

PRACTICE Workbook

Grade 4

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CALIFORNIA HSP Math

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Place Value Through Hundred Thousands

Write each number in two other forms

1. $50,000 + 3,000 + 700 + 5$

2. eight hundred thousand, nine hundred thirty-seven

3. 420,068

4. 78,641

Complete.

5. $290,515 =$ two hundred ninety _____, five hundred fifteen = _____ + $90,000 +$ _____ + $10 + 5$

6. _____ + $10,000 + 3,000 + 100 + 80 + 9 = 413,1$ _____ = four hundred thirteen thousand, one _____ eighty-nine

Write the value of the underlined digit in each number.

7. 705,239

8. 417,208

9. 914,325

10. 360,044

Problem Solving and Test Prep

11. In 2005, there were 20,556 Bulldogs registered in the American Kennel Club. What are two ways you can represent the number?

12. In 2005, the Labrador Retriever was the most popular breed in the American Kennel Club with 137,867 registered. Write the number in two other forms.

13. What is the value of the digit 9 in 390,215?

- A 900
B 9,000
C 90,000
D 900,000

14. In February, eighty-five thousand, six hundred thirteen people went to the Westminster Dog Show. What is the number in standard form?

- A 850,630 C 850,613
B 85,630 D 85,613

Model Millions

Solve.

- | | |
|---|---|
| 1. How many hundreds are in 100,000?
_____ | 2. How many thousands are in 10,000?
_____ |
| 3. How many thousands are in 1,000,000? _____ | 4. How many hundreds are in 10,000?
_____ |
| 5. How many hundreds are in 1,000,000? _____ | 6. How many thousands are in 100,000? _____ |

Tell whether each number is large enough to be in the millions or more.

Write *yes* or *no*.

- | | |
|---|---|
| 7. the number of people at a baseball stadium for one game _____ | 8. the distance in miles to the nearest star outside our solar system _____ |
| 9. the number of leaves on the trees in a forest _____ | 10. the distance in feet across a swimming pool _____ |
| 11. the number of cars people own in the United States _____ | 12. the number of trips a bus might make in one day _____ |
| 13. the number of bags of trash a family makes in one month _____ | 14. the distance in miles from one city to another in your state _____ |
| 15. the number of fourth graders in the United States _____ | 16. the number of miles you might travel to reach the Moon _____ |
| 17. the number of gallons of water in the ocean _____ | 18. the number of stars in the solar system _____ |

Choose the number in which the digit 5 has the greater value.

- | | |
|---|--|
| 19. 435,767 or 450,767
_____ | 20. 510,000 or 5,100,000
_____ |
| 21. 125,000,000 or 521,000,000
_____ | 22. 435,003 or 4,300,500
_____ |
| 23. 1,511,672 or 115,672
_____ | 24. 40,005,400 or 350,400,300
_____ |
| 25. 135,322,000 or 9,450,322
_____ | 26. 35,000,000 or 3,500,000
_____ |

Place Value Through Millions

Write each number in two other forms.

1. ninety-five million, three thousand, sixteen

2. four hundred eighty-five million, fifty-two thousand, one hundred eight

3. 507,340,015

4. $20,000,000 + 500,000 + 60,000 + 1,000 + 300 + 40$

Use the number **78,024,593**.

5. Write the name of the period that has the digits 24. _____
6. Write the digit in the ten millions place. _____
7. Write the value of the digit 8. _____
8. Write the name of the period that has the digit 5. _____

Find the sum. Then write the answer in standard form.

9. 7 thousands 3 hundreds 4 ones + 8 ten thousands 1 thousand 5 hundreds

Problem Solving and Test Prep

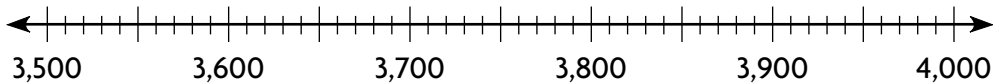
10. The average distance from Earth to the Sun is 92,955,807 miles. What is the value of the digit 2?

11. The average distance from Earth to the Sun is one hundred forty-nine million, six hundred thousand kilometers. Write the number in standard form.

12. Which of these is the number $4,000,000 + 300,000 + 80,000 + 500 + 10$?
A 4,385,100 C 4,380,510
B 40,308,510 D 4,385,010
13. Which of these is the number forty-three million, nine hundred two thousand, eleven?
A 4,392,011 C 43,902,011
B 43,920,011 D 43,902,110

Compare Whole Numbers

Use the number line to compare. Write the lesser number.



1. 3,660 or 3,590

2. 3,707 or 3,777

3. 3,950 or 3,905

Compare. Write $<$, $>$, or $=$ for each \bigcirc

4. 5,155 \bigcirc 5,751

5. 6,810 \bigcirc 6,279

6. 45,166 \bigcirc 39,867

7. 72,942 \bigcirc 74,288

8. 891,023 \bigcirc 806,321

9. 673,219 \bigcirc 73,551

10. 3,467,284 \bigcirc 481,105

11. 613,500 \bigcirc 1,611,311

12. 4,000,111 \bigcirc 41,011

ALGEBRA Find all of the digits that can replace each \blacksquare .

13. $781 \neq 78\blacksquare$

14. $2,4\blacksquare5 \neq 2,465$

15. $\blacksquare,119 \neq 9,119$

Problem Solving and Test Prep

USE DATA For 16–17 use the table.

16. Which mountain is taller: Logan or McKinley?
- _____

17. Which mountain is taller than 29,000 feet?
- _____

Tallest Mountains	
Mountain	Height (in feet)
Everest	29,028
McKinley	20,320
Logan	19,551

18. Which number from the list below is the greatest?

- A 34,544
 B 304,544
 C 43,450
 D 345,144

19. Which number is less than \$1,322?

- A \$1,521 C \$1,319
 B \$1,429 D \$1,324

Order Whole Numbers

Write the numbers in order from greatest to least.

1. 74,421; 57,034; 58,925

2. 2,917,033; 2,891,022; 2,805,567

3. 409,351; 419,531; 417,011

4. 25,327,077; 25,998; 2,532,707

5. 621,456; 621,045,066; 6,021,456

6. 309,423; 305,125; 309,761

7. 4,358,190; 4,349,778; 897,455

8. 5,090,115; 50,009,115; 509,155

ALGEBRA Write all of the digits that can replace each ■.

9. $389 < 3\blacksquare7 < 399$

10. $5,601 < 5,\blacksquare01 < 5,901$

11. $39,560 > 3\blacksquare,570 > 34,580$

12. $178,345 > 1\blacksquare8,345 > 148,345$

Problem Solving and Test Prep

USE DATA For 13–14, use the table.

13. Which lake has the smallest area?

14. Write the names of the lakes in order from least area to the greatest area.

Largest Lakes (area in square miles)	
Victoria	26,828
Huron	23,000
Superior	31,700
Caspian Sea	19,551

15. Which shows the numbers in order from greatest to least?

- A 36,471; 36,490; 36,470
- B 969,482; 979,485; 969,500
- C 121,119; 121,101; 121,111
- D 129,876; 129,611; 129,602

16. Which shows the numbers in order from greatest to least?

- A 92,944; 92,299; 92,449
- B 159,872; 159,728; 159,287
- C 731,422; 731,242; 731,244
- D 487,096; 487,609; 487,960

Problem Solving Workshop Strategy: Use Logical Reasoning

Problem Solving Strategy Practice

Use logical reasoning to solve.

1. The stadium store sells team shirts on Friday, Saturday, and Sunday. The number of shirts sold for three days were 473, 618, and 556. The least number of shirts were sold on a Friday. More than 600 shirts were sold on Saturday. How many shirts were sold each day?

2. Anton, Rachel, and Lamont like different baseball teams. The teams are the Yankees, the Red Sox, and the White Sox. Anton's favorite team does not have a color in its name. Lamont does not like the White Sox. Which team does each person like best?

Mixed Strategy Practice

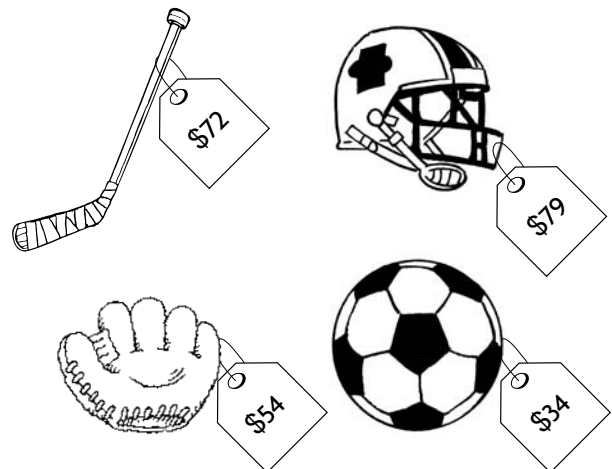
3. Beth, Paulo, Lee, Maya, and Rob are standing in line to get into the movies. Beth is in front of Maya. Maya is not last in line. Rob is first. Lee is after Maya. Paulo is not last. In what order are they standing in line?

4. Mr. Katz bought an autographed baseball for \$755. He used \$50-bills, \$20-bills, and \$5-bills to make exactly \$755. The total number of bills he used is less than 20. What combination of bills would Mr. Katz have used?

USE DATA For 5–6, use the information shown in the art.

5. Claire buys two items. She spends less than \$100 for both of them. Which two items does she buy?

6. Alex wants to save money to buy the hockey stick. After 2 weeks he has \$40. After 3 weeks, he has \$50. After 4 weeks, he has \$60. How long do you think it will take Alex to save \$80?



Algebra: Relate Addition and Subtraction

Write a related fact. Use it to complete the number sentence.

1. $\blacksquare - 7 = 8$

2. $4 + \blacksquare = 13$

3. $\blacksquare + 9 = 14$

4. $8 + \blacksquare = 11$

5. $\blacksquare - 4 = 8$

6. $17 - \blacksquare = 9$

7. $\blacksquare - 5 = 5$

8. $13 - \blacksquare = 5$

9. $\blacksquare + 7 = 16$

Write the fact family for each set of numbers.

10. 6, 8, 14

11. 7, 5, 12

12. 9, 6, 15

Problem Solving and Test Prep

13. Byron can do 12 pull-ups. Malik can do 7 pull-ups. How many more pull-ups can Byron do than Malik? What related facts can you use to solve this problem?

14. Byron can do 12 pull-ups. Malik can do 7 pull-ups. Selma does more pull-ups than Malik but fewer than Byron. What are the four possible numbers of pull-ups that Selma could have done?

15. Which of the following sets of numbers cannot be used to make a fact family?

- A 25,10,15 C 15,9,6
 B 2,2,4 D 3,2,14

16. Which of the following sets of numbers can be used to make a fact family?

- A 5,6,11 C 7,6,12
 B 11,12,13 D 19,9,11

Round Whole Numbers Through Millions

Round each number to the place value of the underlined digit.

1. $\underline{7}$,803

2. $\underline{4}$,097

3. $\underline{23}$,672

4. 627, $\underline{4}$ 32

5. 34, $\underline{8}$ 09,516

6. 671, $\underline{5}$ 23,890

Round each number to the nearest ten, hundred, and hundred thousand.

7. 6,086,341

8. 79,014,878

9. 821,460,934

Problem Solving and Test Prep

USE DATA For 10–11, use the table.

10. Which state has a population that rounds to 5,700,000?

11. What is the population of Maryland, rounded to the nearest thousand?

12. Which number rounds to 45,000?

A 44,399

C 44,890

B 44,098

D 45,987

**Population of States in 2000
Census**

State	Population
Maryland	5,296,486
Tennessee	5,689,283
Wisconsin	5,363,675

13. To find the rounded number that is closest to 1,234,567, to what place do you round?

Mental Math: Addition and Subtraction Patterns

Use mental math to complete the pattern.

1. _____ + 8 = 17

90 + _____ = 170

900 + 800 = _____

9,000 + 8,000 = _____

2. _____ - 4 = 8

120 - 40 = _____

1,200 - _____ = 800

12,000 - 4,000 = _____

3. _____ - 3 = 7

100 - _____ = 70

_____ - 300 = 700

10,000 - 3,000 = _____

4. 7 + 9 = _____

70 + _____ = 160

700 + 900 = _____

_____ + 9,000 = 16,000

5. 8 + _____ = 11

80 + _____ = 110

_____ + 300 = 1,100

_____ + 3,000 = 11,000

6. _____ - 5 = 9

140 - 50 = _____

1,400 - _____ = 900

_____ - 5,000 = 9,000

Use mental math patterns to find the sum or difference.

7. 600 + 700

8. 180 - 90

9. 6,000 + 9,000

10. 13,000 - 5,000

11. 12,000 + 10,000

12. 700 - 600

13. 130,000 + 70,000

14. 15,000 - 8,000

Problem Solving and Test Prep

15. In 2001, there were 400 rabbits at the zoo. In 2002, there were 1,200 rabbits at the zoo. How many more rabbits were at the zoo in 2002 than 2001?

16. There are 600 pens in each box. How many pens are there in 2 boxes?

17. What number completes the sentence

$\blacksquare + 3,000 = 12,000$

- A 90,000
B 9,000
C 8,000
D 900

18. There were 14,000 newspapers printed on Tuesday morning. By Tuesday afternoon, only 8,000 were sold. How many newspapers have not been sold yet?

Mental Math: Estimate Sums and Differences

Use rounding to estimate.

$$\begin{array}{r} 1. \quad 6,356 \\ +1,675 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 8,267 \\ -2,761 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 38,707 \\ +28,392 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 75,428 \\ -19,577 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 187 \\ +519 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 6,489 \\ -1,807 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 24,655 \\ +51,683 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 61,075 \\ -29,732 \\ \hline \end{array}$$

Use compatible numbers to estimate.

$$9. \quad 5,432 - 652$$

$$10. \quad 45,221 + 6,167$$

$$11. \quad 392 + 47 + 89$$

Adjust the estimate to make it closer to the exact sum or difference.

$$12. \quad 6,285 + 2,167$$

$$13. \quad 42,819 - 11,786$$

$$14. \quad 17,835 + 45,199$$

Estimate: 8,000

Estimate: 30,000

Estimate: 65,000

Problem Solving and Test Prep

15. In 2004, there were 398,521 visitors to the Rodeo. In 2006, there were 117,578 more visitors than in 2004. Estimate the total number of visitors to the Rodeo in 2004 and 2006.

16. Sara estimates the difference between 54,625 and 32,484. Her answer is 20,000. Give a closer estimate.

17. A plane flies 14,854 miles in one week. The next week, it flies 8,267 miles. Estimate the distance the plane flies in two weeks.

A 22,000 miles C 24,000 miles
B 23,000 miles D 25,000 miles

18. A train travels 7,824 miles the first month and travels 3,776 miles the next month. About how many more miles does the train travel in the first month than in the second month?

Mental Math Strategies

Add or subtract mentally. Tell the strategy you used.

1. $73 + 15$

2. $87 - 48$

3. $57 + 91$

4. $152 - 68$

5. $542 + 148$

6. $515 - 151$

7. $799 - 231$

8. $387 + 73$

9. $945 - 425$

10. $452 + 339$

11. $396 + 265$

12. $594 - 496$

Problem Solving and Test Prep

13. Vicky has 32 baseball cards and 29 soccer cards. Use mental math to find how many cards Vicky has in all.

14. Kareem bowls 78 the first game and 52 the second game. Use mental math to find the difference of Kareem's scores.

15. Jason sells 27 tickets on Monday and 34 on Tuesday. He adds 3 to 27 to find the sum mentally. How should he adjust the sum to find the total?

- A Add 3 to the sum
- B Add 4 to the sum
- C Subtract 3 from the sum
- D Subtract 4 from the sum

16. Haley buys a baseball bat and glove that cost \$25 and \$42. She subtracts \$2 from \$42 to find the total mentally. How should Haley adjust the sum to find the total?

- A Add \$2 to the sum
- B Subtract \$2 from the sum
- C Add \$5 to the sum
- D Subtract \$5 from the sum

Problem Solving Workshop Skill: Estimate or Exact Answer?

Problem Solving Skill Practice

Explain whether to estimate or find an exact answer. Then solve the problem.

1. A plane has 5 seating sections that can hold a total of 1,175 passengers. Today, the sections held 187, 210, 194, 115, and 208 passengers. Was the plane filled to capacity?

2. A small plane carries 130 gallons of fuel. It needs 120 gallons to fly a 45-mile trip. Does the pilot have enough fuel to make a 45-mile trip?

3. A movie theater has a total of 415 seats. There are 187 adults and 213 children seated in the theater. How many empty seats are there in the theater?

4. Bob drives 27 miles round trip each day for three days. Has Bob traveled more or less than 250 miles?

Mixed Applications

5. The movie theater sells 213 tickets on Monday, 187 tickets on Tuesday, and 98 tickets on Wednesday. Are there more, or less than 600 tickets sold for all three days?

6. The movie theater sells 209 tickets for "Canyon Trail" and 94 tickets for "A Light in the Sky". How many more tickets are sold at the theater for "Canyon Trail" than "A Light in the Sky"?

7. Sara sells 87 tickets for a school benefit. Josh sells 43 tickets. Marc sells 28 tickets. How many more tickets does Sara sell than Marc and Josh together?

8. A stamp album contains 126 stamps. Another album contains 67 stamps. Each album can hold up to 150 stamps. How many more stamps can both albums hold altogether?

Add and Subtract Through 5-Digit Numbers

Estimate. Then find the sum or difference.

$$\begin{array}{r} 1. \quad 414 \\ + 727 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 784 \\ - 149 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 5,305 \\ + 848 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 7,322 \\ - 616 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 2,673 \\ + 4,548 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 3,357 \\ + 1,219 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 8,452 \\ - 2,621 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 9,344 \\ - 5,667 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 4,955 \\ + 978 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 9,999 \\ - 901 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 7,593 \\ + 1,475 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 8,891 \\ - 1,490 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 13,069 \\ + 1,956 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 16,560 \\ - 15,699 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 71,948 \\ - 51,052 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 37,326 \\ + 42,673 \\ \hline \end{array}$$

ALGEBRA Find the missing digit.

$$\begin{array}{r} 17. \quad 9 \blacksquare 8 \\ + 247 \\ \hline 1,175 \end{array}$$

$$\begin{array}{r} 18. \quad 77,895 \\ - 21,23 \blacksquare \\ \hline 56,661 \end{array}$$

$$\begin{array}{r} 19. \quad \blacksquare,689 \\ - 726 \\ \hline 3,963 \end{array}$$

$$\begin{array}{r} 20. \quad 61,357 \\ + 29,7 \blacksquare 6 \\ \hline 91,113 \end{array}$$

Problem Solving and Test Prep

21. Jan drove 324 miles on Monday, then 483 miles on Tuesday. How many miles did Jan drive in all?
-
22. A baseball team scores 759 runs in a season. The next season the team scores 823 runs. How many runs are scored in all?
-
23. An airplane will fly a total of 4,080 miles this trip. The plane has flown 1,576 miles so far. How many more miles will the plane need to travel?
- A 2,504 miles C 2,594 miles
B 2,514 miles D 5,656 miles
24. There are 35,873 soccer fans at the first game. There are 23,985 fans at the second game. How many more fans are at the first game? Explain.
-

Subtract Across Zeros

Estimate. Then find the difference.

1.
$$\begin{array}{r} 3,078 \\ -678 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 760 \\ -194 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 6,004 \\ -452 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 7,030 \\ -4,265 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 8,056 \\ -2,109 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 9,000 \\ -2,708 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 4,890 \\ -1,405 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 6,902 \\ -3,440 \\ \hline \end{array}$$

9. $670 - 413$

10. $4,700 - 876$

11. $5,030 - 2,125$

Choose two numbers from the box to make each difference.

4,200	4,000	3,020
	3,402	424

12. $3,776$

13. $1,180$

14. $2,596$

15. 598

Problem Solving and Test Prep

16. One of the largest volcanic eruptions occurred in 1883 on the Indonesian Island of Krakatoa. How many years before 2006 had this eruption occurred?

17. Jessie estimates the distance from New York to San Diego to be 3,000 miles. The actual distance is 2,755 miles. What is the difference between Jessie's estimate and the actual distance?

18. Helena starts a trip with 4,345 miles on her car. She finishes the trip with 8,050 miles on her car. How many miles did Helena travel on her trip?

19. A mountain peak reaches 3,400 feet in elevation. A mountain climber has climbed 1,987 feet so far. How many more feet does the climber need to go before reaching the top of the peak?

