 servings in a bag of pretzels. At a school picnic, 3 whole bags are eaten and 7 servings of another bag. What decimal number represents the number of bags of pretzels that are eaten?

3.7

9. **Stretch Your Thinking** Lance says that you can compare any decimal numbers the way that you alphabetize words. You can tell which number is less (or which word comes first in the dictionary) by comparing each digit (or letter) from left to right. Is Lance's thinking correct? Give a numerical example to explain your reasoning.

No, his thinking is not correct. For example, if you compare 45.9 to 6.73 using Lance's method, you would say 45.9 is less than 6.73 since 4 is less than 6.

This is not correct. The 4 is in the tens place and there are no tens in 6.73. So, 45.9 is actually greater.

Homework

Write $>$, $<$, or $=$ to compare these numbers.

1. $\frac{3}{4} > \frac{2}{8}$

2. $\frac{4}{10} < \frac{4}{5}$

3. $1\frac{3}{6} < 2\frac{3}{6}$

4. $1\frac{1}{6} < 1\frac{1}{4}$

5. $2\frac{7}{8} > 2\frac{3}{7}$

6. $1\frac{4}{9} < 1\frac{5}{10}$

Complete.

7. $\frac{3}{9} = \frac{3 \times \boxed{5}}{9 \times \boxed{5}} = \frac{\boxed{15}}{45}$

8. $\frac{6}{10} = \frac{6 \times \boxed{2}}{10 \times \boxed{2}} = \frac{12}{\boxed{20}}$

9. $\frac{5}{8} = \frac{5 \times \boxed{8}}{8 \times \boxed{8}} = \frac{\boxed{40}}{\boxed{64}}$

10. $\frac{24}{30} = \frac{24 \div \boxed{6}}{30 \div \boxed{6}} = \frac{\boxed{4}}{5}$

11. $\frac{28}{35} = \frac{28 \div \boxed{7}}{35 \div \boxed{7}} = \frac{\boxed{4}}{\boxed{5}}$

12. $\frac{6}{18} = \frac{6 \div \boxed{6}}{18 \div \boxed{6}} = \frac{1}{\boxed{3}}$

Solve.

Show your work

13. Cole lives 2.4 miles from the library. Gwen lives 2.04 miles from the library. Xander lives 2.40 miles from the library. Who lives closest to the library: Cole, Gwen, or Xander?

Gwen

14. After making his art project, Robbie has $\frac{2}{10}$ yard of rope left. What is $\frac{2}{10}$ written as a decimal?

0.2 or 0.20

Remembering

Solve.

Show your work.

1. A 2-quart bottle of juice has 1,040 calories. Each serving is 1 cup. How many calories are in each serving of the juice?

$$130 \text{ calories; } 1 \text{ qt} = 4 \text{ C; } 2 \text{ qt} = 8 \text{ C;}$$

$$1 \text{ bottle} = 8 \text{ servings; } 1,040 \div 8 = 130$$

2. The perimeter of a photograph is 20 inches. The longer side of the photograph is 6 inches. What is the length of the shorter side?

$$4 \text{ inches; } 6 + 6 = 12; 20 - 12 = 8; 8 \div 2 = 4 \text{ inches}$$

Write an equation. Then solve.

Equations will vary.

3. Peggy needs $\frac{3}{4}$ cup of flour for each batch of pancakes. If she makes 5 batches of pancakes, how many cups of flour does she use?

$$f = 5 \cdot \frac{3}{4}; f = 3\frac{3}{4}; 3\frac{3}{4} \text{ cups}$$

Compare. Use $<$ or $>$.

4. $26.3 > 8.3$

5. $5.09 < 5.9$

6. $1.7 < 7.1$

7. $84.2 > 8.42$

8. $9.40 > 9.04$

9. $57 > 5.7$

10. $11.28 < 12.8$

11. $6.31 > 6.13$

12. **Stretch Your Thinking** On the first day of a trip, the Brenner family hikes 2.8 miles. On the second day, they hike $1\frac{2}{5}$ miles along a trail. They take a break, and hike back to where they started. Did they hike more the first day or the second day? Explain.

They hiked the same amount on both days. On the second day, they hiked $1\frac{2}{5} + 1\frac{2}{5} = 2\frac{4}{5}$ miles. This is equivalent to $2\frac{8}{10}$ miles, which is 2.8 as a decimal.

Homework

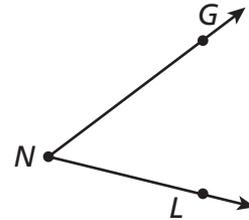
Draw each geometric figure. **Check students' drawings.**

1. a point

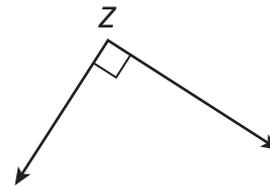
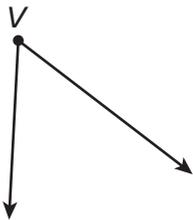
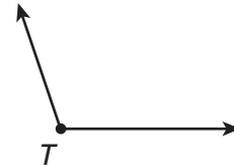
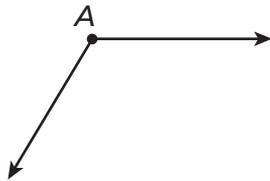
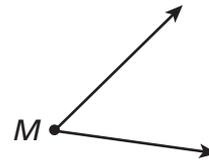
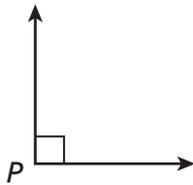
2. a ray

3. an angle

4. Name the angle shown. $\angle GNL$ or $\angle LNG$



Look at the angles below.



5. Which angles are right angles? $\angle P$ and $\angle Z$

6. Which angles are acute angles? $\angle M$ and $\angle V$

7. Which angles are obtuse angles? $\angle A$ and $\angle T$

Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 5\frac{4}{5} \\ + 3\frac{1}{5} \\ \hline 8\frac{5}{5} = 9 \end{array}$$

$$\begin{array}{r} 2. \quad 12\frac{5}{8} \\ - 4\frac{3}{8} \\ \hline 8\frac{2}{8} = 8\frac{1}{4} \end{array}$$

$$\begin{array}{r} 3. \quad 3\frac{5}{7} \\ + 9\frac{3}{7} \\ \hline 12\frac{8}{7} = 13\frac{1}{7} \end{array}$$

$$\begin{array}{r} 4. \quad 6\frac{2}{9} \\ - 2\frac{5}{9} \\ \hline 3\frac{6}{9} = 3\frac{2}{3} \end{array}$$

Write $<$ or $>$ to make each statement true.

$$5. \quad \frac{3}{4} \text{ (} > \text{)} \frac{1}{4}$$

$$6. \quad \frac{5}{6} \text{ (} < \text{)} \frac{5}{4}$$

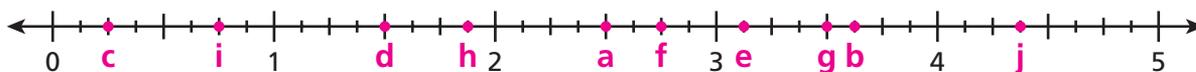
$$7. \quad \frac{7}{10} \text{ (} > \text{)} \frac{7}{12}$$

$$8. \quad \frac{6}{8} \text{ (} > \text{)} \frac{4}{8}$$

$$9. \quad \frac{4}{8} \text{ (} > \text{)} \frac{4}{12}$$

$$10. \quad \frac{17}{25} \text{ (} < \text{)} \frac{21}{25}$$

11. Mark and label the point for each fraction or mixed number with its letter.



a. $2\frac{1}{2}$

b. $3\frac{5}{8}$

c. $\frac{1}{4}$

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

e. $3\frac{1}{8}$

f. $2\frac{3}{4}$

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

h. $1\frac{7}{8}$

i. $\frac{6}{8}$

j. $4\frac{3}{8}$

12. **Stretch Your Thinking** Two spiders sit on the upper left corner of a window frame. One spider starts walking right along the top of the window frame. The other spider starts walking down along the left side of the window frame. Name each of the following using geometry terms.

a.) the place where the spiders began point, or endpoint

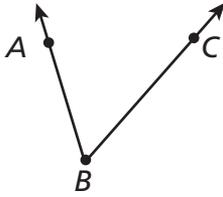
b.) the walking path of each spider ray

c.) the type of angle formed by their paths right angle

Homework

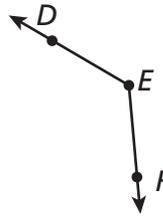
Use a protractor to find the measure of each angle.

1.



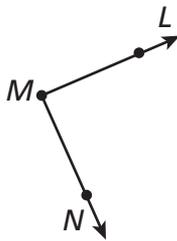
60°

2.



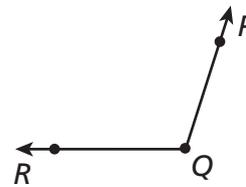
125°

3.



90°

4.



108°

Draw each angle. Check students' drawings.

5. an angle with measure 75° 6. an angle with measure 150°

7. On a protractor there are two scales. Read one scale to find 44° . What is the measure on the other scale?

136°

8. Which would be greater, the measure of a right angle or the measure of an obtuse angle?

the measure of an obtuse angle

Remembering

Solve.

Show your work.

1. Presley ordered a small popcorn and Ella ordered a medium popcorn. They both ate $\frac{3}{4}$ of their popcorn. Who ate more popcorn? Explain.

Ella; Three-fourths of a larger whole is greater than three-fourths of a smaller whole.

2. It takes both Jack and Scott 12 minutes to walk to school. Jack had his headphones on for $\frac{2}{3}$ of the walk and Scott had his on for $\frac{2}{5}$ of the walk. Who had their headphones on longer? Explain.

Jack; I wrote an equivalent fraction for each fraction using the denominator 15:

$$\frac{2 \times 5}{3 \times 5} = \frac{10}{15}, \frac{2 \times 3}{5 \times 3} = \frac{6}{15}, \frac{10}{15} > \frac{6}{15}, \text{ so } \frac{2}{3} > \frac{2}{5}.$$

Draw each geometric figure. Check students' drawings.

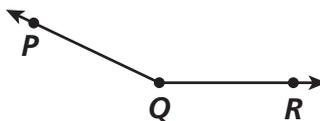
3. a line segment

4. a line

5. an angle

6. Name the angle shown.

$\angle PQR$ or $\angle RQP$



7. **Stretch Your Thinking** You can think of the two hands of a clock as rays of an angle. What type of angle do you see between the clock hands when the clock shows the following times? Draw a sketch, if you need to.

a.) 3:05 acute angle

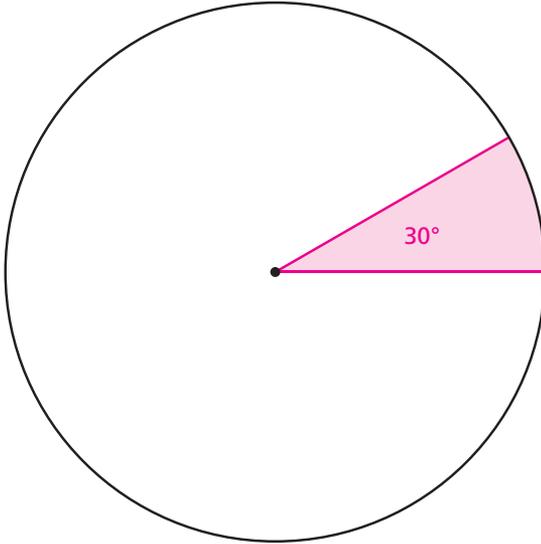
b.) 6:00 straight angle

c.) 9:10 obtuse angle

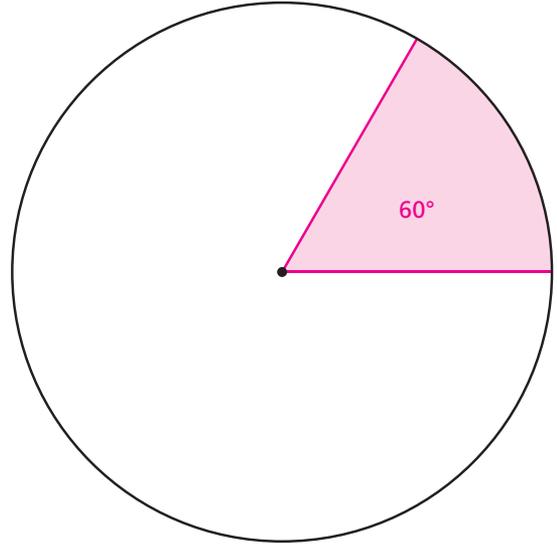
Homework

Use a straightedge and a protractor to draw and shade an angle of each type. Measure and label each angle. **Answers will vary. Possible answers are given.**