A 12,395

C 3,805

B 4,705

D 3,705

Add and Subtract Greater Numbers

Find the sum or difference. Write the method you used.

$$\begin{array}{r} 1. \quad 56,684 \\ + 37,925 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 45,002 \\ - 8,000 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 369,021 \\ + 488,627 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 90,451 \\ - 89,693 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 4,500 \\ + 1,001 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 56,634 \\ + 9,378 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 359,000 \\ - 109,000 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 411,800 \\ - 288,236 \\ \hline \end{array}$$

$$9. \quad 30,550 - 10,220$$

$$10. \quad 621,100 + 123,300$$

$$11. \quad 41,067 - 13,968$$

ALGEBRA Find the missing digit.

$$\begin{array}{r} 12. \quad 45, \blacksquare 22 \\ + 12,534 \\ \hline 57,856 \end{array}$$

$$\begin{array}{r} 13. \quad 3 \blacksquare 2,400 \\ - 141,200 \\ \hline 181,200 \end{array}$$

$$\begin{array}{r} 14. \quad 17,648 \\ + \blacksquare 4,537 \\ \hline 72,185 \end{array}$$

$$\begin{array}{r} 15. \quad 630,489 \\ - 241, \blacksquare 25 \\ \hline 388,764 \end{array}$$

Problem Solving and Test Prep

16. **Fast Fact** Jupiter's radius at its equator is 71,492 km. Earth's radius at its equator is 6,378 km. How many more km is the radius of Jupiter than the radius of Earth?

17. Miguel scores 208,700 points in a video game. Sera scores 290,550 points. How many more points does Sera score than Miguel scores?

18. A plane travels 89,102 miles in a month. The next month it travels 106,448 miles. How many miles does the plane travel in these two months?
- A** 17,346 miles **C** 195,550 miles
B 185,540 miles **D** 295,550 miles

19. In one season, 187,197 fans attend a minor league's baseball games. The next season, 216,044 fans attend. How many fans attend the games in all, these two seasons?

Problem Solving Workshop Skill: Too Much/Too Little Information

Problem Solving Skill Practice

Tell if you have *too much* or *too little* information. Identify the extra or missing information. Then solve the problem, if possible.

- Juan takes a road trip for three days. On Day 1, he drives 278 miles. On day 2, he drives 367 miles. On day 3, he drives 316 miles. Each day he takes one hour out of driving time to eat lunch. How many miles in all does Juan drive?

- There are a total of 720 tickets available for a school concert. Dom sells 93 tickets and Oscar sells 123 tickets. How many tickets do Dom and Oscar sell in all?

- Ms. Jackson buys two packages of grass seed for \$14.95 each and a new hose for \$16.79. How much does Ms. Jackson spend on the grass seed?

- Betty's class sells a total of 516 red and blue sports caps. The caps cost \$4.79 each. How many more red caps were sold than blue caps?

Mixed Applications

USE DATA For 5–6, use the table.

- Jeff wants to drive round trip from San Francisco to Los Angeles. How many miles will he travel in all?

- Amelia drives 200 miles each day. Can she make the trip to Seattle from San Francisco in 4 days?

- A city park has 2,574 visitors in one day. The zoo has 3,078 visitors on the same day. Write a number sentence to show the total number of visitors to both the city park and the zoo.

- Hannah bowls 3 games. Her total score is 188. If she bowled a 73 the first game and a 47 the second game, what was Hannah's score in the last game?

One Way Distances from San Francisco	
City	Number of Miles
to Boise, ID	655
to Los Angeles, CA	390
to Salt Lake, UT	750
to Seattle, WA	825

Addition Properties

Find the missing number. Tell which property you used.

1. $\blacksquare + 0 = 0 + 23$ 2. $15 + 5 = \blacksquare + 15$ 3. $12 + (2 + 7) = (\blacksquare + 2) + 7$

4. $\blacksquare + 7 = 7 + 36$ 5. $\blacksquare + 45 = 45 + 0$ 6. $(22 + \blacksquare) + 11 = 22 + (44 + 11)$

Change the order or group the addends so that you can add mentally.

Find the sum. Tell which property you used.

7. $120 + 37 + 280$

8. $25 + 25 + 30$

9. $60 + 82 + 40$

10. $28 + 21 + 32 + 19$

11. $66 + 27 + 44$

12. $133 + 25 + 247$

13. $45 + 22 + 25$

14. $61 + 57 + 39 + 23$

Problem Solving and Test Prep

USE DATA For 15–16, use the table.

15. Use the Associative Property to find the total number in Sam's collection.

16. Sam buys another 15 Shooter stripes. How many marbles are in Sam's collection now?

17. Which shows the Identity Property of Addition?

- A $16 + 0 = 16$
B $12 + 1 = 13$
C $29 + 29 = 28$
D $1 + 1 = 2$

18. Which shows the Commutative Property of Addition?

- A $11 + 9 = 10 + 10$
B $0 + 7 = 0$
C $20 + 20 = 40$
D $5 + 7 = 7 + 5$

Sam's Marble Collection	
Type	Number
Blue Chinese Checkers	32
Cat's Eyes	81
Speckled Spots	18
Shooter Stripes	59

Write and Evaluate Expressions

Tell what you do first. Then find the value of each expression.

1. $12 - (4 + 3)$

2. $5 + (15 - 3)$

3. $(17 - 3) + 5$

4. $5 + (18 - 2)$

5. $(18 + 22) - 15$

6. $(31 - 16) - 8$

7. $9 + (25 - 9)$

8. $(31 + 5) - 21$

Place the parentheses so the expression has a value of 7.

9. $12 - 10 + 5$

10. $5 + 9 - 7$

11. $16 - 10 + 1$

12. $40 - 36 + 3$

13. $10 + 6 - 9$

14. $4 + 4 - 1$

15. $12 - 6 + 1$

16. $13 - 9 + 3$

Problem Solving and Test Prep

17. Will buys 17 toy racing cars. He gives 7 to Paul and 6 to Bill. How many cars does Will have left? Write the expression and solve.

18. There are 12 fish in the class tank. Asa and Troy each took 3. Mrs. Hampton then buys 9 more fish to put in the tank. How many fish are in the tank now?

19. What is the value of the following expression?

$(17 - 12) + 4$

A 1

B 2

C 9

D 11

20. What is the value of the following expression?

$4 + (15 - 9)$

A 10

B 5

C 2

D 6

Expressions with Variables

Choose a variable. Write an expression.
Tell what the variable represents.

- Sara had some cards. She gave away 5 of them.
- Raymondo had 9 stickers and bought some more.

- Tan added \$15 to his bank account.
- Gee gave away some of her 20 pins.

Find the value of each expression if $a = 3$ and $b = 8$.

- $a + 7$
- $17 - b$
- $(b - 3) + 18$
- $(a + 9) - 5$

- $a + (b - 1)$
- $b + (a + 15)$
- $25 - (8 - a)$
- $(b - 6) + 14$

Problem Solving and Test Prep

USE DATA For 13–14, use the table.

- Write an expression that tells how many dolls Lisa will have in all if she gets some miniature dolls.

- Lisa gave some of her fashion dolls to a charity. Write an expression that tells how many dolls total Lisa has left.

Lisa's Doll Collection	
Type Doll	Number
Baby	15
Fashion	10
Foreign	8
Rag	17

- What is the value of the expression below if $x = 9$?
- What is the value of the expression below if $p = 7$?

$$(6 + x) - 4$$

$$(p - 3) + 4$$

A 14 **C** 12

A 0 **C** 10

B 13 **D** 11

B 9 **D** 8

Addition and Subtraction Equations

Choose a variable for the unknown. Write an equation for each situation. Tell what the variable represents.

1. Rickie has 15 model cars. Some are red and 8 are blue.

2. Wendy had \$12. Her mother gave her some more so she now has \$17.

Solve the equation.

3. $19 - 4 = n$

$n =$ _____

4. $6 + \blacksquare = 19$

$\blacksquare =$ _____

5. $r - 12 = 21$

$r =$ _____

6. $t + 14 = 31$

$t =$ _____

Write words to match the equation.

7. $b + 5 = 12$

8. $a - 9 = 2$

9. $16 - w = 4$

10. $y + 7 = 29$

Problem Solving and Test prep

11. 8 hearing dogs graduated in February, 5 in May, and 9 in November. Write and solve an equation that tells how many hearing dogs graduated in all.

12. 13 dogs graduated in May. There were 5 hearing dogs, 4 service dogs and some tracking dogs. Write an equation that shows the total number of dogs that graduated in May.

13. Jed watched 10 minutes of previews and a 50-minute dog movie. Which equation tells the total time Jed was in the theater.

A $10 + 50 = t$ C $t - 10 = 50$

B $50 - t = 10$ D $t + 10 = 50$

14. Haley's favorite picture book is 27 pages. 11 of the pages have pictures of dogs. The rest have pictures of birds. Which equation can be used to find how many pages have birds?

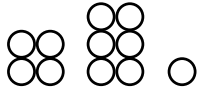
A $27 + 11 = b$ C $b - 11 = 27$

B $11 + 27 = b$ D $b + 11 = 27$

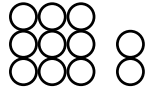
Add Equals to Equals

Tell whether the values on both sides of the equation are equal.

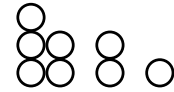
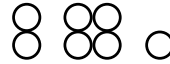
Write *yes* or *no*.



1. $4 + 6 + 1 \stackrel{?}{=} 9 + 2$



2. $2 + 4 + 1 \stackrel{?}{=} 5 + 2 + 1$



Complete to make the equation true.

3. $6 + 2 + \blacksquare = 12 + 4$

4. $14 - 5 - 2 = \blacksquare + 4$

5. $8 + 5 - 2 = \blacksquare$

6. $25 + \blacksquare = 7 + 25$

7. $36 + \blacksquare - 2 = 34 + 7$

8. $67 - 8 = \blacksquare + 47$

9. $13 + 5 + 9 = 45 - \blacksquare$

10. $42 - 24 - \blacksquare = 12 + 4 - 9$

11. $10 + 5 + 15 = 46 - \blacksquare$

Add to or subtract from both sides of the equation.

Find the new value.

12. Add 17.

$$23 - 5 = 18$$

13. Subtract 11.

$$32 + 12 = 44$$

14. Add 9.

$$16 - 12 = 4$$

Problem Solving and Test Prep

15. Mary has 7 roses. Sae has 9 roses. If each girl adds 3 roses to her bunch, how many more roses does Mary need to add to have the same number of roses as Sae?

16. Mike has 15 packets of seeds and Jamal has 8. Mike gives 3 packets to Jamal. How many packets of seeds must Jamal buy if he wants to have as many packets as Mike?

17. Deb has 3 goldfish. Dan has 2 goldfish and one beta fish. They each get one zebra fish. Write an equation that shows the number of fish each person has. Is the equation true? Explain.

18. The letters x and y stand for numbers. If $x = y + 1$, which statement is true?

A $x + 4 = y + 4$

B $x - 1 = y$

C $x - 1 = y + 2$

D $x - 1 = y + 3$

Problem Solving Workshop Strategy: Work Backward

Problem Solving Strategy Practice

Work backward to solve.

- Leon arrived at the preserve at 11:00 A.M. He began the morning by taking 45 minutes to feed his pets at home and driving 2 hours to get to the preserve. What time did Leon begin?

- Kit read a 25-page book about lions. Seven pages were about hunts, 15 pages about habitat, and the rest were about prides. How many pages were about prides?

- Twelve lions in the pride did not go on a hunt. When more lions returned from the hunt, there were 21. How many lions were on the hunt?

- Polly ate lunch and then took 15 minutes to walk to Cher's house. They rode bikes for 35 minutes and then studied for 20 minutes. If they finished at 2:30, when did Polly finish lunch?

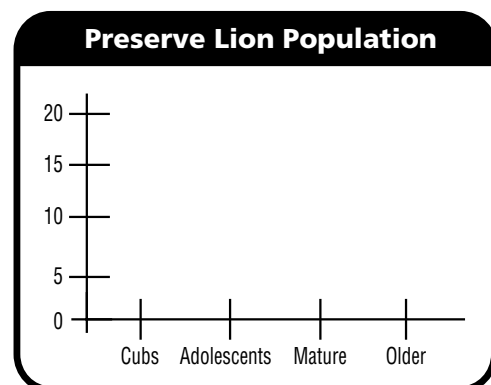
Mixed Strategy Practice

- Five prides were sent from the zoo to a preserve. Two prides were returned. Now there are 17 prides at the zoo. How many prides were at the zoo before the 5 were sent away?

 - Red, blue, green, and brown teams lined up for their assignments. The brown team was ahead of the red team. The blue team was not last. The green team was first. Which team was last?

7. **USE DATA** Use the information in the table below to draw a bar graph.

Preserve Lion Population	
Age	Number
Cubs	18
Adolescents	14
Mature	2
Older	7



Patterns: Find a Rule

Find a rule. Write your rule as an equation. Use the equation to extend your pattern.

1.

Input	<i>f</i>	10	15	20	25	30
Output	<i>g</i>	5	10	15	■	■

2.

Input	<i>c</i>	88	86	84	■	■
Output	<i>d</i>	66	64	62	60	58

3.

Input	<i>s</i>	■	■	9	12	15
Output	<i>t</i>	70	66	62	65	68

4.

Input	<i>x</i>	15	14	13	12	11
Output	<i>y</i>	■	■	28	27	26

Use the rule and the equation to make an input/output table.

5. Add 7 to *m*.

$$m + 7 = n$$

Input	<i>m</i>	■	■	■	■
Output	<i>n</i>	■	■	■	■

6. Subtract 14 from *a*.

$$a - 14 = b$$

Input	<i>a</i>	■	■	■	■
Output	<i>b</i>	■	■	■	■

Problem Solving and Test Prep

USE DATA For 7–8, use the input/output table.

7. A figure is made of a row of squares. One square has a perimeter of 4. Two squares has a perimeter of 6, and so on. Finish the input-output table to show the pattern.

Input	<i>s</i>	1	2	3	4	5
Output	<i>p</i>	4	6	■	■	■

8. What will be the perimeter of 10 squares in a row?

9. Which equation describes the data in the table?

Input	<i>c</i>	0	2	3	4
Output	<i>d</i>	13	15	16	17

- A $d + 13 = c$
- B $c + 13 = d$
- C $c - 13 = d$
- D $d - 13 = c$

10. What is the rule for the table?

Input	<i>g</i>	1	3	5	7
Output	<i>h</i>	5	7	9	11

- A add 5 to *g*
- B subtract 5 from *g*
- C add 4 to *g*
- D subtract 4 from *g*

ALGEBRA Relate Operations

Write the related multiplication or division sentence.

Draw a picture that shows the sentence.

1. $20 \rightarrow 16 \rightarrow 12 \rightarrow 8 \rightarrow 4$ 2. $5 + 5 + 5 = 15$

$$\begin{array}{r} -4 \\ 16 \\ \hline \end{array} \quad \begin{array}{r} -4 \\ 12 \\ \hline \end{array} \quad \begin{array}{r} -4 \\ 8 \\ \hline \end{array} \quad \begin{array}{r} -4 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} -4 \\ 0 \\ \hline \end{array}$$

3. $6 \rightarrow 4 \rightarrow 2$

$$\begin{array}{r} -2 \\ 4 \\ \hline \end{array} \quad \begin{array}{r} -2 \\ 2 \\ \hline \end{array} \quad \begin{array}{r} -2 \\ 0 \\ \hline \end{array}$$

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For 4–6, tell whether the number sentence is *true* or *false*. If false, explain how you know.

4. $5 + 5 + 5 + 5 \stackrel{?}{=} 4 \times 5$ 5. $3 \times 4 \stackrel{?}{=} 4 + 4 + 4 + 4$ 6. $2 \times 7 \stackrel{?}{=} 7 + 7 + 7$

Problem Solving and Test Prep

7. A class of 21 students will go on 3 different rides at the fair. The same number of students will go on each ride. How many students will go on each ride?
8. Jake plays 7 different games at the fair. He plays each game 2 times. How many games does Jake play in all?

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9. Which of these is another way to write $36 - 9 - 9 - 9 - 9 = 0$?
- A $4 \times 9 = 36$ C $9 \times 4 = 36$
 B $36 \div 4 = 9$ D $36 \div 9 = 4$
10. Which of these is another way to write $8 + 8 + 8 + 8 + 8 = 40$?
- A $5 \times 8 = 40$ C $40 \div 8 = 5$
 B $8 \times 5 = 40$ D $40 \div 5 = 8$

Algebra: Relate Multiplication and Division

Write the fact family for the set of numbers.

1. 4, 2, 8

2. 7, 2, 14

3. 8, 9, 72

4. 6, 1, 6

Find the value of the variable. Then write a related sentence.

5. $4 \times 7 = c$

$c = \underline{\quad}$

6. $81 \div m = 9$

$m = \underline{\quad}$

7. $16 \div j = 4$

$j = \underline{\quad}$

8. $8 \times n = 16$

$n = \underline{\quad}$

9. $64 \div 8 = r$

$r = \underline{\quad}$

10. $7 \times 8 = w$

$w = \underline{\quad}$

11. $9 \times 5 = p$

$p = \underline{\quad}$

12. $10 \times 3 = a$

$a = \underline{\quad}$

Problem Solving and Test Prep

13. Laura colors every picture in each of her 5 coloring books. There are 9 pictures in each book. How many pictures does Laura color in all?

14. Carlos has 63 crayons. He puts them into 7 equal groups for his classmates to use. How many crayons are in each group?

15. Which fact belongs to the same family as $6 \times 7 = 42$?

- A $6 + 7 = 13$ C $42 - 6 = 36$
 B $42 \div 7 = 6$ D $42 + 7 = 49$

16. Which fact belongs to the same family as $36 \div 9 = 4$?

- A $4 \times 9 = 36$ C $36 + 9 = 45$
 B $36 - 4 = 32$ D $9 + 4 = 13$

Multiply and Divide Facts Through 5

Find the product or quotient.

1. 4×3

2. $5 \div 1$

3. 4×8

4. 3×5

5. 2×7

6. $8 \div 2$

7. $35 \div 5$

8. $32 \div 4$

9. $16 \div 4$

10. 3×7

11. 4×10

12. $14 \div 2$

13. 1×7

14. 3×8

15. $20 \div 4$

16. $9 \div 3$

Algebra Find the value of $a \times 3$ for each value of a .

17. $a = 2$

18. $a = 5$

19. $a = 1$

20. $a = 4$

Problem Solving and Test Prep

21. Sue has 32 marbles and wants to put them into 4 equal groups. How many marbles will be in each group?

22. Joe eats 5 apples every week. How many apples will Joe eat in 6 weeks?

23. Laurie makes a quilt pattern that is 10 squares wide and 3 squares long. How many squares does the quilt have in all?

- A 3
- B 10
- C 13
- D 30

24. Mrs. Long delivers 30 quilts to a hospital. She delivers the same number of quilts on each of the 6 floors. How many quilts does Mrs. Long hand out on each floor?

- A 5
- B 6
- C 7
- D 8

Multiply and Divide Facts Through 10

Find the product or quotient. Show the strategy you used.

1. 8×8

2. 7×9

3. 8×5

4. 9×6

5. $56 \div 8$

6. $81 \div 9$

7. $100 \div 10$

8. $72 \div 9$

9.
$$\begin{array}{r} 10 \\ \times 9 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 7 \\ \times 8 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 9 \\ \times 8 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 6 \\ \times 6 \\ \hline \end{array}$$

13. $8 \overline{)64}$

14. $9 \overline{)36}$

15. $7 \overline{)49}$

16. $6 \overline{)54}$

Problem Solving and Test Prep

17. Jeff had 10 checkers left at the end of each of the 7 games he played. How many checkers did Jeff have at the end of 7 games?

18. Kim played checkers for 6 days and won a total of 24 games. She won the same number of games each day. How many games did Kim win each day?

19. There are 6 rows of chairs with 7 chairs in each row. How many chairs are there? Describe the strategy you used to find the answer.

20. There are 8 rows of checkers in one box. Each row has 9 checkers. How many checkers are in one box?

A 17

B 32

C 56

D 72

Multiplication Table Through 12

Find the product or quotient. Show the strategy you used.

1. $110 \div 11$

2. 8×11

3. 12×9

4. $99 \div 11$

5. 7×12

6. 6×11

7. $84 \div 12$

8. $48 \div 12$

9. 11×11

10. $132 \div 11$

11. $108 \div 12$

12. 12×12

13. $60 \div 12$




14. $63 \div 7$

15. 11×9




16. 11×12

ALGEBRA Use the rule to find the missing numbers.




17. Multiply by 11.

Input	Output
2	
4	
6	

18. Multiply by 12.

Input	Output
3	
	48
5	

19. Divide by 11.

Input	Output
99	
	10
121	

20. **WRITE Math.** What could the missing factors be in $\square \times \square = 36$?
Find as many factor pairs as you can. Explain how you found them.

Patterns on the Multiplication Table

Find the square number.

1. 9×9

2. 5×5

3. 10×10

4. 4×4

5. 2×2

For 6–7, use the multiplication table.

6. What pattern do you see in the multiples of 11?

7. What pattern do you see in the multiples of 9?

×	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

Problem Solving and Test Prep

8. Niko has a square number that is less than 50. The digits add up to 9. What is Niko's number?

9. Use the rule that each number is 1 less than 3 times the number to make a pattern. What is the 4th number in the pattern?

10. Which number has multiples with a repeating pattern of 5s and 0s in the ones place?

- A 1
- B 5
- C 10
- D 20

11. The multiples of which number are three times the multiples of 4?

- A 8
- B 12
- C 40
- D 84

Problem Solving Workshop Skill: Choose the Operation

Problem Solving Skill Practice

Tell which operation you would use to solve the problem.

Explain your choice. Then solve the problem.

1. Sally takes 24 gallons of juice to the school picnic. The students at the picnic drink 2 gallons of juice every hour. How many hours will it take the students to drink all the juice?

2. Each student in Lori's class brings 12 cookies for the bake sale. There are 12 students in Lori's class. How many cookies does the class have for the bake sale?

Mixed Applications

3. Greg sells 108 mini muffins at the bake sale. He sold the mini muffins in bags of 12. How many bags of mini muffins does Greg sell? Which fact family did you use?

4. Julie wants to know how many workbooks she will use for the school year. The subjects she is studying are math, science, and reading. Each subject has 2 workbooks. Write a number sentence to show how many workbooks Julie will be using this year.

USE DATA Use the information in the table.

5. At the bake sale, 9 people buy slices of pie. Each person buys the same number of slices for \$2 each. How many slices of pie does each person buy?

Bake Sale Final Sales	
cupcakes	147
cookies	211
slices of pie	54
slices of cake	39
brownies	97

6. How many cookies, brownies, and cupcakes were sold in all?

ALGEBRA Find Missing Factors

Find the missing factor.

1. $4 \times g = 20$

$g =$

2. $y \times 3 = 27$

$y =$

3. $8 \times w = 48$

$w =$

4. $7 \times a = 49$

$a =$

5. $\square \times 2 = 24$

$\square =$

6. $9 \times r = 81$

$r =$

7. $4 \times \square = 36$

$\square =$

8. $7 \times s = 77$

$s =$

9. $5 \times \square = 23 + 2$

$\square =$

10. $8 \times \square = 20 - 4$

$\square =$

11. $6 \times \square = 11 + 7$

$\square =$

12. $10 \times \square = 15 + 5$

$\square =$

13. $7 \times \square = 12 + 2$

$\square =$

14. $3 \times \square = 16 + 5$

$\square =$

15. $4 \times \square = 13 + 3$

$\square =$

Problem Solving and Test Prep

16. Each season, a total of 32 tickets are given away. Each chosen family is given 4 free tickets. Write a number sentence that can be used to find the number of families that will receive tickets.
- _____

17. The manager of the Antelopes orders 4 uniforms for each new player. This year, the manager orders 16 uniforms. Write a number sentence that can be used to find the number of new players.
- _____

18. What is the missing factor in

$11 \times \square = 121?$

- A 10
B 11
C 12
D 13

19. What is the missing factor in

$\square \times 12 = 120?$

- A 0
B 11
C 12
D 10

Multiplication Properties

Use the properties and mental math to find the product.

1. $3 \times 4 \times 2$

2. $4 \times 5 \times 5$

3. $7 \times 4 \times 0$

4. $7 \times 12 \times 1$

Find the missing number. Name the property you used.

5. $(5 \times 3) \times 4 = 5 \times (\blacksquare \times 4)$

6. $3 \times 5 = 5 \times \blacksquare$

7. $8 \times \blacksquare = (2 \times 10) + (6 \times 2)$

8. $3 \times (7 - \blacksquare) = 3$

9. $8 \times (5 - 3 - 2) = \blacksquare$

10. $3 \times (2 \times 4) = \blacksquare \times (2 \times 3)$

Make a model and use the Distributive Property to find the product.

11. 14×6

12. 5×15

13. 9×17

Show two ways to group by using parentheses. Find the product.

14. $12 \times 5 \times 6$

15. $4 \times 3 \times 2$

16. $9 \times 3 \times 8$

Problem Solving and Test Prep

17. The pet store window has 5 kennels with 4 puppies each and 6 kennels with 6 kittens each. How many animals are in the window?

18. Jake takes his border collie on a walk for exercise. They walk four blocks that are 20 yards each. How many yards do Jake and his border collie walk?

19. Each packet of catnip toys has 7 toys. Each box of packets has 20 packets. How many toys are there in 5 boxes of catnip toys?

A 500

C 700

B 600

D 800

20. Is the number sentence true? Explain.
 $5 \times (4 - 3) = 5$

Order of Operations

Write *correct* if the operations are listed in the correct order.

If not correct, write the correct order of operations.

1. $(7 \times 8) \div 4$ Multiply, divide 2. $36 - 7 \times 3$ Subtract, multiply

3. $4 + 6 \times 3$ Add, multiply 4. $28 - 4 \times 6 + 12$ Subtract, multiply, add

5. $45 \div (12 - 7)$ Subtract, divide 6. $72 \div 8 - 4 + 7$ Add, subtract, divide

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

7. $7 + 10 \times 3$ 8. $(41 - 5) \div 6$ 9. $7 + 25 \div 5$ 10. $31 + 72 \div 8$

11. $7 + 35 \div 5 - 8$ 12. $4 + 5 + 9 \times 6$ 13. $28 - 10 \times 2 + 33$ 14. $6 + 81 \div 9 - 7$

Use the numbers listed to make a true number sentence.

15. 5, 6, and 42

$$\blacksquare - \blacksquare \times \blacksquare = 12$$

16. 3, 15, and 21

$$\blacksquare + \blacksquare \div \blacksquare = 22$$

17. 7, 9, and 81

$$\blacksquare \div \blacksquare - \blacksquare = 2$$

18. 3, 4, and 12

$$\blacksquare + \blacksquare \times \blacksquare = 51$$

19. 5, 6, and 7

$$\blacksquare \times \blacksquare - \blacksquare = 37$$

20. 4, 16, and 28

$$\blacksquare \div \blacksquare + \blacksquare = 23$$

Expressions with Parentheses

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

1. $2 - 3 \times 8 \div 12$ 2. $(5 + 28) \div 3 - 5$ 3. $(15 + 9) \div 2 - 1$ 4. $(2 + 7) \times 6 - 3$

Choose the expression that matches the words.

5. Gene divided 12 toy soldiers into 2 equal groups. Then he bought 6 more.

A $12 \div 2 + 6$ B $12 \div (2 + 6)$

6. Sabrina brought 6 bunches of 5 flowers each. Then she threw out 4 bunches that had wilted.

A $6 \times (5 - 4)$ B $6 \times 5 - 4$

Write words to match the expression.

7. $49 \div 7 + 2$

8. $6 \times 7 + 28$

9. $(4 \times 9) \div (16 - 14)$

Use parenthesis to make the number sentence true.

10. $44 \div 2 + 2 = 11$

11. $81 \div 7 + 2 + 4 = 13$

12. $3 \times 21 + 2 - 3 = 66$

Problem Solving and Test Prep

13. There were 5 birds nesting in each of 7 trees. Jim fed all but 2. How many birds did Jim feed?

14. Grace went on a bird watch for 7 days. Each day she saw 3 quail, 5 wrens, and a lark. How many birds did Grace see in all?

15. Which expression has a value of 14?

A $10 + (4 \times 2) - 6$

B $44 \div 11 + 12$

C $27 \div 9 + 11$

D $18 \times 2 - 14$

16. Find the value of the expression.

$(12 \times 6) \div (3 + 3)$

Write and Evaluate Expressions

Write an expression that matches the words.

1. Stamps s divided equally in 6 rows

2. Some peas p in each of 10 pods

3. Some marbles m on sale at 15¢ each

4. 42 cookies divided among several students s

Find the value of the expression.

5. $y \times 5$ if $y = 6$

6. $63 \div b$ if $b = 7$

7. $9 \times a$ if $a = 2$

8. $r \div 6$ if $r = 54$

Match the expression with words.

9. $4 \times t + 8$

10. $t \times 12 \div 4$

11. $t \div 2 - 8$

- a. a number, t , divided by 2 minus 8

- b. 4 times a number, t , plus 8

- c. a number, t , times 12 and separated into 4 pieces

Problem Solving and Test Prep

12. Ella has some pages with 15 stickers to a page. Write an expression for the number of stickers she has.

13. Look at Exercise 12. Suppose Ella has 5 pages. How many stickers does she have in all?

14. Robert has 7 times as many soap box racers as Xavier. Let r represent the number of soap box racers Robert has. Which expression tells the number of racers Xavier has?

A $7 + r$

C $7 \times r$

B $r - 7$

D $r \div 7$

15. Fran spent 350 cents on stamps. Write an expression for the number of stamps that Fran bought. How many stamps did he buy if each stamp cost 35 cents? Explain.

Multiplication and Division Equations

Write an equation for each. Choose the variable for the unknown.

Tell what the variable represents.

1. Three students divide 27 bracelets equally among them.

2. Two pounds of beads put equally in bags makes a total of 50 pounds.

3. Maddie plants 3 seeds each in 15 pots.

4. Jesse divides 36 ornaments equally and puts them into 9 bags.

Solve the equation.

5. $a \times 6 = 48$

$a =$ _____

6. $d \div 4 = 7$

$d =$ _____

7. $3 \times w = 27$

$w =$ _____

8. $63 \div n = 9$

$n =$ _____

9. $b \div 5 = 5$

$b =$ _____

10. $22 \div t = 11$

$t =$ _____

11. $4 \times k \times 3 = 24$

$k =$ _____

12. $5 \times h \times 3 = 45$

$h =$ _____

Problem Solving and Test Prep

13. Phyllis is making rings. Each ring has 3 beads. If she can make 7 rings, how many beads does Phyllis have?

14. Ted divided 56 colored blocks into 8 bags. How many blocks were in each bag?

15. If $t = 3$, which equation is true?

- A $t \div 12 = 4$ C $t \times 5 = 30$
 B $36 \div t = 12$ D $15 \times t = 60$

16. What is the value of p ?

$21 \div p = 7$

- A 21 C 4
 B 7 D 3

Multiply Equals by Equals

Tell whether each equation is true. If not, explain why.

1. $(5 + 2) \times 3 \stackrel{?}{=} 3 \times 7$

2. $(16 - 7) \times 8 \stackrel{?}{=} (4 + 5) \times (6 + 2)$

3. $54 \div 6 + 7 \stackrel{?}{=} 4 \times 3$

4. $2 \times 12 - 3 \stackrel{?}{=} 3 \times 11 + 1$

5. $(64 \div 8) + 14 \stackrel{?}{=} (22 - 11) \times 2$

6. $4 + 63 \div 9 \stackrel{?}{=} 5 \times 11 - 33$

Multiply both sides of the equation by the given number.

Find the new values.

7. $11 - 2 = 5 + 4$; multiply by 4.

8. $3 \times 3 = 36 \div 4$; multiply by 6.

9. $15 - 11 = 28 \div 7$; multiply by 8.

10. $144 \div 12 = 3 + 9$; multiply by 5.

What number makes the equation true?

11. $(5 + 3) \times 4 = \square \times 16$ 12. $(14 - \square) \times 5 = 3 \times 10 + 5$ 13. $66 \div 6 + 13 = 2 \times \square + 6$

Problem Solving and Test Prep

14. Peg picked 4 times plus 6 as many apples as Joe. If Joe picked 5 apples from each of 2 trees, how many apples did Peg pick?

15. Peg and Joe put their apples together. Then they divided them equally among 8 children. How many apples did each child get?

16. The letters A and B stand for numbers. If $A \times 4 = B + 2$, which statement is true?

A $A = B$

C $A > B$

B $A < B$

D $A + 2 = B \times 4$

17. What number goes into the box to make this number sentence true? Explain how you know.

$$(15 - 8) \times 2 = (\square \div 12) \times 7$$

Problem Solving Workshop Strategy: Predict and Test

Problem Solving Strategy Practice

Predict and test to solve.

- Betty likes to solve number puzzles. Here is the most recent one she found. The product of two numbers is 48. Their sum is 14. What are the two numbers?

- Kim is thinking of two numbers. The quotient is 4 and the difference is 27. What are the two numbers?

- Kyle and Ellie played basketball. Kyle scored half as many points as Ellie. Together they scored 27 points. How many did each player score?

- Don bought two puzzle books. Together, they cost \$19. One cost \$5 more than the other. How much did each book cost?

Mixed Strategy Practice

USE DATA For 5-10, complete the table.

	Sum	Product	Difference	Two Numbers
5.	10	21	4	<input type="text"/> <input type="text"/>
6.	10	25	0	<input type="text"/> <input type="text"/>
7.	10	16	6	<input type="text"/> <input type="text"/>
8.	9	18	3	<input type="text"/> <input type="text"/>
9.	15	54	3	<input type="text"/> <input type="text"/>
10.	8	16	0	<input type="text"/> <input type="text"/>

Patterns: Find a Rule

Find a rule. Write your rule as an equation. Use your rule to find the missing numbers.

1.

Input, <i>c</i>	4	8	32	128	512
Output, <i>d</i>	1	2	8	■	■

2.

Input, <i>r</i>	4	5	6	7	8
Output, <i>s</i>	8	10	12	■	■

3.

Input, <i>a</i>	10	20	30	40	50
Output, <i>b</i>	1	2	3	■	■

4.

Input, <i>m</i>	85	80	75	70	65
Output, <i>n</i>	17	16	15	■	■

Use the rule and the equation to fill in the input/output table.

5. Multiply *a* by 3, subtract 1.

$$a \times 3 - 1 = b$$

Input, <i>a</i>	1	2	3	4	5
Output, <i>b</i>	2	■	■	■	■

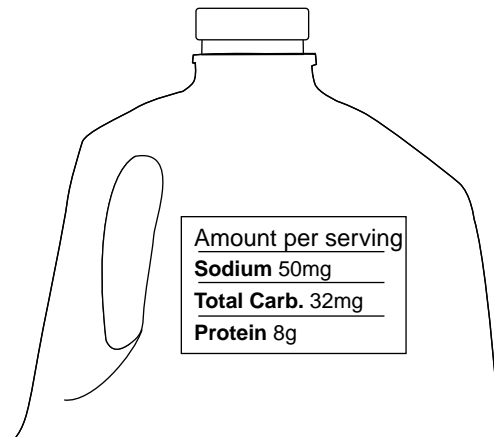
6. Divide *c* by 2, add 1.

$$c \div 2 + 1 = d$$

Input, <i>c</i>	2	4	6	8	10
Output, <i>d</i>	2	■	■	■	■

Problem Solving and Test Prep

7. **Use Data** Use the label. Hal has 3 servings of milk a day. How many grams of protein will he get in 5, 6, and 7 days? Write an equation.



8. What equation shows a rule for the table?

Input, <i>p</i> (pints)	1	2	3	4	5
Output, <i>c</i> (cups)	2	4	6	8	10

9. What equation shows a rule for the table?

Input, <i>p</i>	2	4	6	8	10
Output, <i>g</i>	6	12	18	24	30

Mental Math: Multiplication Patterns

Use mental math to complete the pattern.

1. $7 \times 6 = 42$

$7 \times 60 = \underline{\hspace{2cm}}$

$7 \times 600 = \underline{\hspace{2cm}}$

$7 \times 6,000 = \underline{\hspace{2cm}}$

2. $3 \times 8 = 24$

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

$3 \times 800 = \underline{\hspace{2cm}}$

$3 \times 8,000 = \underline{\hspace{2cm}}$

3. $9 \times 7 = 63$

$9 \times 70 = \underline{\hspace{2cm}}$

$9 \times 700 = \underline{\hspace{2cm}}$

$9 \times 7,000 = \underline{\hspace{2cm}}$

Use patterns and mental math to find the product.

4. 2×30

5. 3×700

6. $9 \times 4,000$

7. 7×800

ALGEBRA Find the value of n .

8. $2 \times n = 42,000$

$n =$

9. $7 \times 400 = n$

$n =$

10. $8 \times n = 16,000$

$n =$

11. $n \times 500 = 4,500$

$n =$

Problem Solving and Test Prep

12. Windsurfing costs \$20 a day at New State Park. Jen windsurfed for 5 days. Paul windsurfed for 7 days. How much more did Paul pay than Jen?

13. Every carload of people entering the state park pays \$7. In January, there were 200 cars that entered the park. In July, there were 2,000 cars that entered the park. How much more money did the park collect in July than in January?

14. Which number is missing from this equation?

$\blacksquare \times 7 = 3,500$

15. Which number is missing from this equation?

$8 \times \blacksquare = 32,000$

Mental Math: Estimate Products

Estimate the product. Write the method.

1. 2×49

2. 7×31

3. 5×58

4. 4×73

5. 3×27

6. 8×26

7. 4×25

8. 5×82

9. 6×53

10. 9×47

11. 6×71

12. 5×31

13.
$$\begin{array}{r} 88 \\ \times 2 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 29 \\ \times 8 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 65 \\ \times 4 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 39 \\ \times 7 \\ \hline \end{array}$$

Problem Solving and Test Prep

USE DATA For 17–19, use the table.

17. About how many pencils will Haley use in 8 months?

18. How many more pencils will Haley use in ten months than Abby will use in ten months?

19. Which number sentence gives the best estimate of 6×17 ?

- A 6×20
 B 6×25
 C 6×10
 D 6×5

20. Which number sentence would give the best estimate of 6×51 ?

- A 6×5
 B 6×45
 C 6×50
 D 6×55

Pencils Used Each Month

Name	Number of Pencils
Haley	18
Abby	12
Bridget	17
Kelsey	21

Problem Solving Workshop Strategy: Draw a Diagram

Problem Solving Strategy Practice

Draw a diagram to solve.

- Jan walks 5 blocks north, 1 block east, and 3 more blocks north. Then she walks 1 block west and 1 block south. How far is Jan from where she started?
- Nick's toy boat is 24 inches long. Ben has 10 toy boats, but they are each only 6 inches long. How many of Ben's boats, laid end to end, would it take to match the length of Nick's boat?



Mixed Strategy Practice

USE DATA For 3–6, use the information in the table.

- How many times greater is the maximum lifespan of 6 Bowhead Whales than that of 1 Fin Whale?

- List the types of whales shown in order from shortest lifespan to longest lifespan.

- Look at Exercise 3. Write a similar problem using two different types of whales.

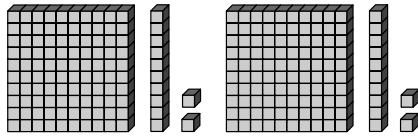
Whales' Maximum Life Span	
Whale Type	Years
Pilot	60
Orca	90
Fin	60
Blue	80
Bowhead	130

- Write three different expressions that equal the life span of the Bowhead whale, using one or more operations.

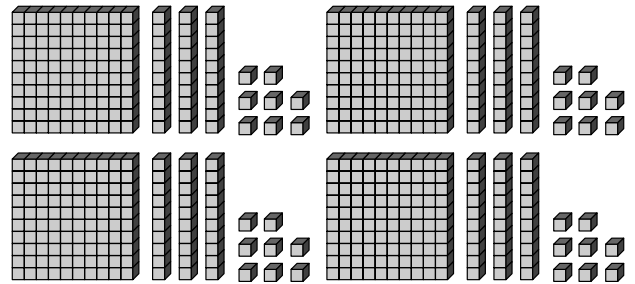
Model 3-Digit by 1-Digit Multiplication

Find the product.

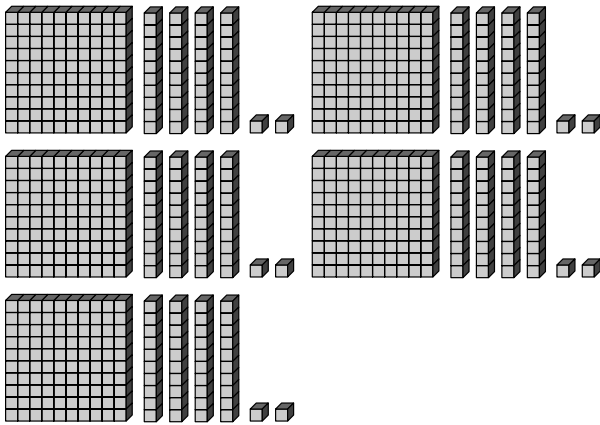
1.