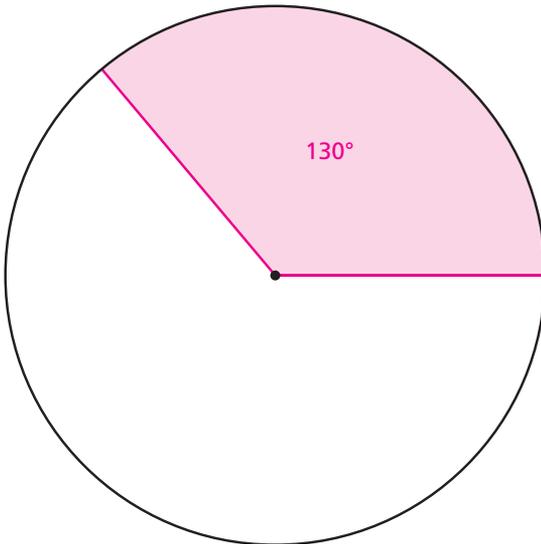
1. acute angle less than 40°



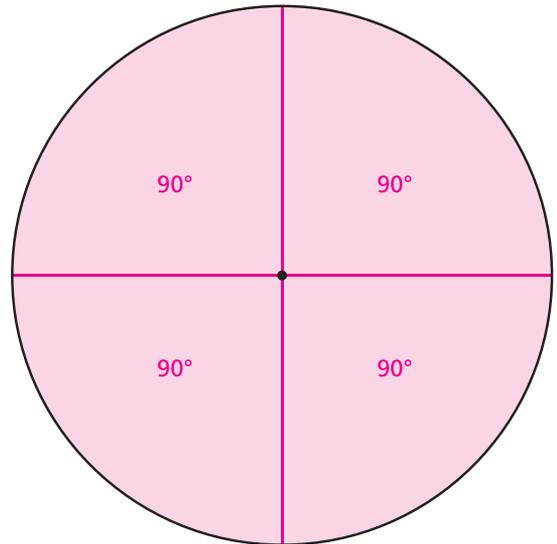
2. acute angle greater than 40°



3. obtuse angle less than 160°



4. four angles with a sum of 360°



5. Write out the sum of your angle measures in Exercise 4 to show that the sum equals 360° .

Check students' work.

Remembering

Complete.

$$1. \frac{4}{7} = \frac{4 \times \boxed{3}}{7 \times \boxed{3}} = \frac{12}{\boxed{21}}$$

$$2. \frac{5}{8} = \frac{5 \times \boxed{5}}{8 \times \boxed{5}} = \frac{\boxed{25}}{40}$$

$$3. \frac{8}{9} = \frac{8 \times \boxed{4}}{9 \times \boxed{4}} = \frac{32}{\boxed{36}}$$

$$4. \frac{1}{4} = \frac{1 \times \boxed{12}}{4 \times \boxed{12}} = \frac{12}{\boxed{48}}$$

$$5. \frac{3}{10} = \frac{3 \times \boxed{7}}{10 \times \boxed{7}} = \frac{\boxed{21}}{70}$$

$$6. \frac{2}{11} = \frac{2 \times \boxed{6}}{11 \times \boxed{6}} = \frac{12}{\boxed{66}}$$

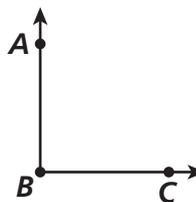
Use a protractor to find the measure of each angle.

7.



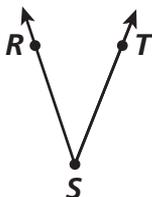
165°

8.



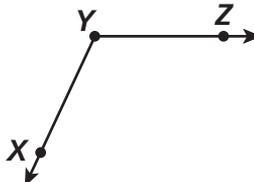
90°

9.



40°

10.



115°

11. **Stretch Your Thinking** Draw an angle with a measure of 0° . Describe your drawing.

Possible description: my drawing looks like one ray because there is no opening between the rays. They share the exact same space.

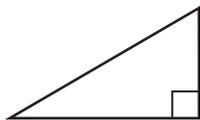
Check students' drawings.



Homework

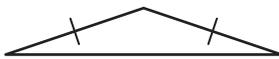
Name each triangle by its angles and then by its sides.

1.



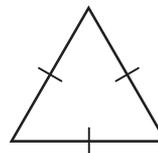
right, scalene

2.



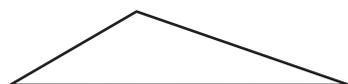
obtuse, isosceles

3.



acute, equilateral

4.



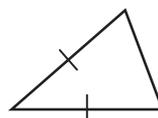
obtuse, scalene

5.



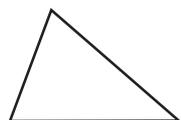
obtuse, scalene

6.



acute, isosceles

7.



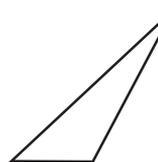
acute, scalene

8.



right, isosceles

9.



obtuse, scalene

10. Describe how acute, obtuse, and right triangles are different.

Acute triangles have three acute angles, right triangles have one right angle, and obtuse triangles have one obtuse angle.

11. Describe how scalene, isosceles, and equilateral triangles are different.

Scalene triangles have no equal sides, isosceles triangles have 2 equal sides, and equilateral triangles have 3 equal sides.

Remembering

Simplify each fraction.

$$1. \frac{9 \div \boxed{3}}{12 \div \boxed{3}} = \frac{3}{4}$$

$$2. \frac{18 \div \boxed{6}}{30 \div \boxed{6}} = \frac{3}{5}$$

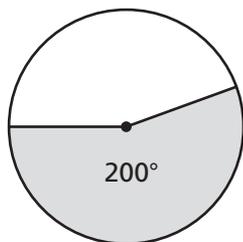
$$3. \frac{25 \div \boxed{25}}{75 \div \boxed{25}} = \frac{1}{3}$$

$$4. \frac{32 \div \boxed{8}}{72 \div \boxed{8}} = \frac{4}{9}$$

The measure of each shaded angle is given.

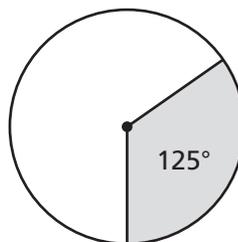
Write the measure of each angle that is not shaded.

5.



160°

6.



235°

7. **Stretch Your Thinking** Aileen is trying to correctly classify a triangle by its angles. Her only information is that the triangle has at least one acute angle. Aileen says this must be an acute triangle. Is she right? Explain.

Possible explanation: it could be an acute triangle.

It also could be a right triangle or an obtuse triangle.

She does not have enough information. All triangles

have at least two acute angles. An acute triangle

has three acute angles. A right triangle has one

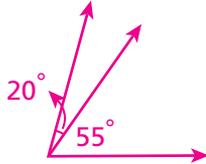
right angle and two acute angles. An obtuse triangle

has one obtuse angle and two acute angles.

Homework

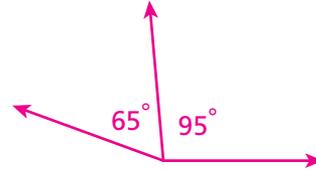
Use a protractor to draw the two described angles next to each other. What is the measure of the larger angle they form when they are put together?

1. The measures of the two angles are 20° and 55° .



Drawings may vary; 75°

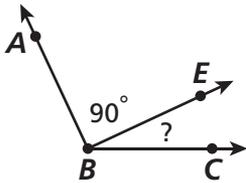
2. The measures of the two angles are 65° and 95° .



Drawings may vary; 160°

Write and solve an equation to find the unknown angle measure. Equations may vary.

3.

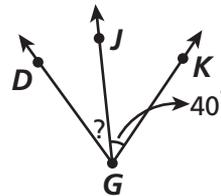


The measure of $\angle ABC$ is 115° .

What is the measure of $\angle EBC$?

$$90^\circ + x = 115^\circ; 25^\circ$$

4.



The measure of $\angle DGK$ is 70° .

What is the measure of $\angle DGJ$?

$$70^\circ - 40^\circ = x; 30^\circ$$

5. When two 45° angles are put together, what kind of angle will they form?

a right angle

Remembering

Use a common denominator to compare the fractions.

Write $>$, $<$, or $=$ to make a true statement.

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

2. $\frac{4}{6} = \frac{6}{9}$

3. $\frac{7}{12} < \frac{2}{3}$

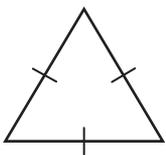
4. $\frac{3}{10} > \frac{2}{7}$

5. $\frac{3}{4} < \frac{5}{6}$

6. $\frac{7}{12} < \frac{19}{24}$

Name each triangle by its angles and then by its sides.

7.



acute

equilateral

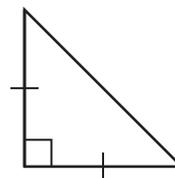
8.



obtuse

scalene

9.



right

isosceles

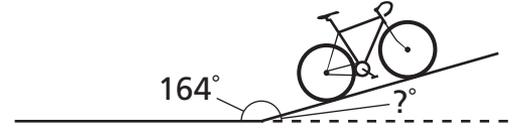
10. **Stretch Your Thinking** Four angles are put together, forming a straight angle. Two of the angles are the same size. The other two angles are also the same size but different from the other two. If one of the four angles measures 40° , what are the measures of the other three angles? Explain.

$40^\circ, 50^\circ, 50^\circ$; The whole angle is a straight angle, so the sum of the angles is 180° . One of the angles is 40° , so another angle is 40° because two of the angles are the same size. So far, the sum is $40^\circ + 40^\circ$, or 80° . So, the other two angles must measure $180^\circ - 80^\circ$, or 100° , altogether. Since these two angles are the same size, they must be $100^\circ \div 2 = 50^\circ$ each.

Homework

Write an equation to solve each problem.

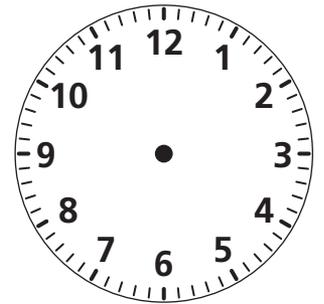
1. Suppose you are bicycling along a straight road that suddenly starts sloping up a hill. You want to know what the angle measure of the slope is, but you can't measure inside the hill.



If you are able to measure the angle on top of the road, however, you can use an equation to find the unknown measure. What is the angle of the slope of the hill shown?

$$\underline{180^\circ - 164^\circ = x; 16^\circ}$$

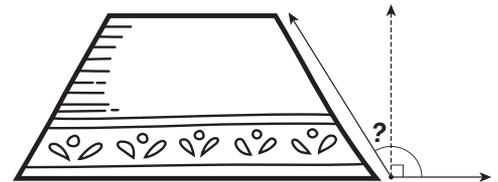
2. On the clock face shown at the right, draw clock hands to show the times 3:00 and 5:00. One clock hand for each time will overlap with a clock hand from the other time. What is the difference between the measures of the angles formed by the hands of the clocks for the two times? (Hint: There are 30° between each pair of numbers on a clock.)



Check students' clocks.

$$\underline{150^\circ - 90^\circ = x; 60^\circ}$$

3. A lampshade is often sloped, with the top narrower than the bottom. For the lampshade shown, the whole angle shown is 122° . Find the measure of the unknown angle to find by how much the lampshade is sloped from upright.



$$\underline{122^\circ - 90^\circ = x; 32^\circ}$$

Remembering

The line plot shows the amount of cream put in a cup by each of a restaurant's lunch customers who ordered hot tea. Use the line plot for Problems 1–3.