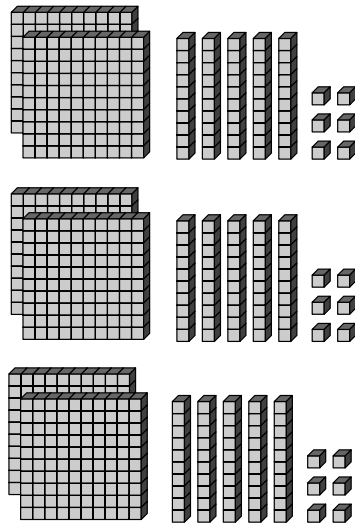
2.



3.



4.



Use base-ten blocks to model the product. Record your answer.

5. 2×101

6. 3×310

7. 5×192

8. 4×257

9. 3×436

10. 6×288

11. 7×285

12. 5×437

Record 3-Digit by 1-Digit Multiplication

Estimate. Then record the product.

1. 3×518

2. 7×336

3. 5×731

4. 6×492

5. 8×254

6. 4×836

7. 8×633

8. 9×126

ALGEBRA Find the missing digit.

$$\begin{array}{r} 9. \quad 55\boxed{} \\ \times 4 \\ \hline 2,224 \end{array}$$

$$\begin{array}{r} 10. \quad 52\boxed{} \\ \times 6 \\ \hline 3,138 \end{array}$$

$$\begin{array}{r} 11. \quad 815 \\ \times \boxed{} \\ \hline 2,445 \end{array}$$

$$\begin{array}{r} 12. \quad \boxed{}76 \\ \times 5 \\ \hline 1,880 \end{array}$$

$$\begin{array}{r} 13. \quad 157 \\ \times 8 \\ \hline 1,2\boxed{}6 \end{array}$$

$$\begin{array}{r} 14. \quad 676 \\ \times 2 \\ \hline 1,\boxed{}52 \end{array}$$

$$\begin{array}{r} 15. \quad 424 \\ \times 7 \\ \hline \boxed{},968 \end{array}$$

$$\begin{array}{r} 16. \quad 128 \\ \times 9 \\ \hline 1,15\boxed{} \end{array}$$

Problem Solving and Test Prep

17. Sergio's media player contains 135 classical selections. It contains 5 times as many country selections as classical selections. How many selections does Sergio have in all?

18. Marie has 6 different boxes of jazz sheet music. Each box holds 112 pages. Write an equation to show how many pages of sheet music Marie has in all. Solve the equation.

19. Which expression shows how to multiply 4×657 using place value and expanded form?

- A** $4 \times 600 + 4 \times 50 + 4 \times 7$
B $4 \times 6 + 4 \times 5 + 4 \times 7$
C $4 + 6 + 4 + 5 + 4 + 7$
D $4 \times 600 + 4 \times 500 + 4 \times 7$

20. What expression shows how to multiply 4×367 using place value and expanded form?

- A** $3 \times 400 + 3 \times 70 + 3 \times 60$
B $7 \times 600 + 7 \times 40 + 7 \times 30$
C $6 \times 400 + 6 \times 30 + 6 \times 7$
D $4 \times 300 + 4 \times 60 + 4 \times 7$

Multiply 4-Digit Numbers and Money

Estimate. Then find the product.

$$\begin{array}{r} 1. \ 1,379 \\ \times \ 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \ \$64.11 \\ \times \ 3 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \ \$4,279 \\ \times \ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \ 1,563 \\ \times \ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \ \$5,218 \\ \times \ 3 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \ 4,156 \\ \times \ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \ \$81.27 \\ \times \ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \ 2,453 \\ \times \ 6 \\ \hline \end{array}$$

Compare. Write $<$, $>$, or $=$ for each \bigcirc .

$$9. \ 2 \times 9,736 \bigcirc 3 \times 3,299$$

$$10. \ 6 \times \$17.50 \bigcirc 7 \times \$15.00$$

$$11. \ 9 \times 3,998 \bigcirc 6 \times 4,557$$

$$12. \ 5 \times \$6,115 \bigcirc 4 \times \$7,676$$

$$13. \ 7 \times 2,115 \bigcirc 2 \times 7,449$$

$$14. \ 4 \times 3,441 \bigcirc 6 \times 2,113$$

Problem Solving and Test Prep

15. What number is 630 less than 4 times 4,721?

16. Charlie buys 3 bear statues for \$21.45 each. He gives the cashier a \$100 bill. How much change will Charlie receive?

17. It is 3,014 miles one way from Rob's house in Florida to Lynn's house in Georgia. What is the round-trip distance?

- A 6,028 miles
- B 6,000 miles
- C 3,014 miles
- D 3,000 miles

18. It is 1,260 miles from San Diego to Seattle. What is the round-trip distance?

- A 2,420
- B 1,262
- C 2,520
- D 1,462

Multiply with Zeros

Estimate. Then find the product.

$$\begin{array}{r} 1. \quad 3,044 \\ \times \quad 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 4,700 \\ \times \quad 5 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \$75.05 \\ \times \quad 6 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \$43.05 \\ \times \quad 4 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 8,077 \\ \times \quad 2 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 1,130 \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad \$30.45 \\ \times \quad 6 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad \$51.03 \\ \times \quad 8 \\ \hline \end{array}$$

$$9. \quad 4 \times 2,340$$

$$10. \quad 6 \times \$30.55$$

$$11. \quad 7 \times \$1,023$$

$$12. \quad 5 \times 3,405$$

$$13. \quad 3,240 \times 3$$

$$14. \quad 3,240 \times 5$$

$$15. \quad 3,240 \times 8$$

$$16. \quad 3,240 \times 9$$

Problem Solving and Test Prep

17. Saya pays \$35.90 for one ticket to the circus. How much will 8 tickets cost?

18. Raul buys 3 packs of sports stickers. Each pack has 105 stickers. How many stickers does Raul buy in all?

19. Mr. Bench buys 4 pairs of pajamas for \$20.98 each. How much does Mr. Bench spend?

A \$80.92
 B \$81.92
 C \$82.92
 D \$83.92

20. Carl buys 6 books for summer reading. Each book has 203 pages. How many pages will Carl read over the summer?

A 1,209
 B 818
 C 1,218
 D 809

Mental Math: Multiplication Patterns

Use mental math and patterns to find the product.

1. $50 \times 3,000$

2. 7×40

3. $8 \times 1,000$

4. 50×700

5. $12 \times 2,000$

6. 70×200

7. 11×120

8. 90×80

ALGEBRA Copy and complete the tables using mental math.

9. 1 roll = 20 nickels

Number of rolls	20	30	40	50	600
Number of Nickles	400	■	■	■	■

10. 1 roll = 60 dimes

Number of rolls	20	30	40	50	600
Number of Dimes	1,200	■	■	■	■

x	7	60	700	8,000
11. 40	280	■	■	■
12. 60	■	■	■	480,000

x	8	40	500	9,000
13. 50	400	■	■	■
14. 90	■	■	■	810,000

Problem Solving and Test Prep

USE DATA For 15–16, use the table.

15. How long would a drywood termite magnified by 6,000 appear to be?

16. Which would appear longer, a drywood termite magnified 1,200 times or a wasp magnified 900 times?

17. How many zeros are in the product of 400×500 ?

A 4

C 6

B 5

D 7

18. How many zeros must be in the product of 1,000 and any factor?

Insect Lengths	
Insect	Length (in mm)
Carpenter Bee	19
Drywood Termite	12
Fire Ant	4
Termite	12
Wasp	15

Multiply by Tens

Choose a method. Then find the product.

1. 20×17

2. 15×60

3. 66×50

4. 78×30

5. 96×40

6. 90×46

7. 52×80

8. 70×29

ALGEBRA Find the missing digit.

9. $22 \times 3\blacksquare = 660$

10. $60 \times 37 = 2,\blacksquare 20$

11. $5\blacksquare \times 80 = 4,480$

12. $\blacksquare 0 \times 77 = 3,080$

13. $40 \times 44 = \blacksquare,760$

14. $90 \times 83 = 7,4\blacksquare 0$

Problem Solving and Test Prep

USE DATA For 15–17, use the table.

15. How many frames does it take to produce 60 seconds of *Snow White*?

16. Are there more frames in 30 seconds of *Pinocchio* or 45 seconds of *The Enchanted Drawing*?

17. Sadie runs 26 miles each week. How many miles will Sadie run in 30 weeks?

- A 780
B 720
C 690
D 700

18. If gourmet cookies cost \$12 a pound, how much does it cost to purchase 30 pounds of cookies?

- A \$360
B \$3,600
C \$36
D \$36,000

Animated Productions		
Title	Date Released	Frames Per Second
The Enchanted Drawing [©]	1900	20
Little Nemo [©]	1911	16
Snow White and the Seven Dwarfs [©]	1937	24
Pinocchio [©]	1940	19
The Flintstones [™]	1960–1966	24

Mental Math: Estimate Products

Choose the method. Estimate the product.

1. 34×34

2. 27×42

3. 41×55

4. 17×39

5. 72×21

6. 54×67

7. 58×49

8. 64×122

9. 93×93

10. 19×938

11. 42×666

12. 71×488

Problem Solving and Test Prep

13. **Fast Fact** A serving of watermelon has 27 grams of carbohydrate. About how many grams of carbohydrate do 33 servings contain?
- _____
14. There are 52 homes in Ku's neighborhood. If the door on each refrigerator in each home is opened 266 times a week, and each home has one refrigerator, about how many times are the doors opened in all?
- _____
15. Choose the best estimate for the product of 48×637 .
- A 20,000
B 24,000
C 30,000
D 34,000
16. An assembly line produces enough cotton for 1,500 T-shirts a day. How could you estimate the number of T-shirts 45 assembly lines produce?
- A $1,500 \times 50$
B $30 \times 1,200$
C $2,000 \times 100$
D $150 \times 4,500$

Problem Solving Workshop Skill: Multistep Problems

Problem Solving Skill Practice

- The Pacific Wheel is a ferris wheel that can carry 6 passengers in each of 20 cars in one ride. How many passengers can it carry on a total of 45 rides?

- Bus A travels 532 miles one way. Bus B travels 1,268 miles round trip. Which bus travels the most round-trip miles if Bus A makes 6 trips and Bus B makes 5 trips?

- There are 62 students in all. Twenty-five take only band class. Thirty-four take only art class. The rest take both band and art class. How many students take both band and art?

- Trin bought 6 T-shirts at \$17 each. Ron bought 7 shirts at the same price. How much did Trin and Ron spend altogether?

Mixed Applications

USE DATA For 5–6, use the table.

- The Smiths are a family of 7. How much will they spend for admission to the carnival if they go on Saturday night?

- How much will the Smiths save if they go on Monday instead of Saturday?

Carnival One Night Admission Tickets	
Night	Cost
Monday through Wednesday	\$12
Thursday through Friday	\$15
Saturday	\$20

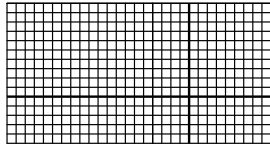
- A local carnival has a Ferris wheel with 20 cars that seat 4 people each. Each ride is 10 minutes with 5 minutes to unload and reload. How many people can the Ferris wheel carry in 3 hours?

- Rosa rode the Ferris wheel, the go-carts for 10 minutes, the merry-go-round for 25 minutes, and the roller coaster for 35 minutes. She was on rides for 1 hour and 30 minutes. How long did she ride the Ferris wheel?

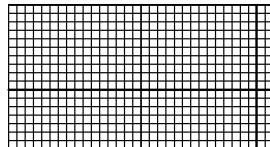
Model 2-Digit by 2-Digit Multiplication

Use the model and partial products to solve.

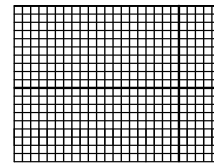
1. 15×29



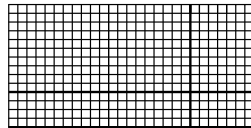
2. 17×32



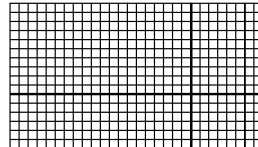
3. 19×25



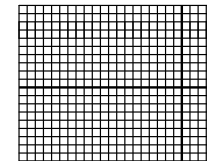
4. 14×27



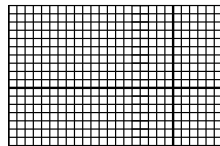
5. 16×28



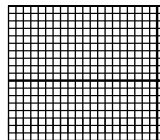
6. 19×24



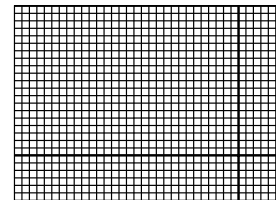
7. 17×26



8. 18×21



9. 26×36



Problem Solving and Test Prep

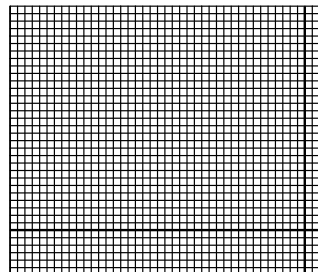
10. The apples from an average tree will fill 20 bushel-sized baskets. If an orchard has 17 average trees, how many baskets of apples can it produce?

11. If each student eats about 65 apples a year, how many apples will the 27 students in Mrs. Jacob's class eat in all?

12. Draw a model in the space below that could represent the product 64.



13. What product is shown by the model?



Record 2-Digit by 2-Digit Multiplication

Estimate. Then choose either method to find the product.

1.
$$\begin{array}{r} 28 \\ \times 19 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 36 \\ \times 53 \\ \hline \end{array}$$

3.
$$\begin{array}{r} \$76 \\ \times 25 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 64 \\ \times 31 \\ \hline \end{array}$$

5. 76×83

6. 41×69

7. 57×65

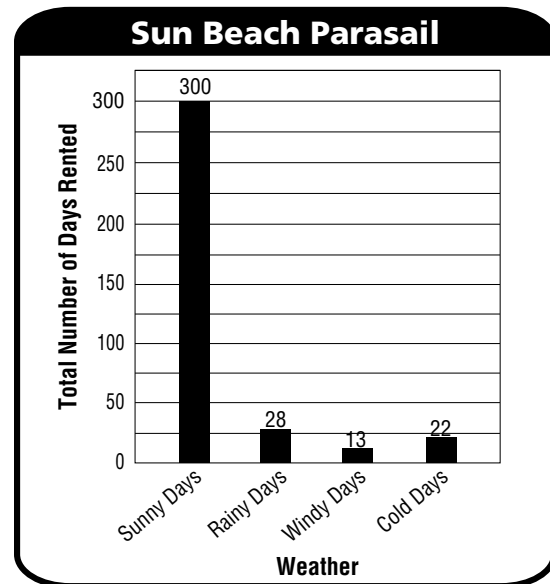
8. $82 \times \$48$

Problem Solving and Test Prep

USE DATA For 9–10, use the bar graph.

9. Sun Beach Parasail had 19 riders each windy day. How many riders in all parasailed last year on windy days?

10. On each of 75 sunny days, Sun Beach Parasail had 62 riders. How many riders in all parasailed on those 75 days?



11. Willa bought 16 arborvitae trees for her backyard. Each tree cost \$33. How much did the trees cost in all?
- A \$300
B \$480
C \$528
D \$600
12. There are 47 members in the Fun in the Sun Parasail Club. Each member spent 88 hours last year parasailing. How many hours did the club members spend parasailing last year in all?
- A 6,413
B 4,136
C 4,230
D 7,236

Multiply 2- and 3-Digit Numbers and Money

Estimate. Then find the product.

1.
$$\begin{array}{r} 58 \\ \times 39 \\ \hline \end{array}$$

2.
$$\begin{array}{r} \$4.28 \\ \times 45 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 622 \\ \times 76 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 199 \\ \times 37 \\ \hline \end{array}$$

5. $\$3.97 \times 36$

6. 544×47

7. $37 \times \$638$

8. 747×23

9. $\$9.32 \times 42$

10. 81×422

11. $\$1.23 \times 71$

12. 15×602

Problem Solving and Test Prep

13. **Reasoning** Sally found 9×15 using the break apart strategy. Show how Sally found the product.

14. Each of 41 electric cars can drive 50 miles in one hour. How many miles total can all the cars travel in one hour?

15. Kip likes a multigrain bread that costs \$3.89 per loaf. If his family consumes one loaf every week, how much will they spend on this bread in one year?

- A \$202.28
B \$206.17
C \$206.89
D \$208.21

16. How many minutes are there in 24 hours?

- A 1380
B 1500
C 1440
D 1540

Multiply Greater Numbers

Estimate. Then find the product. Write the method you used.

1.
$$\begin{array}{r} 221 \\ \times 30 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 653 \\ \times 32 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 5,000 \\ \times 70 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 3,221 \\ \times 23 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 312 \\ \times 20 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 666 \\ \times 11 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 867 \\ \times 59 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 9,000 \\ \times 80 \\ \hline \end{array}$$

9. $3,433 \times 22$

10. $505 \times \$90$

11. $62 \times 2,763$

12. $52 \times \$10.10$

13. $50 \times \$14.78$

14. $19 \times \$91.28$

15. $\$15.73 \times 80$

16. $\$71.02 \times 33$

Problem Solving and Test Prep

17. June had a party at home. June's birthday plates cost \$10.97 each. If there were a total of 23 people at the party including June, how much did the plates cost?

18. A local store sells balloons at \$29.45 a case. Frank bought 48 cases. How much did the balloons cost?

19. What is the best method to multiply 40×800 ?

- A mental math
- B calculator
- C paper and pencil
- D none of the above

20. Which shows the closest estimate of 61×829 ?

- A $65 \times 820 = 53,300$
- B $100 \times 1,000 = 100,000$
- C $60 \times 830 = 49,800$
- D $50 \times 800 = 40,000$

Problem Solving Workshop Skill: Evaluate Reasonableness

Problem Solving Skill Practice

Solve the problem. Then evaluate the reasonableness of your answer. Explain.

1. Mr. Kohfeld sells farm eggs for \$1.37 a carton. If he sells 1 carton to each of 4 neighbors, how much money does Mr. Kohfeld earn?

2. Vivian has the same \$6.49 breakfast every day at a local grill. How much does Vivian spend in 7 days?

3. Yoshi is an athlete who has a breakfast of 1,049 calories each morning. How many calories does Yoshi consume for breakfast in 7 days?

4. Together Elise and Chris spelled 27 words correctly. Chris spelled 5 more than Elise. How many words did each student spell correctly?

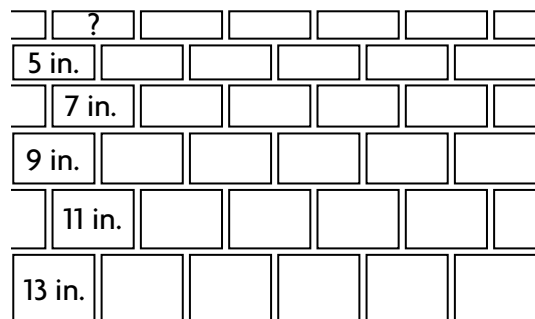
Mixed Applications

5. The Miller family gives 9 sacks of feed to their farm pigs a day. How many sacks of feed do the pigs eat in a year (365 days)? How do you know your answer is reasonable?

6. Joe spent \$25.87 for groceries. He bought cereal for \$6.25, eggs for \$5.37, pancake mix for \$3.67, bacon for \$7.25, and juice. How much did he spend for juice?

7. **Use Data** Tanya is building a wall. Given the pattern, how thick is the next stone?

8. **Use Data** If the finished wall is 6 stones high, what is the overall height of the wall?



Divide with Remainders

Use counters to find the quotient and remainder.

1. $27 \div 5 = \square$

2. $34 \div 8 = \square$

3. $18 \div 4 = \square$

4. $57 \div 7 = \square$

5. $41 \div 6 = \square$

6. $53 \div 9 = \square$

Divide. You may wish to use counters or draw a picture to help.

7. $26 \div 3 = \square$

8. $34 \div 4 = \square$

9. $50 \div 6 = \square$

10.
$$\begin{array}{r} \square \\ 9 \overline{)75} \end{array}$$

11.
$$\begin{array}{r} \square \\ 8 \overline{)54} \end{array}$$

12.
$$\begin{array}{r} \square \\ 7 \overline{)60} \end{array}$$

13. $17 \div 3 = \square$

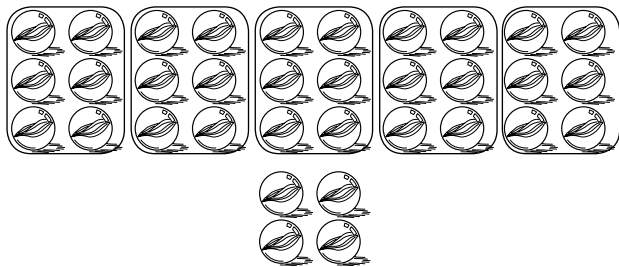
14. $44 \div 5 = \square$

15. $33 \div 3 = \square$

Problem Solving and Test Prep

16. Five students are playing a card game using a deck of 54 cards. If the cards are divided evenly among each player, how many will each student get? How many cards are left over?
17. Bill made up a game using 10 each of purple, yellow, green, blue, orange, and red marbles. If Bill divides the marbles equally among 8 players, how many will be left over?