1. How many customers ordered hot tea?

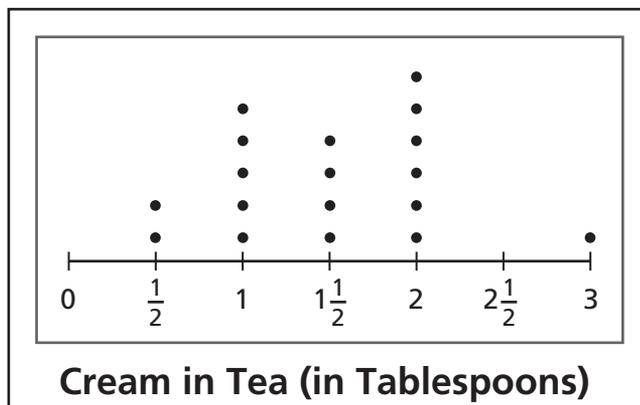
18 customers

2. How many customers used more than 1 tablespoon of cream?

11 customers

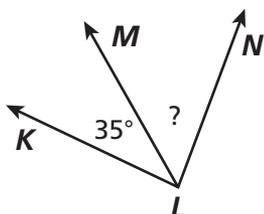
3. What is the difference between the greatest and least amount of cream the customers used?

$2\frac{1}{2}$ tablespoons



Use an equation to find the unknown angle measure. Equations may vary.

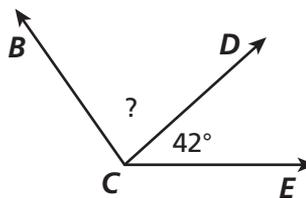
4.



The measure of $\angle KLN$ is 85° .

$35^\circ + x = 85^\circ$; 50°

5.



The measure of $\angle BCE$ is 125° .

$125^\circ - 42^\circ = x$; 83°

6. **Stretch Your Thinking** Hannah says that when the hands on a clock show 9:30, the angle is 90° . Jennie says the angle is obtuse. Who is correct? Explain.

Make a drawing to show which girl is correct.

Jennie is correct. Possible answer: when the

hands on a clock show 9:30, the minute hand

will be on the 6 and the hour hand will be

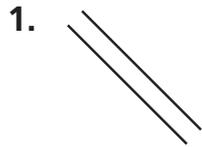
half way between the 9 and 10. This angle has

a measure greater than 90° , so it is obtuse.

Check students' drawings. Clocks should show 9:30.

Homework

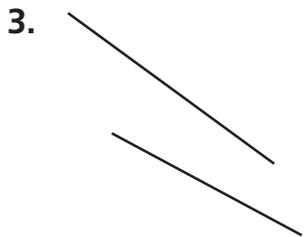
Which of the line segments below look parallel? Which look perpendicular? Which look neither parallel nor perpendicular? Explain your thinking. Possible answers given.



Parallel: yes Perpendicular: no
They are the same distance apart at all points.

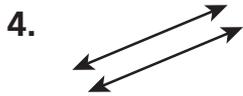


Parallel: no Perpendicular: yes
The lines meet at a right angle.

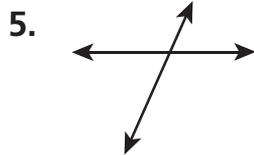


Parallel: no Perpendicular: no
They are not the same distance apart at all points, and they do not intersect at right angles.

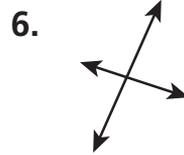
Tell whether each pair of lines is parallel, perpendicular, or neither.



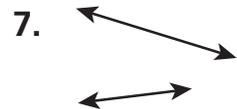
parallel



neither



perpendicular



neither

8. First draw a line segment 5 cm long. Then draw a line segment 7 cm long parallel to your first line segment. Check students' drawings.

Remembering

Use the visual to fill in each blank.

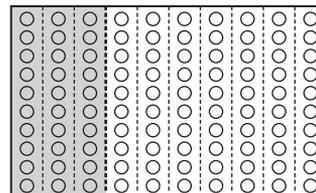
1. The shaded part of the whole represents:

$\frac{30}{100}$ represents 30 of 100 equal parts

and the decimal 0.30.

$\frac{3}{10}$ represents 3 of 10 equal parts

and the decimal 0.3.



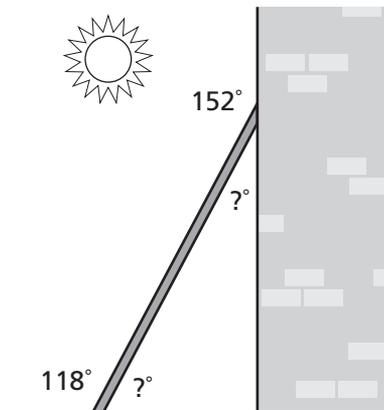
Write an equation to solve each problem. Equations may vary.

2. A ladder leans up against a wall, as shown in the diagram. What angle measure does the ladder form with the wall?

$$180^\circ - 152^\circ = x; 28^\circ$$

3. What angle measure does the ladder form with the ground?

$$118^\circ + x = 180^\circ; 62^\circ$$



4. **Stretch Your Thinking** Look around the room. Describe 3 pairs of parallel line segments you see. Describe 3 pairs of perpendicular line segments.

Answers will vary. Possible answers are given.

Parallel: 1. the stripes on my shirt

2. the top and bottom edges of my sheet of paper

3. the boards of the hardwood floor

Perpendicular:

1. the top and the side edges of the board

2. the shelf and the side of the bookcase

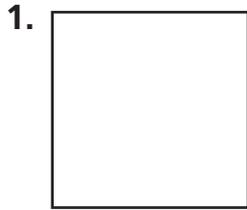
3. the leg and the top of the desk

Homework

VOCABULARY
 quadrilateral
 square
 trapezoid
 rhombus
 rectangle
 parallelogram

Using the Vocabulary box at the right, write the name of the quadrilateral that best describes each figure. Use each word once. Describe how it is different from other quadrilaterals.