18. Which problem does the model describe?



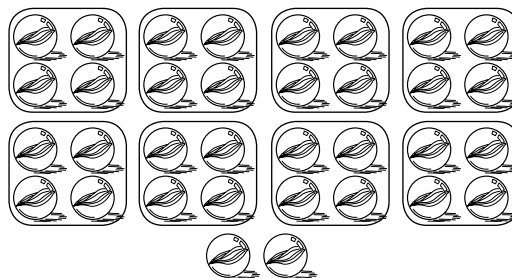
A $34 \div 5$

C $30 \div 4$

B $5 \overline{)28}$

D $6 \overline{)20}$

19. Which problem does the model describe?



A $28 \div 6$

C $34 \div 8$

B $4 \overline{)42}$

D $4 \overline{)24}$

Model 2-Digit by 1-Digit Division

Use base-ten blocks to find the quotient and remainder.

1. $37 \div 2 = \square r \square$ 2. $53 \div 5 = \square r \square$ 3. $92 \div 7 = \square r \square$ 4. $54 \div 4 = \square r \square$

5. $56 \div 3 = \square r \square$ 6. $89 \div 9 = \square r \square$ 7. $78 \div 6 = \square r \square$ 8. $92 \div 8 = \square r \square$

9. $\begin{array}{r} \square r \square \\ 4 \overline{)65} \end{array}$

10. $\begin{array}{r} \square r \square \\ 7 \overline{)79} \end{array}$

11. $\begin{array}{r} \square r \square \\ 6 \overline{)89} \end{array}$

12. $\begin{array}{r} \square r \square \\ 4 \overline{)87} \end{array}$

Divide. You may wish to use base-ten blocks.

13. $\begin{array}{r} \square r \square \\ 3 \overline{)77} \end{array}$

14. $\begin{array}{r} \square r \square \\ 2 \overline{)67} \end{array}$

15. $\begin{array}{r} \square r \square \\ 4 \overline{)66} \end{array}$

16. $\begin{array}{r} \square r \square \\ 5 \overline{)67} \end{array}$

17. $37 \div 2 = \square r \square$ 18. $98 \div 4 = \square r \square$ 19. $91 \div 6 = \square r \square$ 20. $72 \div 7 = \square r \square$

21. $\begin{array}{r} \square r \square \\ 8 \overline{)93} \end{array}$

22. $\begin{array}{r} \square r \square \\ 6 \overline{)57} \end{array}$

23. $\begin{array}{r} \square r \square \\ 4 \overline{)77} \end{array}$

24. $\begin{array}{r} \square r \square \\ 9 \overline{)59} \end{array}$

Record 2-Digit by 1-Digit Division

Divide and record.

1. $4\overline{)93}$

2. $7\overline{)75}$

3. $5\overline{)97}$

4. $49 \div 3 = \square$

5. $61 \div 2 = \square$

6. $95 \div 7 = \square$

7. $9\overline{)87}$

8. $6\overline{)87}$

9. $8\overline{)99}$

ALGEBRA Complete each table.

10.

Number of Cups	16	20	24	28	32
Number of Quarts	4	5	■	■	■

11.

Number of Pints	64	72	80	88	96
Number of Gallons	8	9	■	■	■

Problem Solving and Test Prep

12. Sixty-three students signed up for golf. The coach divided them into groups with 4 students in each group. How many students were left over?
- _____
13. There are 6 runners on each relay team. If a total of 77 runners signed up, how many relay teams could there be?
- _____
14. Four students divided 85 base-ten blocks equally among them. How many base-ten blocks does each student receive?
- A 20
B 21
C 22
D 24
15. Three students divided 85 base-ten rods equally among them. How many base-ten rods were left over?
- A 4
B 3
C 2
D 1

Problem Solving Workshop Strategy: Compare Strategies

Problem Solving Strategy Practice

Choose a strategy to solve the problems.

- Fiona's dog is 4 times as long as Rod's dog. End to end, they are 60 inches long. How long is Fiona's dog?

- Davey divided 112-ounces of rabbit food equally into 7 containers. How much did each container hold?

- Dina walked from home 3 blocks west and 5 blocks north to get to the pet store. If now she walks 1 block east, 4 blocks north, and another 2 blocks east, how far is Dina from home?

- Mel is collecting 7 cards each of his 13 favorite baseball players. He now has a total of 87 cards. How many additional cards does Mel need to make his set of 7 cards each complete?

Mixed Strategy Practice

USE DATA For 5–6, use the chart.

- Together the height of Dan's 3 dogs is 38 inches. What breeds are they?

- Order the dogs in the table from shortest to tallest.

- Altogether, Haille's dog statue collection weighs 20 pounds. One statue weighs 8 pounds and the rest weigh half as much. How many dog statues does Haille have?

Dog Heights	
Breed	Height
Bichon Frise	10 in.
Border Collie	20 in.
Chihuahua	8 in.
Irish Setter	27 in.
Labrador Retriever	24 in.
Shar-Pei	19 in.
Siberian Huskey	22 in.

- Pose a Problem** Use the information from Exercise 5 to write a new problem that asks to explain the answer.

Mental Math: Division Patterns

Use mental math to complete the pattern.

1. $72 \div 8 = 9$

$720 \div 8 = \underline{\hspace{2cm}}$

$7,200 \div 8 = \underline{\hspace{2cm}}$

$72,000 \div 8 = \underline{\hspace{2cm}}$

2. $42 \div 7 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \div 7 = 60$

$4,200 \div 7 = \underline{\hspace{2cm}}$

$42,000 \div 7 = \underline{\hspace{2cm}}$

3. $\underline{\hspace{2cm}} \div 6 = 4$

$240 \div 6 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \div 6 = 400$

$24,000 \div 6 = \underline{\hspace{2cm}}$

4. $30 \div 3 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \div 3 = 100$

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

$\underline{\hspace{2cm}} \div 3 = 10,000$

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

$400 \div 5 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \div 5 = 800$

$40,000 \div 5 = \underline{\hspace{2cm}}$

6. $28 \div 4 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \div 4 = 70$

$2,800 \div 4 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \div 4 = 7,000$

Use mental math and patterns to find the quotient.

7. $1,600 \div 4 = \blacksquare$

8. $28,000 \div 7 = \blacksquare$

9. $50 \div 5 = \blacksquare$

10. $900 \div 3 = \blacksquare$

11. $32,000 \div 4 = \blacksquare$

12. $2,000 \div 5 = \blacksquare$

13. $600 \div 2 = \blacksquare$

14. $3,500 \div 7 = \blacksquare$

Problem Solving and Test Prep

15. Maria has 4,500 stamps in her collection. She puts an equal amount of stamps into 9 books. How many stamps will be in each book?

16. Tex wants to put 640 stickers in his sticker book. If there are 8 stickers to a page, how many pages will Tex fill?

17. The theme park tickets sells for \$4 each. It collects \$2,000 in one day. How many tickets does the park sell in one day?

- A 50
B 500
C 5,000
D 50,000

18. Dee collected \$60 for selling tickets. If she sold 5 tickets, how much did each ticket cost?

- A \$12
B \$24
C \$30
D \$45

Mental Math: Estimate Quotients

Estimate the quotient.

1. $392 \div 4$

2. $489 \div 6$

3. $536 \div 9$

4. $802 \div 8$

5. $632 \div 7$

6. $32,488 \div 4$

7. $3,456 \div 5$

8. $7,820 \div 8$

Estimate to compare. Write $<$, $>$, or $=$ for each \bigcirc .

9. $276 \div 3 \bigcirc 460 \div 5$

10. $332 \div 6 \bigcirc 412 \div 5$

11. $527 \div 6 \bigcirc 249 \div 3$

12. $138 \div 2 \bigcirc 544 \div 9$

13. $478 \div 7 \bigcirc 223 \div 3$

14. $3,112 \div 8 \bigcirc 1,661 \div 8$

Problem Solving and Test Prep

USE DATA For 15–16, use the table.

15. Which beats faster, a dog's heart in 5 minutes or a mouse's heart in 1 minute?
- _____

16. Which beats slower in 1 minute: a human's heart or a horse's heart?
- _____

Resting Heartbeats of Select Mammals	
Mammal	Rate per 5 minutes
Human	375
Horse	240
Dog	475
Mouse	2,490

17. A Common Loon's heart beats about 1,250 times in 5 minutes. What is the best estimate of the number of times its heart beats in one minute?
- A 20
B 40
C 250
D 400
18. Nine equal-length Arizona Black Rattlesnakes laid in a row measure 378 inches. What is the best estimate of the length of 1 rattlesnake?
- A 20
B 40
C 200
D 400

Place the First Digit

Tell where to place the first digit. Then divide.

1. $4\overline{)511}$

2. $7\overline{)621}$

3. $2\overline{)124}$

4. $3\overline{)423}$

5. $136 \div 2$

6. $215 \div 5$

7. $468 \div 6$

8. $357 \div 8$

Divide.

9. $3\overline{)166}$

10. $9\overline{)785}$

11. $4\overline{)334}$

12. $6\overline{)577}$

13. $116 \div 2$

14. $425 \div 5$

15. $627 \div 7$

16. $436 \div 8$

Problem Solving and Test Prep

17. Petra picked 135 petals from the flowers of sweet pea plants. Each flower has 5 petals. How many flowers did Petra pull petals from?

18. Todd wants to plant some thyme equally in 8 areas in his garden. If he has 264 plants, how many thyme plants can Todd put in each area?

19. In which place is the first digit in the quotient $118 \div 4$?

A ones

C hundreds

B tens

D thousands

20. In which place is the first digit in the quotient $1,022 \div 5$?

A ones

C hundreds

B tens

D thousands

Problem Solving Workshop

Skill: Interpret the Remainder

Problem Solving Skill Practice

Solve. Write a , b , or c to explain how to interpret the remainder.

- Quotient stays the same. Drop the remainder.
 - Increase the quotient by 1.
 - Use the remainder as the answer.
- The crafts teacher gave 8 campers a total of 55 beads to make necklaces. If he divided the beads equally among the campers, how many did each camper have?

 - In all, campers from 3 tents brought 89 logs for a bonfire. Two tents brought equal amounts but the third brought a few more. How many more?

- Gene had 150 cups of water to divide equally among 9 campers. How many cups did he give each camper?

- Camp leaders divided 52 cans of food equally among 9 campers. How many cans of food were left over?

Mixed Applications

- Geena had 34 hot dogs. She gave 3 camp counselors 2 hot dogs each before dividing the rest equally among the 7 campers. How many hot dogs did she give each camper?

- The morning of a hiking trip the temperature was 54°F . By mid-afternoon, the temperature had risen to 93°F . How much warmer was the afternoon temperature?

- Pose a Problem** Exchange the known for unknown information in Exercise 5 to write a new problem.

- Wynn bought these camping tools: a flashlight, an axe for \$15, a lantern for \$12, and a camp stool for \$23. If he spent \$57, how much did the flashlight cost?

Divide 3-Digit Numbers and Money

Divide and check.

1. $147 \div 5 = \underline{\hspace{2cm}}$ 2. $\$357 \div 7 = \underline{\hspace{2cm}}$ 3. $575 \div 4 = \underline{\hspace{2cm}}$

4. $6 \overline{) \$844}$ 5. $9 \overline{) 874}$ 6. $8 \overline{) 766}$

ALGEBRA Find the missing digit.

7. $577 \div \blacksquare = 115 \text{ r}2$ 8. $\blacksquare 10 \div 2 = \405 9. $734 \div 3 = 24 \blacksquare \text{ r}2$ 10. $\$572 \div 6 = \blacksquare 5 \text{ r}2$

11. $9 \overline{) \blacksquare 593} \quad \blacksquare 5 \text{ r}8$ 12. $4 \overline{) 145 \blacksquare 2} \quad \blacksquare 145 \text{ r}2$ 13. $\blacksquare \overline{) 572} \quad \blacksquare 71 \text{ r}4$ 14. $7 \overline{) 488} \quad \blacksquare 69 \text{ r} \blacksquare$

Problem Solving and Test Prep

15. In all, Alfred paid \$18 for 12 bundles of asparagus at a local grocery store. If the bundles were in a buy-one-get-one-free sale, how much did each bundle cost before the sale?
- _____
16. Eva wants to divide 122 yards of yarn into 5-yard lengths to make potholders. How many potholders can Eva make? How many yards of yarn will be left over?
- _____
17. Ed divided 735 football cards among 8 friends. How many cards did each friend get?
- A 98
B 91
C 99
D 99r3
18. Four cans of spaghetti are on sale for \$4.64. How much does one can cost?
- _____

Zeros in Division

Write the number of digits in each quotient.

1. $366 \div 3$

2. $5 \overline{)374}$

3. $635 \div 7$

4. $4 \overline{)923}$

5. $672 \div 8$

6. $5 \overline{)811}$

7. $9 \div 921$

8. $6 \overline{)597}$

9. $816 \div 2$

10. $7 \overline{)177}$

Divide and check.

11. $495 \div 5 =$ _____

12. $719 \div 6 =$ _____

13. $3 \overline{)735}$

14. $4 \overline{)897}$

15. $210 \div 4 =$ _____ 16. $103 \div$ _____ $= 14 \text{ r}5$ 17. _____ $\div 5 = 61$

Problem Solving and Test Prep

18. Yoshi has a collection of 702 miniature cars that he displays on 6 shelves in his bookcase. If the cars are divided equally, how many are on each shelf?
19. In 5 days, scouts made a total of 865 trinkets for a fundraiser. If they made the same number each day, how many did they make in 1 day?

20. Greta has 594 flyers in stacks of 9 flyers each. How do you find the number of stacks Greta made? Explain.

21. Susan has 320 slices of banana bread. She wants to fill bags with 8 slices of banana bread each. How many bags will Susan fill?

Divide Greater Numbers

Divide. Write the method you used.

1. $2 \overline{)643}$

2. $6 \overline{)2,418}$

3. $4 \overline{)6,458}$

4. $5 \overline{)1,467}$

5. $3 \overline{)2,483}$

6. $7 \overline{)8,123}$

7. $8 \overline{)7,467}$

8. $3 \overline{)5,105}$

9. $7 \overline{)6,111}$

10. $4 \overline{)9,600}$

ALGEBRA Find the dividend.

11. $\blacksquare \div 3 = 178$

12. $\blacksquare \div 4 = 733$

13. $\blacksquare \div 7 = 410$

14. $\blacksquare \div 9 = 245 \text{ r}5$

15. $\blacksquare \div 6 = 637 \text{ r}1$

16. $\blacksquare \div 8 = 801 \text{ r}4$

Problem Solving and Test Prep

17. Leona's team scored a total of 854 points in 7 days. Pilar's team scored a total of 750 points in 6 days. Which team scored more points each day?

18. Vicki has 789 seeds to put into packets. If she puts 9 seeds in each packet, how many packets will Vicki need? Explain.

19. Seth pledged a total of \$3,336 over 6 months to a charity. How much will Seth donate each month?

A \$210

C \$336

B \$333

D \$556

20. Joe computed that he drove 1,890 miles a year roundtrip, to and from work. If his commute is 9 miles roundtrip, how many days did Joe work?

A 210

C 336

B 333

D 556

Factors and Multiples

Use arrays to find all of the factors of each product.

1. 12

2. 18

3. 30

4. 21

List the first ten multiples of each number.

5. 11

6. 4

7. 9

8. 7

Is 8 a factor of each number? Write *yes* or *no*.

9. 16

10. 35

11. 56

12. 96

Is 32 a multiple of each number? Write *yes* or *no*.

13. 1

14. 16

15. 13

16. 8

Problem Solving and Test Prep

17. Tammy wants to make a pattern of multiples of 2 that are also factors of 16. What will be the numbers in Tammy's pattern?

18. Which multiples of 4 are also factors of 36?

19. Which multiple of 7 is a factor of 49?

A 1

C 7

B 4

D 9

20. Fred is placing 16 cups on a table in equal rows. In what ways can he arrange these cups?

Prime and Composite Numbers

Make arrays to find the factors. Write *prime* or *composite* for each number.

1. 9

2. 17

3. 24

4. 36

5. 41

6. 2

7. 27

8. 57

Write *prime* or *composite* for each number.

9. 54

10. 37

11. 29

12. 40

13. 45

14. 33

15. 51

16. 88

17. 42

18. 11

19. 21

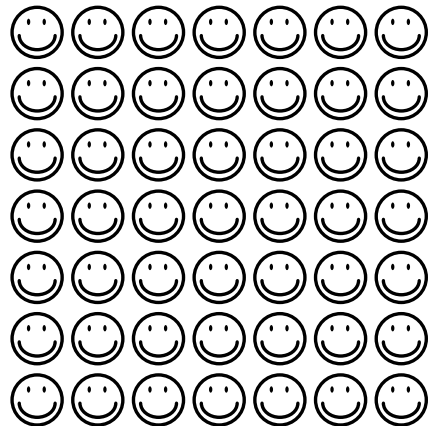
20. 67

Problem Solving and Test Prep

USE DATA For 21–22, use the array of stickers.

21. In what other ways could the stickers be arranged in equal rows?

22. Is 49 prime, or composite? Explain.



23. Which of the numbers below is a prime number?

A 20

C 24

B 21

D 29

24. Which of the numbers below is a composite number?

A 19

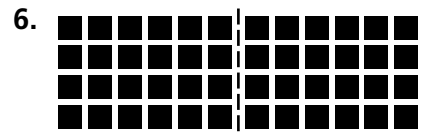
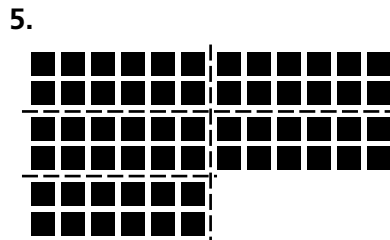
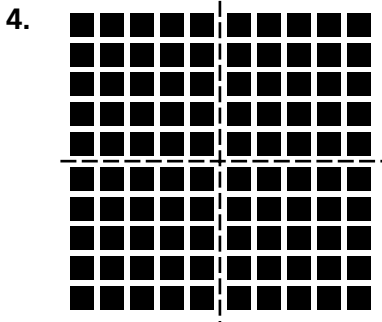
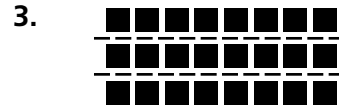
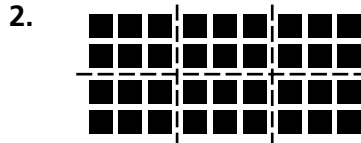
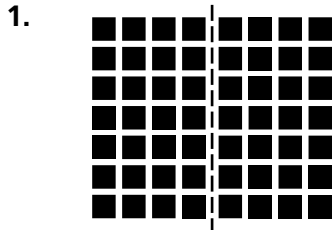
C 36

B 23

D 41

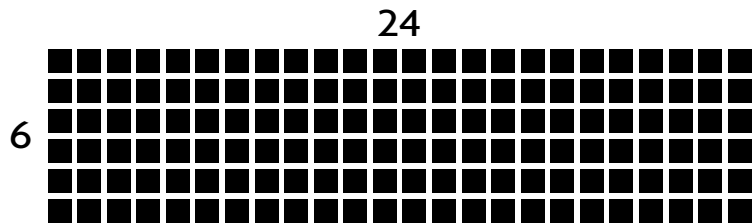
Factor Whole Numbers

Write a multiplication equation for the arrays shown.



For 7–8, use the array on the right.

7. What are two different ways to break apart the array?



8. Write the equation that the array shows. _____

Problem Solving and Test Prep

9. What are the factors of 12?

10. What are the factors of 16?

11. Which is *not* a way to break down the number 48 into factors?

- A $2 \times 4 \times 6$ C $3 \times 4 \times 4$
 B $3 \times 6 \times 5$ D 3×16

12. Can you make a square from the factors of 81? Explain.

Find Prime Factors

Make a factor tree to find the prime factors.

1.	8	2.	20	3.	35	4.	26	5.	33
----	---	----	----	----	----	----	----	----	----

6.	9	7.	54	8.	77	9.	81	10.	34
----	---	----	----	----	----	----	----	-----	----

Problem Solving and Test Prep

11. I am an odd number between 11 and 21. I am the product of two prime numbers. What number am I?
12. I am the product of two composite numbers, and am between 11 and 17. What are the prime numbers that I am made of?