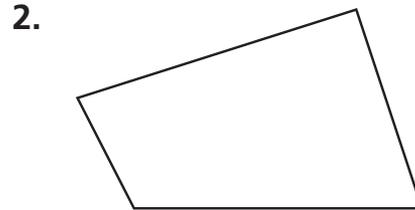
Answers will vary. Possible answers given.



square; possible answer:

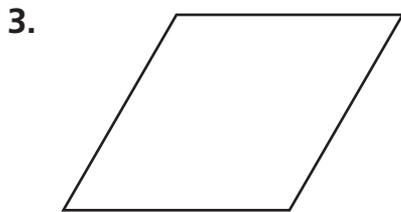
4 equal sides and

4 right angles



quadrilateral; possible answer:

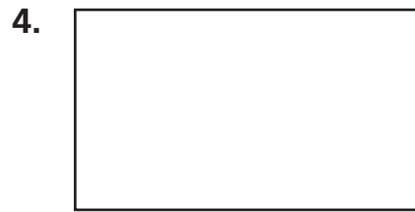
no opposite sides parallel



rhombus; possible answer:

opposite sides parallel;

4 equal sides



rectangle; possible answer:

opposite sides parallel;

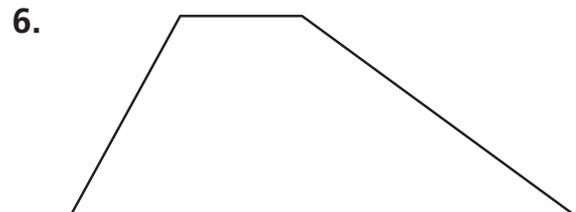
4 right angles



parallelogram; possible answer:

opposite sides parallel and

equal



trapezoid; possible answer:

exactly 1 pair of opposite sides

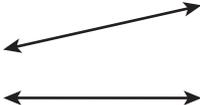
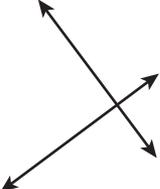
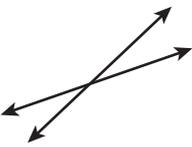
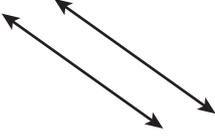
parallel

Remembering

Write these amounts as decimal numbers.

1. 3 tenths 0.3 2. 7 hundredths 0.07 3. 56 hundredths 0.56
 4. $\frac{6}{100}$ 0.06 5. $\frac{42}{100}$ 0.42 6. $\frac{9}{10}$ 0.9

Tell whether each pair of lines is parallel, perpendicular, or neither.

7.  neither
8.  perpendicular
9.  neither
10.  parallel

11. First draw a line segment 4 cm long. Then draw a line segment 3 cm long that is not parallel nor perpendicular to the first line. **Check students' drawings.**

12. **Stretch Your Thinking** Bianca has a certain shape in mind. She says it has all the following names: quadrilateral, parallelogram, and rectangle. Make a drawing that could be Bianca's shape. Explain why it has each of these names.

Drawings will vary. Possible drawing shown.

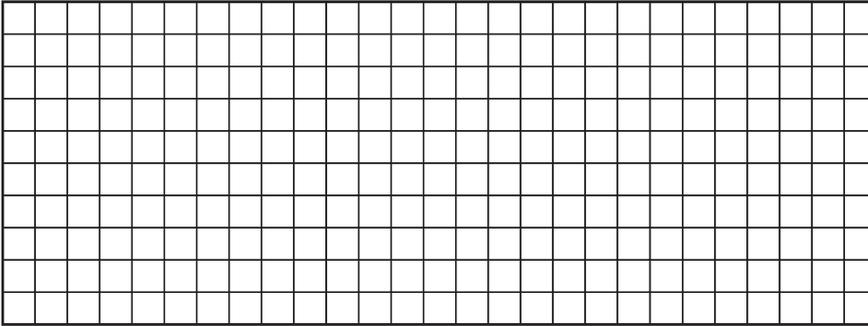


It is called a quadrilateral because it has four sides
 and four angles. It is called a parallelogram, because
 it has two pairs of opposite sides parallel. It is also
 called a rectangle, because it has two pairs of
 opposite sides parallel and four right angles.

Homework

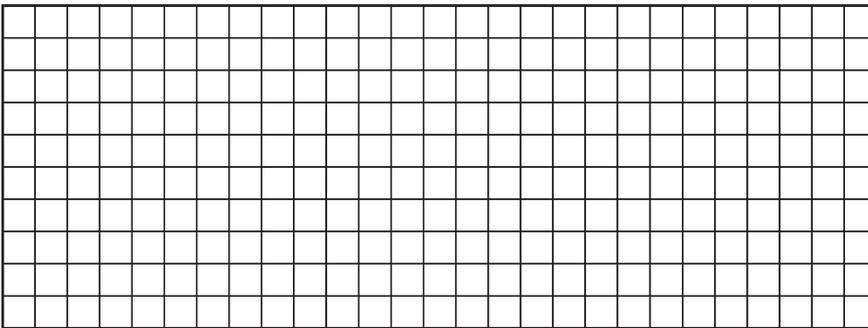
1. Draw a rectangle and a parallelogram. Draw one diagonal on each figure. Name the kinds of triangles you made.

Answers may vary. Check students' drawings.



2. Draw your figures again. Draw the other diagonal and name the kinds of triangles you made this time.

Answers may vary. Check students' drawings.



3. Use geometry words to describe how diagonals of quadrilaterals make triangles.

On each side of the diagonal of a quadrilateral,
 there are two line segments adjacent to the
 diagonal. So there are two triangles that share
 the diagonal as a side.

4. Use geometry words to describe a way to separate triangles into other triangles.

A segment drawn from a vertex perpendicular to
 the opposite side will create two right triangles.
 In isosceles and equilateral triangles, these two
 right triangles will be the same size and shape.

Remembering

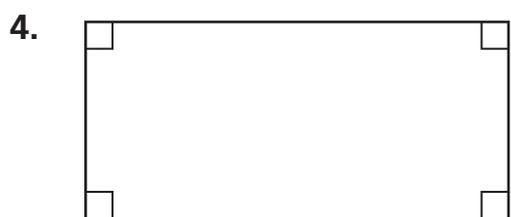
Write the decimal numbers that come next.