13. Which of these represents another way to write the product 6×8 ?
14. Write all of the prime numbers greater than 20 but less than 35.

- A $2 \times 2 \times 2 \times 2 \times 3$
 B $2 \times 2 \times 3 \times 3 \times 4$
 C $3 \times 3 \times 8$
 D $2 \times 2 \times 3 \times 6$

Number Patterns

Find a rule. Then find the next two numbers in your pattern.

1. 108, 99, 90, 81, ,

2. 2, 4, 6, 8, ,

3. 2, 4, 8, 16, ,

4. 85, 88, 82, 85, 79, 82, ,

ALGEBRA Find a rule. Then find the missing numbers.

5. 2, 6, 10, , 18, 22, 26,

6. 545, 540, 535, , 525,

7. 600, 590, 592, 582, 584,

8. 400, 410, 409, , 418,

Use the rule to make a number pattern. Write the first four numbers in the pattern.

9. Rule: Add 7.

Start with 14.

10. Rule: Subtract 6.

Start with 72.

11. Rule: Add 2, subtract 5.

Start with 98.

12. Rule: Multiply by 2, subtract 1.

Start with 2.

Problem Solving and Test Prep

13. Look at the following number pattern. What is the next number if the rule is multiply by 2?

3, 6, 12,

14. Use the pattern 6, 9, 18, 21. What is a rule if the next number in this pattern is 42?

15. Which of the following describes a rule for this pattern? 3, 8, 5, 10, 7, 12

- A Add 3, subtract 5
- B Add 5, subtract 3
- C Add 5, subtract 2
- D Add 3, subtract 3

16. Which are the next two numbers in this pattern? 192, 96, 48, 24, ,

- A 10, 5
- B 12, 6
- C 6, 3
- D 5, 2

Problem Solving Workshop Strategy: Find a Pattern

Problem Solving Strategy Practice

Find a pattern to solve.

1. A 3 by 3 array of blocks is painted so that every other row, starting with row 1, begins with a red block, and the alternate rows begin with a black block. If this pattern continues, does the 12th row begin with red or black?

2. What are the next three shapes in the pattern likely to be?



3. The first day on a March calendar is Saturday. March includes 31 days. On which day of the week will March end?

4. How many blocks are needed to build a stairstep pattern that has a base of 10, a height of 10, and where each step is one block high and one block deep?

Mixed Strategy Practice

5. USE DATA If the pattern continues, how much would each 5-inch spike cost if you buy 10,000?

Ralph's Hardware Builder's Sale			
Spike	10	100	1,000
5-inch	10 cents ea.	8 cents ea.	6 cents ea.
10-inch	15 cents ea.	13 cents ea.	10 cents ea.
15-inch	20 cents ea.	16 cents ea.	12 cents ea.

6. Jules bought 5 pet turtles for \$2 each. How much money did Jules spend on turtles in all?

7. Dorothy bought gloves with a \$20 dollar bill. The gloves cost \$6. How much change did Dorothy receive?

Collect and Organize Data

For 1–2, use the Favorite Snacks table.

Tell whether each statement is true or false. Explain.

1. More students chose carrots than bananas.

2. More students chose carrots and celery than apples and bananas.

Students' Favorite Snacks	
Snack	Votes
Apple	12
Banana	7
Carrots	8
Celery	4

For 3–5, use the Sports Participation table.

3. How many more boys participate in volleyball than tennis?

4. How many more girls participate in golf than in tennis?

5. How many more boys and girls together play softball than volleyball?

Sports Participation		
Sport	Boys	Girls
Golf	12	19
Softball	18	17
Tennis	9	11
Volleyball	13	12

Problem Solving and Test Prep

USE DATA For 6–7, use the Sports Participation table above.

6. Which is the most popular sport for girls? for boys?

7. Who has the largest overall participation in sports: girls or boys?

8. How many people were surveyed?

- A 186
B 194
C 196
D 200

Favorite Sport	Votes
Golf	37
Softball	63
Tennis	52
Volleyball	44

- 9.

Favorite Pet					
Pet	Dog	Cat	Bird	Turtle	Fish
Votes					

How many people were surveyed?

- A 18 B 3 C 5 D 7

Make and Interpret Venn Diagrams

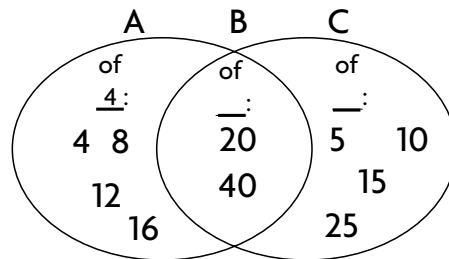
For 1–4, use the Multiples Venn diagram.

1. What labels should you use for sections B and C?

2. Why are the numbers 20 and 40 sorted in the B section of the diagram?

3. In which section would you sort the number 60? Explain.

Multiples



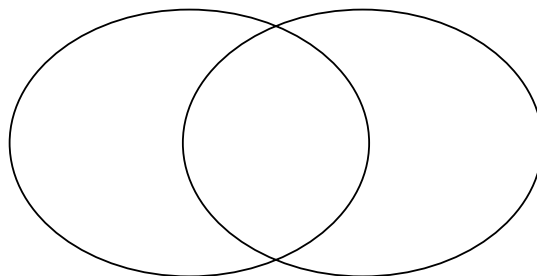
4. Reasoning If section A were multiples of 45 and section C were multiples of 71, would section B contain a number less than 100? Explain.

For 5–6, use the Breakfast Choices table.

5. Show the results in the Venn diagram at the right.

6. What data overlap? Explain.

Breakfast Choices	
Food	Student Names
Cereal	Jane, Mani, Liddy, Steve, Ana
Fruit	Ben, Cecee, Beth
Both	Dave, Raiza



Problem Solving and Test Prep

USE DATA For 7–8, use the Breakfast Choices table.

7. How many students chose either cereal or fruit?

8. What would have to change in order for there to be no overlapping data?

9. Look at the Multiples Venn diagram at the top of the page. Which number belongs in section C?

- A 22 C 204
B 28 D 250

10. Look at the Multiples Venn diagram at the top of the page. Which number belongs in section B?

- A 30 C 80
B 50 D 65

Find Mode and Median

Find the median and mode.

1.

Rainfall					
Month	Nov	Dec	Jan	Feb	Mar
Inches	1	2	7	9	2

Median _____

Mode _____

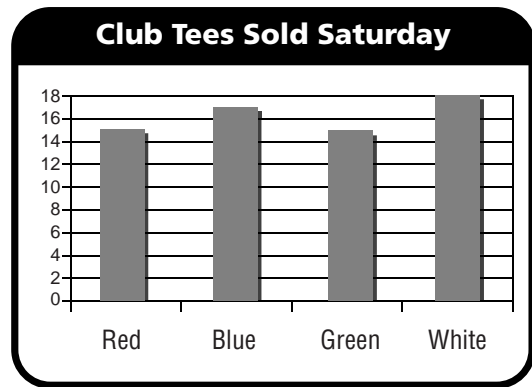
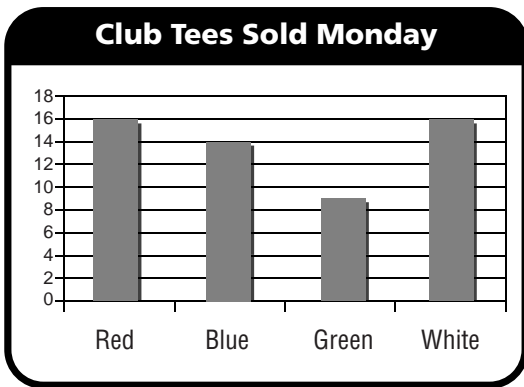
2.

Animals Fed						
Days	Mon	Tues	Wed	Thurs	Fri	Sat
Number	5	12	5	9	11	7

Median _____

Mode _____

USE DATA For 3–5, use the graphs.



- What is the difference between the median of tees sold on Monday and the median of tees sold on Saturday? _____
- What is the range for both days combined? _____
- How many more tees were sold on Saturday than on Monday?

Problem Solving and Test Prep

- What is the median of the following set of test scores?
4, 7, 10, 9, 9, 5, 7, 8, 8, 9.
 - 5
 - 8
 - 9
 - 10
- Look at the Club Tees Sold on Saturday from the bar graph above. What would be the mode if one more white tee was sold?
 - 9
 - 10
 - 15
 - 18

Read Line Plots

For 1–4, use the Tourist Souvenir Survey data.

- Use the data below to fill in the tally table and line plot.

Tourist Souvenir Survey

Question: How many souvenirs did you buy at the Space Shop while at Kennedy Space Center Visitor Complex?

Responses: 4, 3, 5, 3, 1, 6, 5, 2, 5, 1, 9, 6, 1, 2, 4, 6, 4, 2, 1, 2, 5, 3, 4, 1, 6

Tourist Souvenir-Buying Results	
Number of Souvenirs	Purchasers
1	
2	
3	
4	
5	
6	
7	
8	
9	

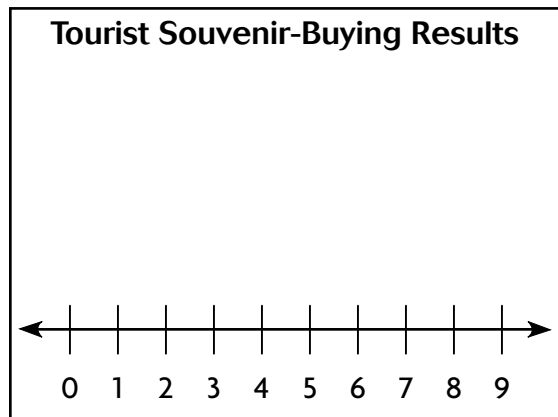
- Is there an outlier in the data? Explain.

- What is the range of souvenirs bought?

- How many souvenirs were purchased in all?

Problem Solving and Test Prep

For 5–8, use the line plot you made.



- If people who bought 4 souvenirs spent \$2 for each one, how much did all the people who bought 4 souvenirs spend in all?

- What does the outlier in the data suggest about souvenir buying?

- What is the median for the data collected on the souvenirs?

- A** 2 **C** 4
B 3 **D** 5

- What is the mode for the data collected on the souvenirs?

- A** 1 **C** 3
B 2 **D** 4

Choose a Reasonable Scale

For 1–2, choose 5, 10, or 100 as the most reasonable interval for each set of data. Explain your choice.

1. 35, 55, 77, 85, 20, 17

2. 125, 200, 150, 75, 277, 290

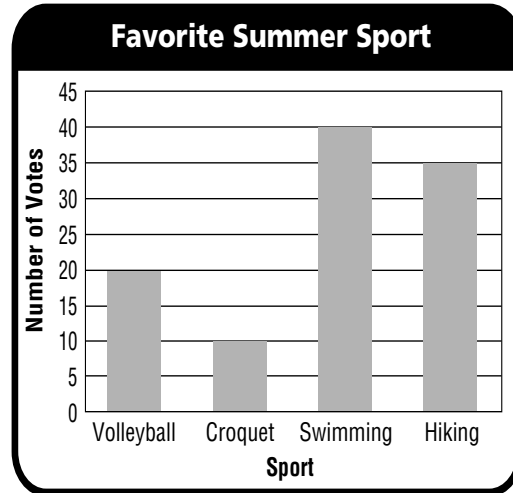
For 3–6, use the Favorite Summer Sport graph.

3. What are the scale and the interval used in the graph?

4. How would the length of the bars change if the interval were 10?

5. How many votes were cast?

6. How many more votes did swimming get than croquet and volleyball combined?



Problem Solving and Test Prep

USE DATA For 7–10, use the Favorite Winter Sport graph.

7. What is the least favorite winter sport?

8. How many fewer people voted for sledding than skiing and ice skating combined?



9. What is the interval on the Winter Sport graph?

- A 5 C 15
B 10 D 20

10. What is the scale of the Winter Sport graph?

- A 0–80 C 0–100
B 0–50 D 0–20

Problem Solving Workshop

Skill: Make Generalizations

Problem Solving Skill Practice

USE DATA For 1–3, use the weight range chart. Make a generalization.

Then solve the problem.

- Complete the sentences.

Known Information

The chart shows the healthy weight range for adults. Adults who are \square tall should weigh between \square and 184 pounds. Healthy adults who weigh between 139 and 174 pounds may be about \square tall. An adult who is 5'7" should weigh between \square and \square .

- Minimum weights increase in \square -pound increments.
- Maximum weights increase in \square -pound increments.

Height (ft, in)	Adult Weight Ranges (in pounds)	
	Minimum	Maximum
5'7"	127	159
5'8"	131	164
5'9"	135	169
5'10"	139	174
5'11"	143	179
6'0"	147	184

- Kosi is 5'9" tall. What is a healthy weight range for Kosi?

- Gwen is a healthy adult who weighs 135 pounds. According to the chart, what might be Gwen's range in height?

Mixed Applications

For 4–7, use the weight range chart.

- How much greater is the weight range of a healthy adult who is 6'0" tall than one who is 5'7"?
- Gino weighs 180 pounds. About how much more does Gino weigh than Tu who is at maximum weight for 5'9"?

- If the pattern continues, what will be the range of healthy weights for an adult who is 6'1" tall?
- Pose a Problem** Look at exercise 4. Change the numbers to make a new problem.

Interpret Bar Graphs

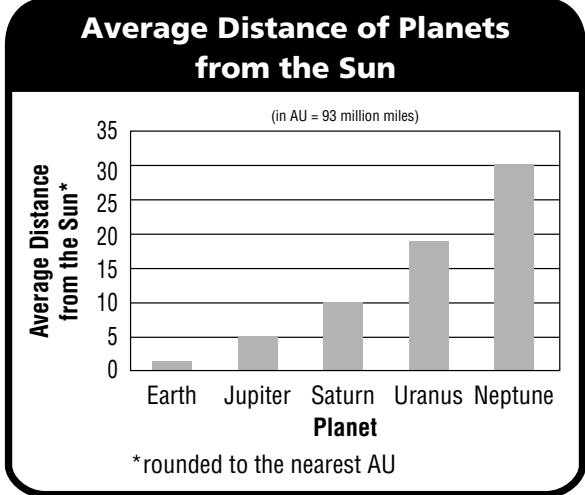
For 1–6, use the Distance of Planets bar graph.

1. An Astronomical Unit (AU) is the average distance between the Earth and the sun. Scientists use Astronomical Units to help represent other large distances. According to the data shown in the graph, what is the range of AU shown?

2. Which planet in the graph is farthest from the sun?

3. Which planet is 6 times farther away from the Sun than Jupiter?

5. List the names of the planets in the graph in order from the greatest average distance from the Sun to the least average distance from the Sun.



4. Which planet's distance from the Sun is the median of the data?

6. Reasoning Of the planets shown in the graph, which planet do you think is the coldest? Which planet do you think is the warmest? Why?

Problem Solving and Test Prep

USE DATA For 7–10, use the Distance of Planets bar graph above.

7. How many AU longer is Uranus' average distance from the Sun than Jupiter's average distance from the Sun?
8. How many AU shorter is Earth's average distance from the Sun than Saturn's average distance from the Sun?

9. How many AU is the average distance from the sun to the planet Uranus?
 A 5 C 19
 B 10 D 30
10. How many AU is the average distance from the Sun to Neptune?
 A 5 C 19
 B 10 D 30

Make Bar and Double-Bar Graphs

Use the data in the table to make two bar graphs.

Then make a double-bar graph. Use the space provided below.

1. **Average Rainfall in Portland, OK**

Average Rainfall in Boulder, CO

2. **Average Rainfall**

Average Rainfall (in inches)			
City	Jan	Feb	Mar
Portland, OR	6	5	5
Boulder, CO	1	1	2

For 3–6, use the graphs you made.

3. Which city gets the most rainfall from January through March?

4. During which month does Boulder get the most rainfall?

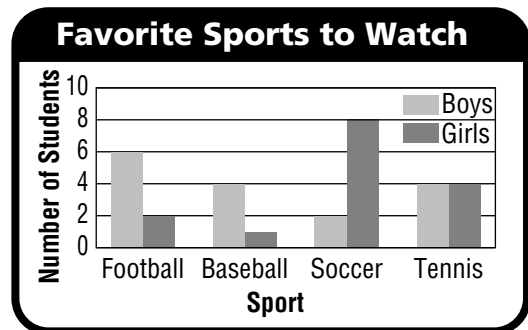
5. Which city has a greater range of inches of rainfall in the three months?

6. Compare the two cities. During which month is the difference in rainfall the greatest? How great?

For 7–8, use the Favorite Sports graph at the right.

7. What is the range of the data?

8. How many more girls than boys like soccer the most?



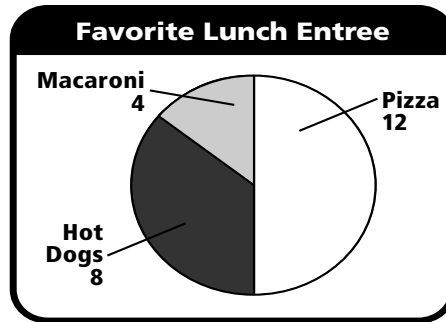
Interpret Circle Graphs

For 1–3, use the Favorite Lunch Entree graph.

- How many votes were counted?

- Which lunch has the most votes?

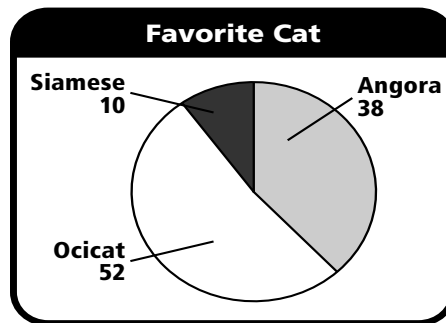
- How many more votes did pizza get than macaroni?



For 4–5, use the Favorite Cat graph.

- How many people voted for a Favorite Cat?

- Which cat is the favorite among voters?



Problem Solving and Test Prep

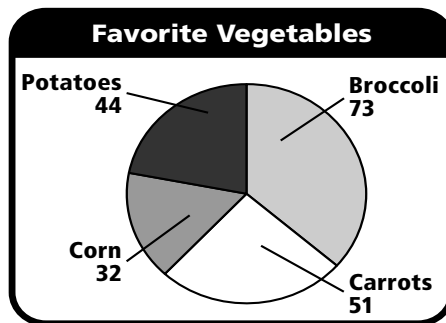
For 6–9, use the Favorite Vegetable graph.

- Which vegetable received the fewest votes?

- How many more people voted for carrots than potatoes?

- How many people voted in all?

- A 200
- B 150
- C 125
- D 100

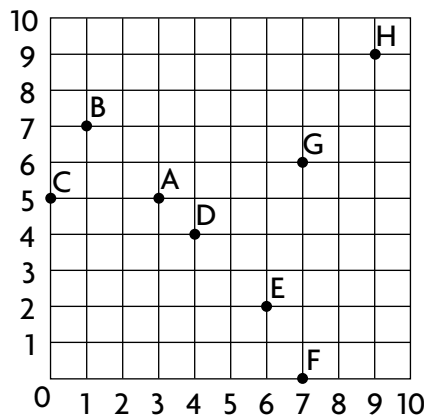


- Which is the most popular vegetable?

- A carrots
- B corn
- C broccoli
- D potatoes

ALGEBRA Graph Ordered Pairs

For 1–4, use the grid at the right. Write the ordered pair for each point.



1. C (■, ■) 2. G (■, ■)
 3. D (■, ■) 4. B (■, ■)

For 5–6, write the ordered pairs for each table.

Then use the grid on the right to graph the ordered pairs.

5.

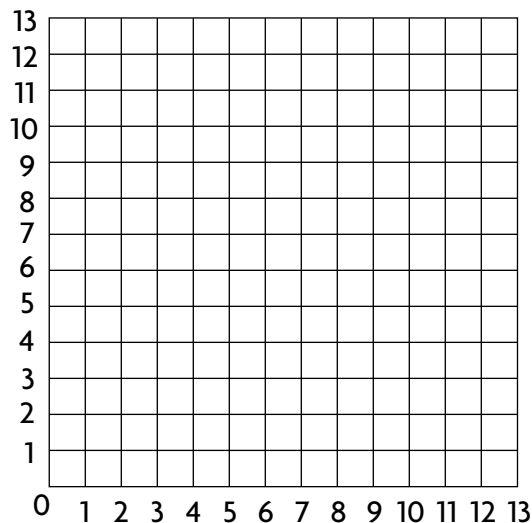
Stools	1	2	3	4
Legs	3	6	9	12

(■, ■), (■, ■), (■, ■), (■, ■)

6.