1. 0.01 0.02 0.03 0.04 0.05 0.06 0.07
2. 0.3 0.4 0.5 0.6 0.7 0.8 0.9
3. 0.46 0.47 0.48 0.49 0.50 0.51 0.52

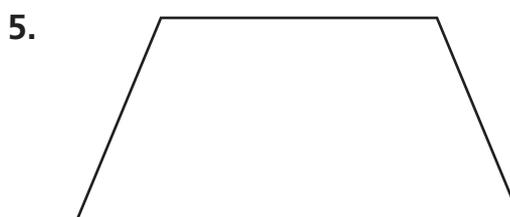
Using the Vocabulary box at the right, write the name of the quadrilateral that best describes each figure. Use each word once. Describe how it is different from other quadrilaterals.

VOCABULARY
trapezoid
rectangle

Answers will vary. Possible answers given.



rectangle; possible answer:
opposite sides parallel;
4 right angles



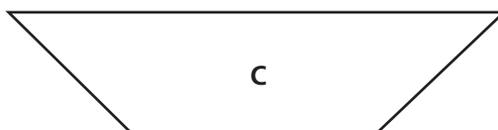
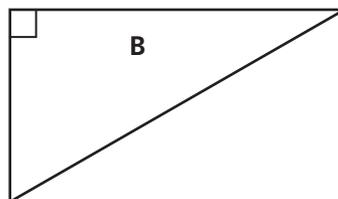
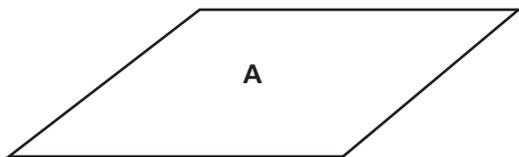
trapezoid; possible answer:
exactly 1 pair of opposite
sides parallel

6. **Stretch Your Thinking** Suppose you drew a diagonal in each of the following quadrilaterals: rectangle, trapezoid, parallelogram. In which figures do triangles with the same size and shape form? In which figures do triangles with a different size and shape form? Explain.

Possible explanation: triangles with the same size
and shape form only in the rectangle and parallelogram,
because both pairs of opposite sides are parallel and
equal in length. The trapezoid, which has only one
pair of opposite sides parallel, would form triangles
with a different size and shape.

Homework

1. What are some different ways you could sort these three figures? Which figures would be in the group for each sorting rule?



Rules and explanations will vary. Samples are given.

Figures with one right angle: B

Figures with parallel sides: A and C

Figures with at least one acute angle: A, B, and C

2. Draw a fourth figure to add to the figures in Exercise 1. Does it match any of the sorting rules you listed for Exercise 1?

Drawings and answers will vary.

Remembering

Write each amount in decimal form.

1. 8 tenths 0.8

2. 62 hundredths 0.62

3. 8 hundredths 0.08

4. $3\frac{4}{10}$ 3.4

5. $5\frac{37}{100}$ 5.37

6. $73\frac{1}{100}$ 73.01

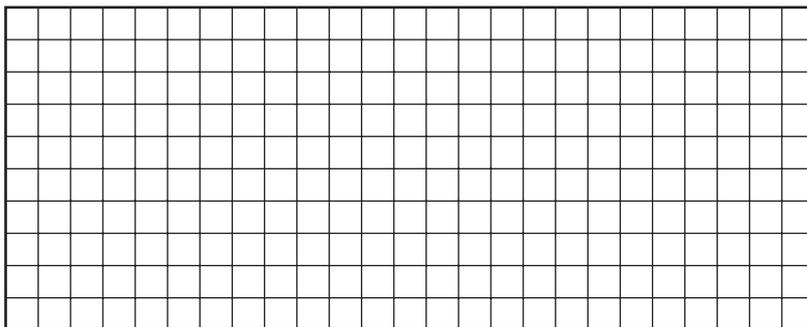
7. 12 and 3 tenths
12.3

8. 9 and 82 hundredths
9.82

9. 45 and 6 hundredths
45.06

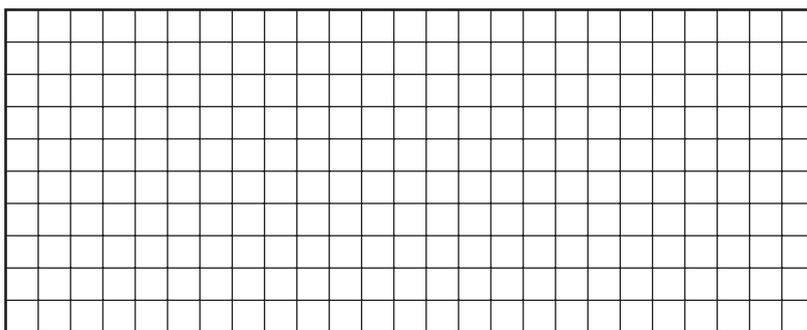
10. Draw a square and a rhombus. Draw one diagonal on each figure. Name the kinds of triangles you made.

Answers may vary. Check students' drawings.



11. Draw your figures again. Draw the other diagonal and name the kinds of triangles you made this time.

Answers may vary. Check students' drawings.



12. **Stretch Your Thinking** Draw and name three polygons that each have at least one right angle. Label each right angle on the polygons.

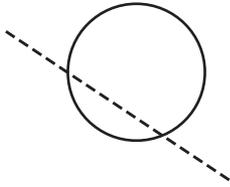
Answers will vary. Check students' drawings.

Possible answers: right triangle, square, rectangle,
trapezoid with 90° angle.

Homework

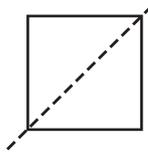
Tell whether the dotted line is a line of symmetry.

1.



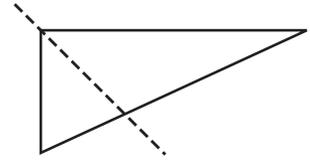
not a line of symmetry

2.



yes, a line of symmetry

3.



not a line of symmetry

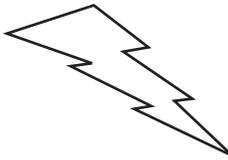
How many lines of symmetry does each figure have?

4.



one

5.