Section	3	4	5	6
Pages	7	8	9	10

(■, ■), (■, ■), (■, ■), (■, ■)



Problem Solving and Test Prep

7. Look at Exercise 6. Fabio is making a book in which the sections have increasing numbers of pages. How many pages will section 10 have?
8. Look at Exercise 5. Kip is making three-legged stools. If he has enough seats to make stools using 24 legs, how many stools can Kip make?

9. Use the coordinate grid at the top of the page. What is the ordered pair for point F?

- A (6, 2) C (3, 5)
 B (9, 9) D (7, 0)

10. Use the coordinate grid at the top of the page. What is the ordered pair for point A?

- A (6, 2) C (3, 5)
 B (9, 9) D (7, 0)

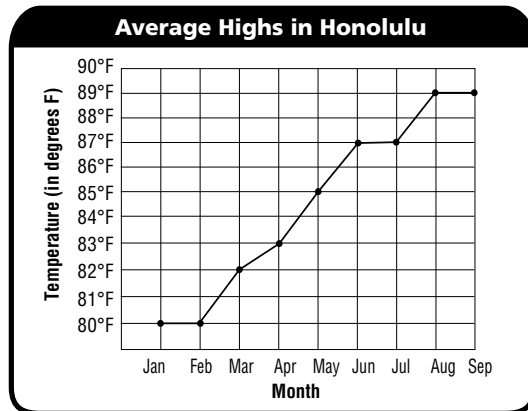
Interpret Line Graphs

For 1–3, use the Average Highs in Honolulu graph.

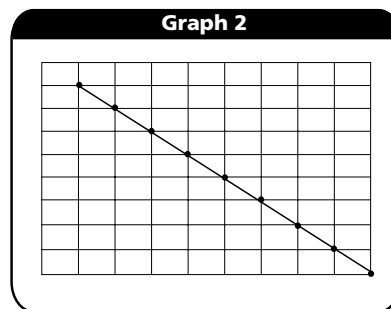
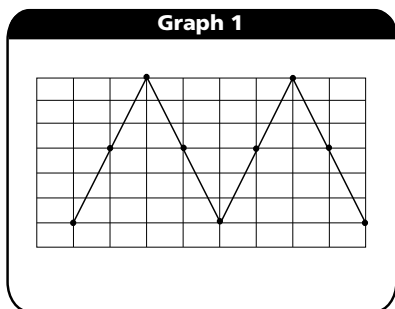
1. What is the highest average temperature in Honolulu?

2. During what months are the trends level?

3. What is the range of average high temperatures in Honolulu?



For 4–5, use Graph 1 and Graph 2. Explain your choice and write a label for the left side of each graph.



4. Which graph might show someone repeatedly going up and down stairs?

5. Which graph might show the draining of a bathtub filled with water?

Problem Solving and Test Prep

For 6–9, use Graph 1 and Graph 2.

6. Write a new sentence about what Graph 1 might show.

7. Write a new sentence about what Graph 2 might show.

8. Graph 1 shows that the data are following what trend?

A increasing	C staying the same
B decreasing	D none of these
9. Graph 2 shows that the data are following what trend?

A increasing	C staying the same
B decreasing	D none of these

Make Line Graphs

For 1–2, use the data below to make line graphs at the right.

1.

Bette's Bike-a-Thon				
Number of laps	20	40	60	80
Amount raised	\$25	\$50	\$75	\$100

2.

Gene's Knitting				
Number of rows	7	14	21	28
Number of hours	10	9	8	7

3. Look at your graph from Exercise 1. Suppose the trend continues. What amount will Bette raise if she bikes 100 laps?

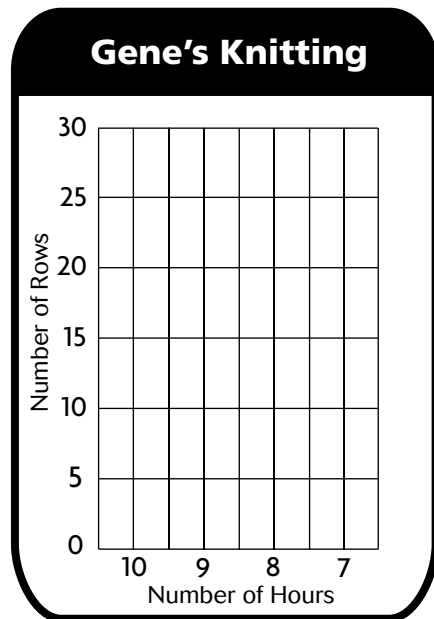
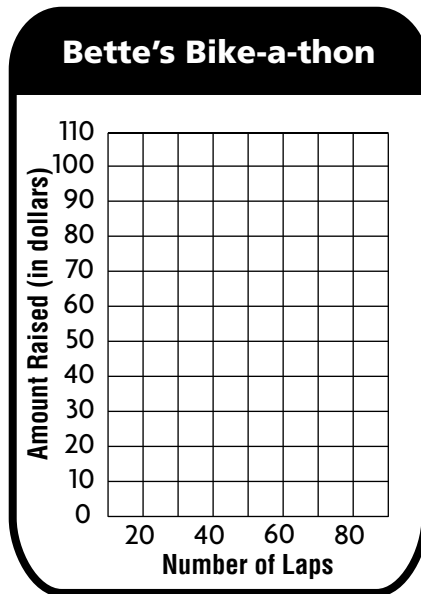
4. What would be a better interval to show the different amounts raised in Bette's Bike-a-Thon?

5. Look at your graph from Exercise 2. How many rows has Gene knitted so far in all?

6. How many hours has it taken Gene to knit all the rows so far?

7. **Reasoning** Explain what is happening to Gene's speed as he continues to knit.

8. By what interval does the time Gene spends knitting decrease?



Problem Solving Workshop Strategy: Make a Graph

Problem Solving Strategy Practice

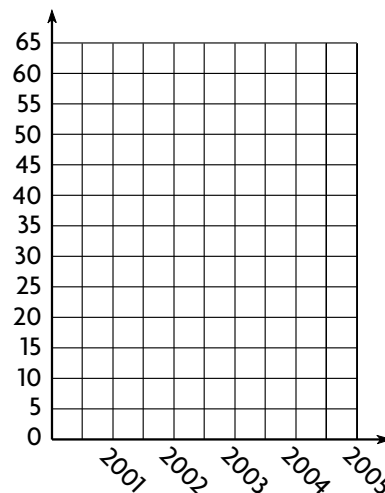
For 1–3, use the Tourist Spending table.

Tourist Spending in Florida	
Year	\$ in billions
2001	49
2002	50
2003	52
2004	57
2005	62

1. How can you make a visual display of the data? Use the space provided at the right and make either a line graph or bar graph to display the data. Label your data.

2. What trend in the data does your graph show?

3. What if you wanted to add that in 2000 visitors spent \$45 billion. Would that change the trend in the data ?



Mixed Strategy Practice

4. Look at the graph you made above. What is the range of the data?

6. In the first quarter of 2004, 11,800,000 visitors came to Florida by air and 9,800,000 came by other means of transportation. How many more visitors traveled by air than by other means of transportation?

5. **Write Math** Explain why you chose one graph type over the other.

7. Jeff, Sean, Ida, and Paul are in line to buy souvenirs. Neither Sean nor Paul are first. Jeff is second and Paul is ahead of Sean. In what order are they in line?

Choose an Appropriate Graph

For 1–6, choose the best type of graph or plot for the data. Explain your choice.

1. How Drew spends one afternoon

2. The amount of rainfall per month in a given town

3. Favorite toys chosen by cats and dogs in a daycare

4. Number of students who make As in three different grading periods

5.

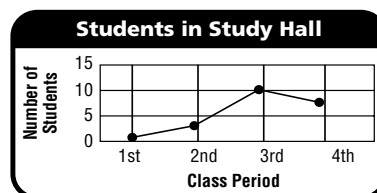
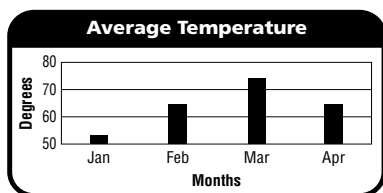
Mileage Traveled					
Miles	75	30	30	90	120
Day	Mon	Tues	Wed	Thurs	Fri

6.

Bird Wingspan			
Bird	Hummingbird	Crane	Goose
Inches	4	84	54

Problem Solving and Test Prep

For 7–8, use the line and bar graphs below.



7. Why is a bar graph not the best choice to show the average temperature over several months?

8. Why is a line graph not the best choice to show the number of students in study hall?

9. Which type of graph or plot would best display the numbers of four car models sold in a weekend?

- A bar graph C line graph
B circle graph D line plot

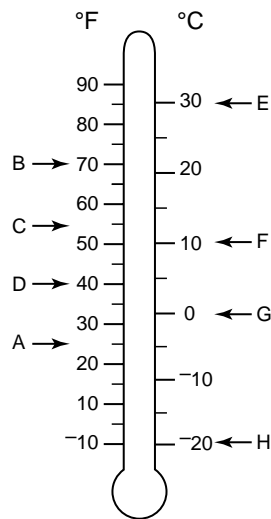
10. Which type of graph or plot would best display how many hours students in class spent on homework over 5 days?

- A bar graph C line graph
B circle graph D line plot

Temperature

Use the thermometer to find the temperature shown by each letter.

- | | | | |
|-------|-------|-------|-------|
| 1. A | 2. B | 3. C | 4. D |
| _____ | _____ | _____ | _____ |
| 5. E | 6. F | 7. G | 8. H |
| _____ | _____ | _____ | _____ |



Write the temperature. Then estimate to the nearest 5 degrees.

- | | | | |
|----|-------|-----|-------|
| 9. | | 10. | |
| | _____ | | _____ |

Use a thermometer to find the change in temperature.

- | | | | |
|-----------------|------------------|------------------|------------------|
| 11. 20°F to 5°F | 12. 13°F to 72°F | 13. -8°C to 35°C | 14. 63°C to 42°C |
| _____ | _____ | _____ | _____ |

Choose the better estimate.

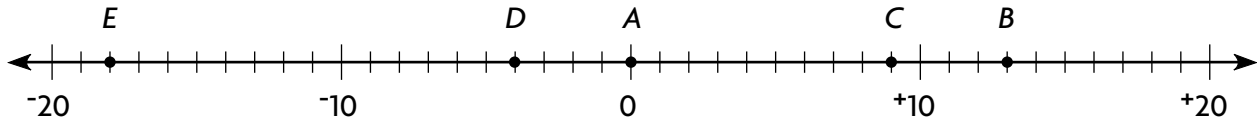
- | | | |
|---------------------------|---------------------------|----------------------------|
| 15. hot tea: 30°C or 95°C | 16. a lake: 50°F or 100°F | 17. ice cream: 3°C or 40°C |
| _____ | _____ | _____ |

Problem Solving and Test Prep

- | | |
|--|---|
| 18. Order from greatest to least:
100°C; -45°C; -12°C, 32°C | 19. Bruce measures the temperature outside one morning and it is 45°F. What is the temperature the next morning if the temperature increases by 20 degrees? |
| _____ | _____ |
| 20. The temperature dropped from 15°C to -8°C. What was the change in the temperature? | 21. The high temperature was 86° F and the low temperature was 22° lower. What was the low temperature? |
| _____ | A 22° F C 86° F |
| | B 64° F D 66° F |

Explore Negative Numbers

Name the number represented by each letter.



1. A _____ 2. B _____ 3. C _____ 4. D _____ 5. E _____

For 6–9, use the number line above. Compare using $<$ or $>$.

6. -6 -8 7. $+5$ $+11$ 8. $+3$ -4 9. -15 $+15$

Write a positive or negative number to represent each situation.

10. Fred spends all of his \$8 allowance. _____
 11. Mary buys 12 roses. _____
 12. Ruth wins the game by 15 points. _____
 13. Sam and Saya eat the last 7 apples. _____

ALGEBRA Write the missing numbers to complete a possible pattern.

14. $+12, +10, +8, +6, +4, +2, \square, \square, \square$
 15. $+9, +7, +5, +3, +1, -1, \square, \square, \square$

Problem Solving and Test Prep

16. Hans answers 10 questions right on the test. Is this a positive or negative number?

17. Martin loses five points to Marci. Is this a positive or negative situation for Marci? For Martin?

18. Order from least to greatest:
 $+5, -2, +3, -6$
A $-2, +3, +5, -6$
B $+3, +5, -2, -6$
C $-2, -6, +3, +5$
D $-6, -2, +3, +5$
19. Use the number line above to find which number sentence is False.
A $+6 < +1$
B $-1 > -4$
C $-1 < +4$
D $+6 > -4$

Problem Solving Workshop Strategy:

Act It Out

Practice Solving Strategy Practice

Act it out to solve.

- Sally wants to go swimming this afternoon if the temperature is above 85°F . This morning the temperature was 92°F . By noon, it was 76°F . Did Sally go swimming? If not, how many degrees too cool was it?

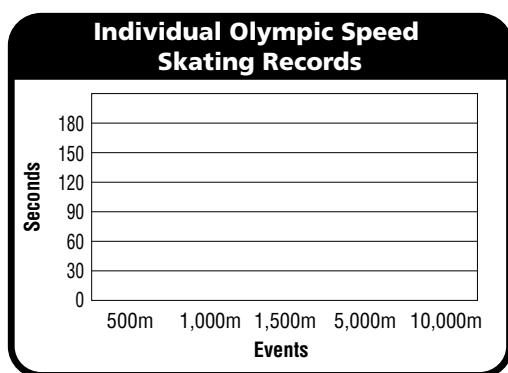
- The record high in Fresno, California, in August was 112°F on August 13, 1996. The record low was 49°F on August 30, 1966. What is the difference in temperature between the two extremes?

- Rena lines up four model race cars. The red one is ahead of the green one. The blue one is first. The yellow one is directly behind the red one. What color race car is last?

- Jim leaves home with \$40. At the mall, he bought goggles for \$9.98, swimming trunks for \$19.95, and lunch for \$8.45. How much money did Jim have left after shopping?

Mixed Strategy Practice

- Make a bar graph that shows short-track speed records.



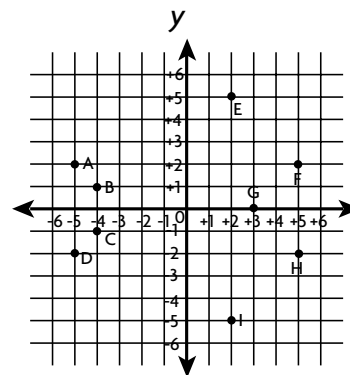
Individual Olympic Speed Skating Records (Rounded Times)		
Event	Long-track	Short-track
500 m	34 sec	42 sec
1,000 m	1 min 7 sec	1 min 27 sec
1,500 m	1 min 44 sec	2 min 16 sec
5,000 m	6 min 15 sec	
10,000 m	12 min 59 sec	

- A skater can run 1,000 meters in 1 minute 4 seconds. How long would it take the skater to run 5,000 meters?

- Willa measures the temperature on Monday. By Wednesday, it had increased to 13°C . The temperature changed 21°C . What was the temperature on Monday?

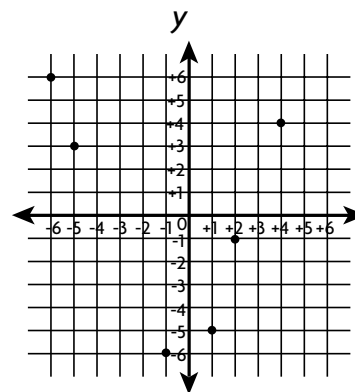
Use a Coordinate Plane

Write the point for each ordered pair on the coordinate plane at the right.



1. $(+2, +5) =$ _____
2. $(-4, -1) =$ _____
3. $(-5, +2) =$ _____
4. $(+3, 0) =$ _____
5. $(+5, +2) =$ _____
6. $(+5, -2) =$ _____

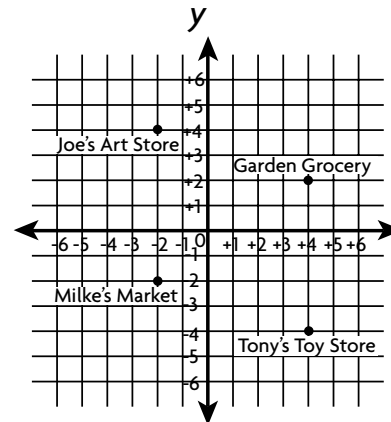
Use the grid at the right. Graph each point and label it using the ordered pair.



7. $(+4, +4)$
8. $(+2, -1)$
9. $(-6, +6)$
10. $(+1, -5)$
11. $(-5, +3)$
12. $(-1, -6)$
13. What polygon is formed by the points: $(3, 3)$, $(1, 1)$, $(6, 1)$, and $(5, 3)$?

Problem Solving and Test Prep

For 14–15, use the map at the right.



14. Kevin leaves Garden Grocery. He walks 6 units left and 2 units up. What store does Kevin go to?
15. Jill leaves Tony's Toy Store to go to Mike's Market. Describe Jill's path.

16. How many units above the origin is the point $(4, 7)$?

A	11	C	4
B	7	D	3
17. Which of the coordinates in the ordered pairs $(8, 5)$ and $(4, 2)$ are on the x -axis?

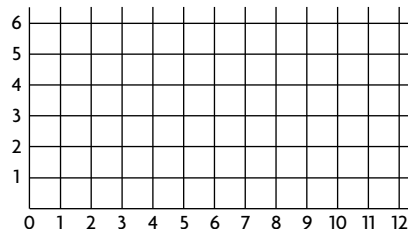
A	8 and 4	C	4 and 5
B	5 and 2	D	8 and 2

Length on a Coordinate Plane

Graph the ordered pairs on the grid at the right and connect the points.

Find the length of each line segment.

1. $(7, 2)$ and $(7, 6)$ 2. $(10, 1)$ and $(10, 2)$



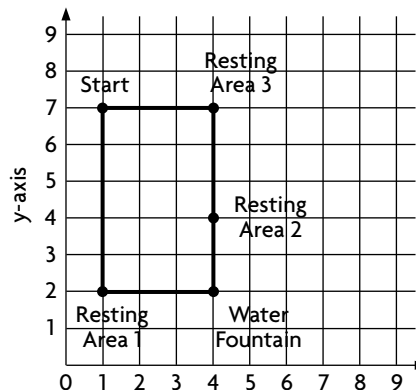
Find the length of each line segment.

3. $(2, 1)$ and $(2, 6)$ 4. $(1, 3)$ and $(5, 3)$ 5. $(4, 1)$ and $(4, 3)$

Problem Solving and Test Prep

6. Look at the map at the right. Gil and Zelda bike from Start through Resting Area 1 to the water fountain. Gil continues to Resting Area 3. How much farther does Gil bike than Zelda?

Pearson Park Bike Path
Each unit = 1 kilometer

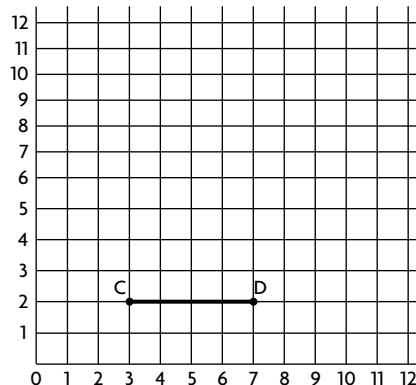


7. Look at the graph at the right. How can you find the number of units from point *C* to point *D*?

- A** add: $2 + 7$ **C** subtract: $7 - 3$
B add: $3 + 7$ **D** subtract: $7 - 2$

8. Look at the graph at the right. What is the length of the line segment joining point *C* and point *D*?

- A** 4 units **C** 3 units
B 2 units **D** 5 units



Point *C* is at $(3, 2)$. Point *D* is at $(7, 2)$

Use an Equation

Use the equation to complete each function table.

1. $y = 2x + 4$

Input, x	1	2	3	4
Output, y	■	■	■	■

2. $y = (2x - 3) + 6$

Input, x	2	4	6	8
Output, y	■	■	■	■

3. $y = 3x - 4$

Input, x	3	6	9	12
Output, y	■	■	■	■

4. $y = (x - 5) + 6$

Input, x	5	10	15	20
Output, y	■	■	■	■

Does the ordered pair make the equation $y = 5x + 3$ true?

Write *yes* or *no*.

5. (1, 8)

6. (10, 43)

7. (3, 9)

8. (4, 23)

9. (10, 53)

10. (6, 33)

11. (2, 7)

12. (5, 28)

Problem Solving and Test Prep

For 13–14, use the table.