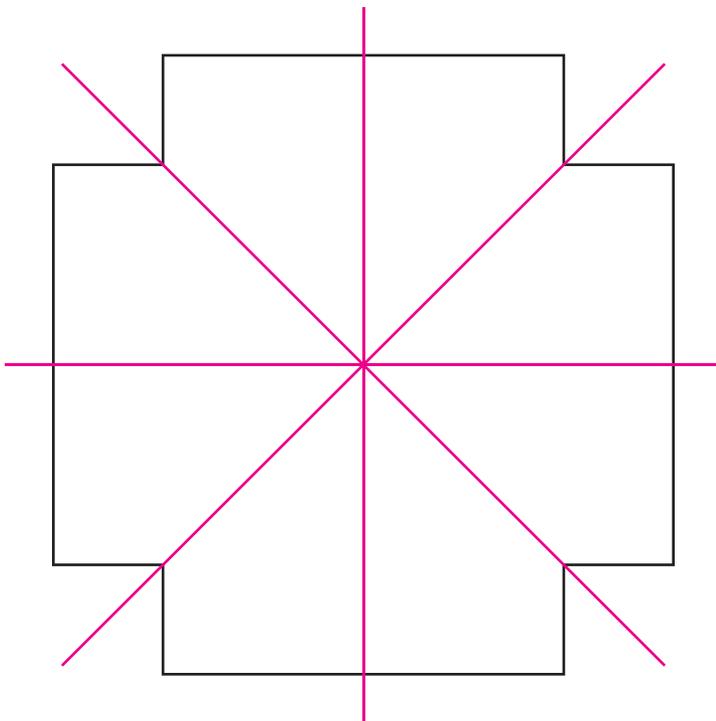
none

6.



six

7. Draw any lines of symmetry for this figure.



Remembering

Add or subtract.

$$\begin{array}{r} 1. \quad 12,493 \\ + \quad 6,551 \\ \hline 19,044 \end{array}$$

$$\begin{array}{r} 2. \quad 536,784 \\ - \quad 69,205 \\ \hline 467,579 \end{array}$$

$$\begin{array}{r} 3. \quad 900,040 \\ - \quad 318,276 \\ \hline 581,764 \end{array}$$

4. What are some different ways you could sort these three figures? Which figures would be in the group for each sorting rule?

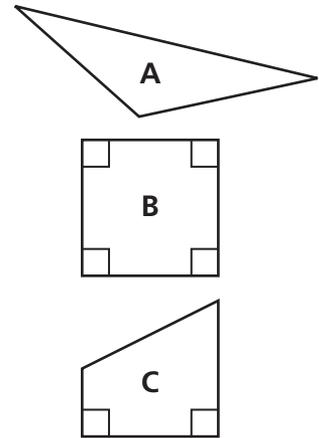
Rules and explanations will vary. Samples are given.

Figures with at least two right angles: B, C

Figures with at least one obtuse angle: A, C

Figures with all sides equal: B

5. Draw a fourth figure to add to the figures in Exercise 4. Does it match any of the sorting rules you listed for Exercise 4? Drawings and answers will vary.



6. **Stretch Your Thinking** Consider only the shape and not the design of the following real life objects: square dinner plate, stop sign, American flag, letter P, letter M, tennis racket. Which of these objects have line symmetry? Which of these objects have more than one line of symmetry? Write the first letter of your first name. Does it have line symmetry?

Line symmetry: dinner plate, stop sign, American

flag, letter M, tennis racquet; more than one

line of symmetry: dinner plate, stop sign,

American flag; Answers to last question will vary.

Homework

Draw a flag design. The design must include a quadrilateral with 2 lines of symmetry. The flag must also have a triangle with a 45° angle. **Check students' drawings.**

1. What type of quadrilateral did you draw? How did you make sure that the quadrilateral has 2 lines of symmetry?

Answers will vary based on figures drawn.

2. What type of triangle did you draw in the flag design? What tool did you use to make sure that the angle you drew measures 45° ?

Answers will vary based on figures drawn; protractor

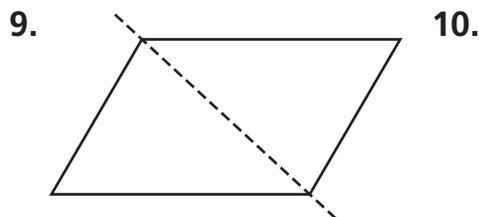
Remembering

Insert $<$ or $>$ to make a true statement.

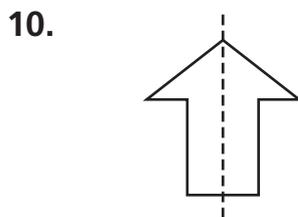
1. $7.24 < 72.4$ 2. $8.07 < 8.7$ 3. $5.32 > 3.52$ 4. $20.8 > 2.08$

5. $12.3 > 3.12$ 6. $2.9 < 29$ 7. $23.15 < 24.1$ 8. $90.2 > 9.02$

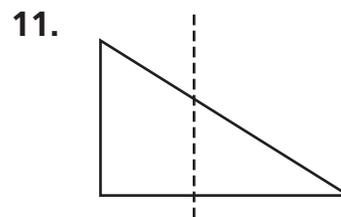
Tell whether the dotted line is a line of symmetry.



not a line of symmetry

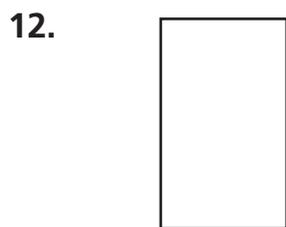


yes, a line of symmetry

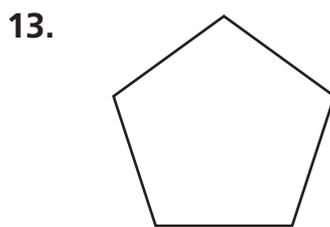


not a line of symmetry

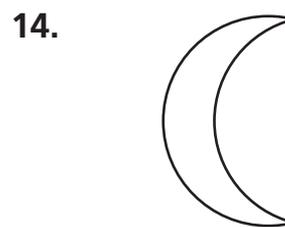
How many lines of symmetry does each figure have?



two



five



one

15. **Stretch Your Thinking** Design a pennant for your school in the shape of an acute isosceles triangle. Within the design, include a quadrilateral with four right angles and at least one set of parallel lines.
Drawings will vary. Check students' drawings.