13. How much does it cost to rent a sandcastle kit and a towel for 1, 2, or 3 hours?

14. Does it cost more to rent a towel and umbrella for 3 hours or a sandcastle kit and fins for 2 hours?

BEACH-RENTALS	
HOURLY	
SANDCASTLE KIT	... \$8
TOWEL	... \$3
UMBRELLA	... \$5
DAILY	
FINS	... \$2

15. What is the value of y if $x = 3$ in the equation $y = 2x - 2$?

A 8

C 4

B 6

D 2

16. The difference of $x - y$ equals 4. If $x = 18$, what equation can be used to find the value of y ?

A $18 - y = 4$

C $4 - y = 18$

B $18 + y = 4$

D $y = 4 \times 18$

Graph Relationships

Complete each table.

Then graph the equation on the coordinate grid.

1. $y = 2x$

Input, x	5	6	7	8	9
Output, y	■	■	■	■	■

2. $y = 2x + 3$

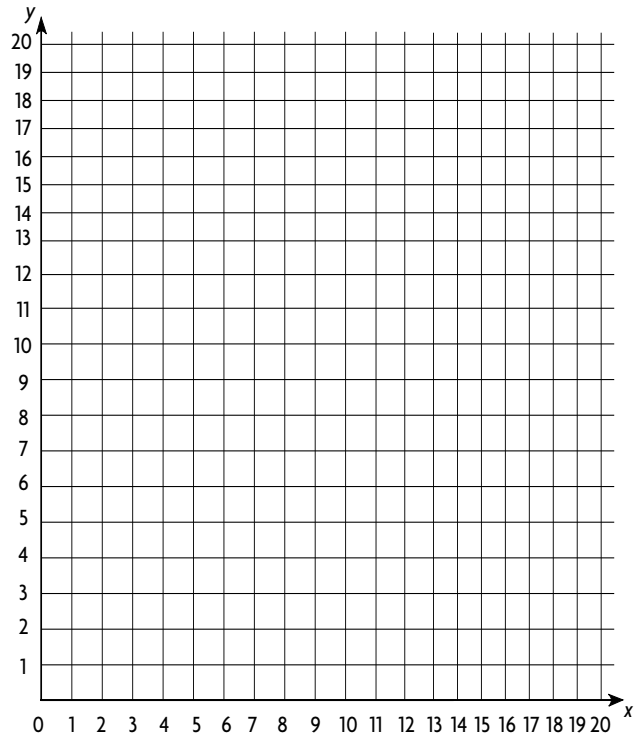
Input, x	2	3	4	5	6
Output, y	■	■	■	■	■

3. $y = 2x - 4$

Input, x	2	3	4	5	6
Output, y	■	■	■	■	■

4. $y = x \div 2$

Input, x	18	14	10	6	2
Output, y	■	■	■	■	■



Problem Solving and Test Prep

For 5–6, use the table.

5. Write an equation to show the distance that Matt can ride in 3 hours. Then solve.

$$\text{distance } (d) = \text{rate } (r) \times \text{time } (t)$$

6. Make a table to show the distance Carl can bike in 3, 4, 5, 6, or 7 hours.

Time	■	■	■	■	■
Rate	■	■	■	■	■

Biking Speeds	
Student	Miles per hour (r)
Jo	6
Matt	8
Carl	12

7. Darla plotted a graph of $y = x - 6$. Which could be the coordinates of a point on his graph?

- A (2, 5) C (8, 10)
 B (7, 1) D (7, 13)

8. Jim plotted a graph of $y = 2x - 15$. Which could be the coordinates of a point on his graph?

- A (8, 31) C (14, 18)
 B (24, 30) D (15, 15)

Identify Linear Relationships

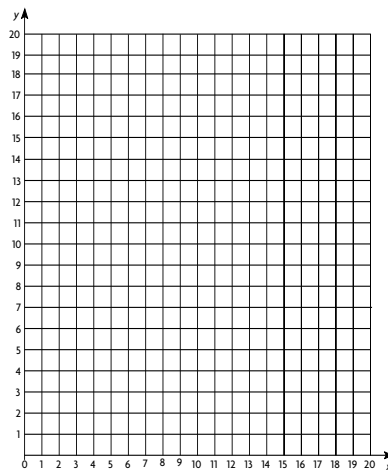
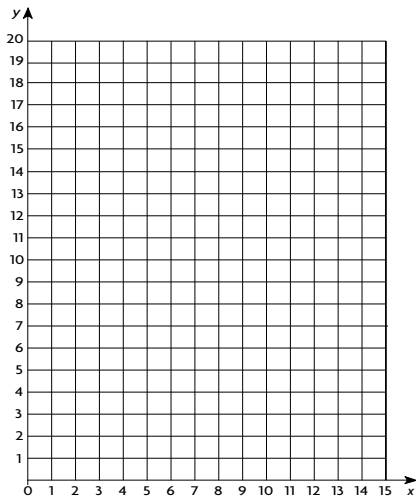
Write a rule. Graph the ordered pairs.

1.

Input, x	1	2	3	4	5
Output, y	11	12	13	14	15

2.

Input, x	20	15	10	5
Output, y	15	10	5	0



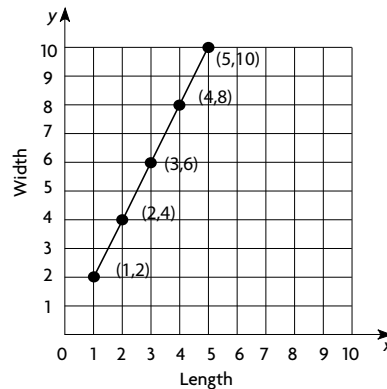
3. In Exercise 1, what will the ordered pair be if x is 10?

4. In Exercise 2, what will the ordered pair be if x is 30?

Problem Solving and Test Prep

USE DATA For 5–7, use the graph.

5. The graph shows the relationship between length and width. How is the length related to the width?



6. What would the length be if the width were 30?

- A 12 C 14
- B 13 D 15

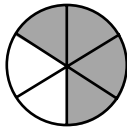
7. What would the width be if the length were 10?

- A 20 C 10
- B 15 D 5

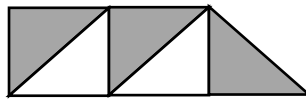
Read and Write Fractions

Write a fraction for the shaded part. Write a fraction for the unshaded part.

1.



2.

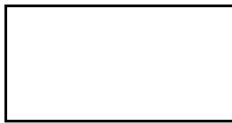
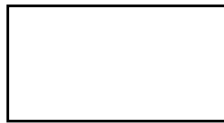
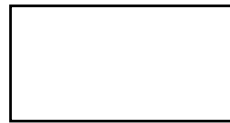
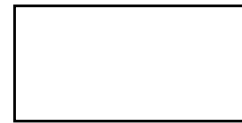


3.



Draw a picture and shade part of it to show the fraction.

Write a fraction for the unshaded part.

4. $\frac{5}{6}$ 5. $\frac{4}{10}$ 6. $\frac{3}{7}$ 7. $\frac{3}{5}$ 

Write the fraction for each.

8. one eighth

9. seven tenths

10. four out of five

11. two divided by three

Problem Solving and Test Prep

12. Angela has 5 dollars to spend on lunch. She spends 1 dollar on a soda, 3 dollars on a hot dog, and 1 dollar on a bag of pretzels. What fraction of Angela's money does she spend on a hot dog?

13. There are 9 houses on Zach's block. 4 of them are red brick and the rest are gray brick. What fraction of the houses on Zach's block are gray brick?

14. Three friends cut a pizza into eight equal parts. The friends eat 3 pieces. What fraction of their pizza is left?

A $\frac{1}{8}$

C $\frac{3}{5}$

B $\frac{3}{8}$

D $\frac{5}{8}$

15. Melissa buys 3 apples, 4 pears, and 2 bananas from a fruit stand. What fraction of Melissa's fruit are pears?

A $\frac{3}{9}$

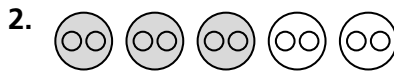
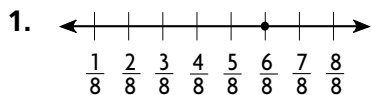
C $\frac{2}{9}$

B $\frac{4}{9}$

D $\frac{9}{9}$

Model Equivalent Fractions

Write two equivalent fractions for each model.



Write two equivalent fractions for each.

4. $\frac{1}{5}$ _____

5. $\frac{2}{3}$ _____

6. $\frac{3}{12}$ _____

7. $\frac{6}{8}$ _____

Tell whether the fractions are equivalent. Write *yes* or *no*.

8. $\frac{2}{9}$, $\frac{4}{16}$ _____

9. $\frac{2}{6}$, $\frac{8}{24}$ _____

10. $\frac{1}{7}$, $\frac{2}{14}$ _____

11. $\frac{6}{12}$, $\frac{2}{3}$ _____

Tell whether the fraction is in simplest form. If not, write it in simplest form.

12. $\frac{12}{16}$ _____

13. $\frac{5}{9}$ _____

14. $\frac{18}{20}$ _____

15. $\frac{3}{14}$ _____

ALGEBRA Find the missing numerator or denominator.

16. $\frac{2}{8} = \frac{\blacksquare}{24}$

17. $\frac{6}{16} = \frac{\blacksquare}{8}$

18. $\frac{7}{9} = \frac{28}{\blacksquare}$

19. $\frac{2}{5} = \frac{20}{\blacksquare}$

Problem Solving and Test Prep

20. Sheryl's cat had a litter of kittens. 3 are white and 6 are gray. What fraction of Sheryl's cat's kittens are white? Write this amount in simplest form.

21. Mario ate 4 hot dogs. 1 of them had mustard on it and the rest were plain. What fraction of Mario's hot dogs were plain? Write an equivalent fraction for this amount.

22. Which fraction is equivalent to $\frac{2}{5}$?

A $\frac{3}{6}$

C $\frac{4}{10}$

B $\frac{2}{8}$

D $\frac{5}{15}$

23. What is $\frac{15}{40}$ in simplest form?

A $\frac{1}{4}$

C $\frac{3}{8}$

B $\frac{5}{5}$

D $\frac{1}{3}$

Compare Fractions

Model each fraction to compare. Write $<$, $>$, or $=$ for each \bullet .

1. $\frac{6}{9} \bullet \frac{8}{9}$

2. $\frac{4}{5} \bullet \frac{2}{3}$

3. $\frac{1}{5} \bullet \frac{1}{8}$

4. $\frac{2}{6} \bullet \frac{1}{3}$

5. $\frac{2}{4} \bullet \frac{3}{5}$

6. $\frac{3}{8} \bullet \frac{5}{8}$

7. $\frac{3}{5} \bullet \frac{3}{4}$

8. $\frac{1}{3} \bullet \frac{5}{8}$

9. $\frac{3}{8} \bullet \frac{3}{4}$

10. $\frac{1}{2} \bullet \frac{1}{3}$

11. $\frac{5}{6} \bullet \frac{5}{8}$

12. $\frac{3}{8} \bullet \frac{4}{8}$

Use number lines to compare.

13. $\frac{3}{5} \bullet \frac{3}{4}$

14. $\frac{5}{9} \bullet \frac{4}{8}$

15. $\frac{4}{10} \bullet \frac{2}{5}$

16. $\frac{3}{10} \bullet \frac{3}{8}$

17. $\frac{4}{12} \bullet \frac{1}{5}$

18. $\frac{4}{16} \bullet \frac{6}{12}$

19. $\frac{1}{5} \bullet \frac{3}{10}$

20. $\frac{2}{3} \bullet \frac{6}{9}$

21. $\frac{3}{4} \bullet \frac{6}{8}$

22. $\frac{2}{6} \bullet \frac{2}{9}$

23. $\frac{5}{8} \bullet \frac{1}{3}$

24. $\frac{2}{4} \bullet \frac{4}{10}$

25. $\frac{3}{7} \bullet \frac{4}{7}$

26. $\frac{2}{6} \bullet \frac{2}{8}$

27. $\frac{5}{9} \bullet \frac{9}{12}$

Order Fractions

Order the fractions from least to greatest.

1. $\frac{1}{3}, \frac{1}{8}, \frac{1}{6}$

2. $\frac{4}{5}, \frac{3}{5}, \frac{5}{8}$

3. $\frac{4}{10}, \frac{4}{12}, \frac{4}{8}$

4. $\frac{3}{7}, \frac{5}{10}, \frac{5}{8}$

5. $\frac{1}{9}, \frac{4}{5}, \frac{2}{3}$

6. $\frac{5}{6}, \frac{6}{10}, \frac{1}{12}$

7. $\frac{5}{12}, \frac{2}{4}, \frac{4}{6}$

8. $\frac{3}{9}, \frac{2}{10}, \frac{5}{6}$

Order the fractions from greatest to least.

9. $\frac{1}{5}, \frac{1}{4}, \frac{1}{8}$

10. $\frac{4}{9}, \frac{4}{5}, \frac{2}{3}$

11. $\frac{3}{4}, \frac{3}{8}, \frac{3}{5}$

12. $\frac{2}{10}, \frac{2}{5}, \frac{3}{12}$

13. $\frac{5}{12}, \frac{3}{9}, \frac{3}{6}$

14. $\frac{7}{12}, \frac{3}{4}, \frac{2}{4}$

15. $\frac{5}{8}, \frac{4}{6}, \frac{1}{10}$

16. $\frac{3}{5}, \frac{6}{12}, \frac{2}{10}$

Problem Solving and Test Prep

17. Matt made a fruit salad that included $\frac{3}{4}$ cup of strawberries, $\frac{5}{8}$ cup of grapes, and $\frac{2}{4}$ cup of blueberries. Order the amounts from least to greatest.

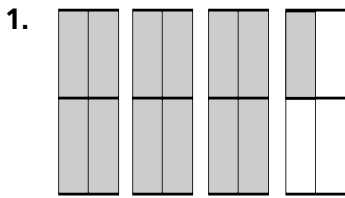
18. Carolyn walks $\frac{4}{6}$ mile home from school. John walks $\frac{3}{8}$ mile home from school, and Corey walks $\frac{6}{12}$ mile home from school. Order their distances from greatest to least.

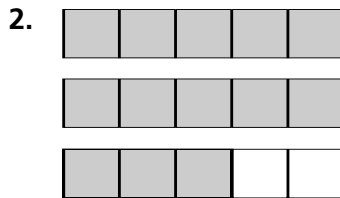
19. Pat spent $\frac{3}{9}$ of her day shopping, $\frac{2}{10}$ of her day exercising, and $\frac{2}{5}$ of her day studying. Which activity took the longest?

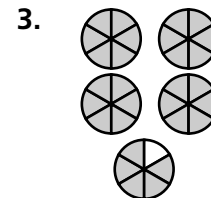
20. In a jar of marbles, there are $\frac{3}{10}$ red marbles, $\frac{1}{5}$ blue marbles, and $\frac{2}{15}$ white marbles. Of which color are there the least amount of marbles?

Read and Write Mixed Numbers

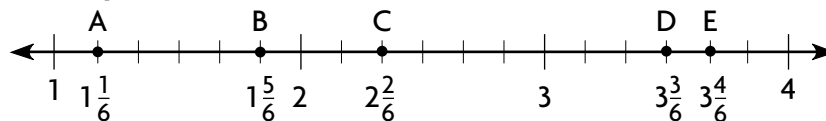
Write a mixed number for each picture.







For 4–8, use the number line to write the letter each mixed number or fraction represents.



4. $\frac{14}{6}$ _____ 5. $3\frac{4}{6}$ _____ 6. $\frac{11}{6}$ _____ 7. $3\frac{3}{6}$ _____ 8. $\frac{7}{6}$ _____

Rename each fraction as a mixed number and each mixed number as a fraction. You may wish to draw a picture.

9. $5\frac{3}{4}$ _____ 10. $3\frac{2}{10}$ _____ 11. $\frac{38}{6}$ _____ 12. $\frac{23}{3}$ _____ 13. $2\frac{3}{8}$ _____

Problem Solving and Test Prep

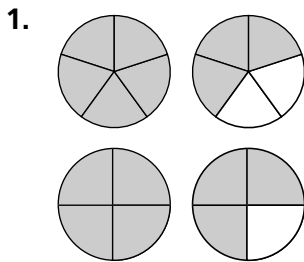
14. Ned cuts a board that is $5\frac{1}{4}$ inches long. Draw a number line and locate $5\frac{1}{4}$ inches.
15. Julia goes for a bike ride for $1\frac{2}{3}$ hours. Draw a number line to represent the length of time.



16. Denzel makes a cake with $2\frac{2}{3}$ cups of flour. Which shows the mixed number as a fraction?
- A $\frac{4}{3}$
 B $\frac{8}{3}$
 C $\frac{6}{3}$
 D $\frac{10}{3}$
17. Ashley serves $3\frac{5}{8}$ trays of muffins. How many muffins does Ashley serve if each muffin is $\frac{1}{8}$ of a tray?
- A 29
 B 15
 C 24
 D 19

Compare and Order Mixed Numbers

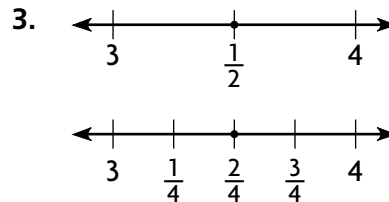
Compare the mixed numbers. Use $<$, $>$, or $=$.



$1\frac{3}{5} \bullet 1\frac{3}{4}$



$1\frac{1}{3} \bullet 1\frac{5}{8}$



$3\frac{1}{2} \bullet 3\frac{2}{4}$

Order the mixed numbers from least to greatest.

4. $2\frac{1}{4}, 4\frac{3}{8}, 2\frac{3}{4}$

5. $5\frac{4}{9}, 5\frac{2}{3}, 5\frac{1}{8}$

6. $3\frac{4}{5}, 3\frac{2}{10}, 3\frac{5}{12}$

7. $6\frac{3}{6}, 6\frac{3}{4}, 6\frac{1}{3}$

8. $1\frac{3}{8}, 1\frac{3}{5}, 1\frac{3}{9}$

9. $7\frac{1}{4}, 7\frac{1}{7}, 7\frac{3}{5}$

Problem Solving and Test Prep

USE DATA For 10–11, use the table.

10. Which ingredient shows the largest amount?

11. Which ingredient requires $\frac{5}{3}$ cups?

Recipe for Trail Mix	
Ingredient	Amount
Corn chips	2 cups
Peanuts	$1\frac{1}{3}$ cups
Raisins	$1\frac{2}{3}$ cups

12. Jamal plays soccer for $\frac{12}{5}$ hours. Write the amount of time Jamal plays soccer as a mixed number.

13. Eddie is at an amusement park and wants to find the ride with the shortest wait. The waits for four rides are shown. Which wait is the shortest?

- A $1\frac{4}{5}$ C $1\frac{1}{2}$
 B $1\frac{1}{5}$ D $1\frac{2}{3}$

Problem Solving Workshop Skill: Sequence Information

Problem Solving Skill Practice

Sequence the information to solve.

1. Ben practices piano for $1\frac{2}{3}$ hours. Charlene practices flute for $\frac{3}{4}$ hour. Walter practices drums for $1\frac{1}{2}$ hours. Who practices for the most time? the least?

2. Sara cuts 3 lengths of ribbon. The first piece is $4\frac{5}{8}$ inches long. The second piece is $3\frac{1}{4}$ inches long. The third piece is $4\frac{1}{2}$ inches long. Which ribbon piece is the longest? the shortest?

3. Joyce takes a nap for $\frac{8}{5}$ hours. Rex naps for $\frac{5}{3}$ hours. Maya naps for $\frac{5}{4}$ hours. Who takes the longest nap? the shortest?

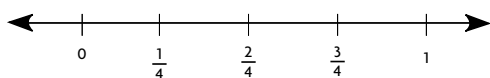
4. Betsy, Latisha, and Ramon eat a pizza pie. Betsy eats $\frac{2}{8}$ of the pie. Latisha eats $\frac{1}{4}$ of the pie. Ramon eats $\frac{3}{8}$ of the pie. Which two children eat the same amount of pie?

Mixed Applications

5. Raoul and Marty bake 12 muffins. Raoul brings home $\frac{5}{12}$ of the muffins. Marty brings home $\frac{1}{3}$ of the muffins. Draw number lines to show who brought home more muffins.

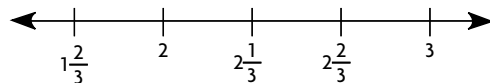
6. **Pose a Problem** Suppose that the number of muffins Marty brought home was changed to $\frac{1}{2}$. Write a new problem using this information.

7. Zach makes this number line:



Between which two fractions would you place $\frac{3}{8}$?

8. Rina makes this number line:

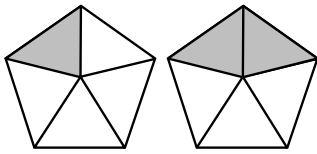


Between which two numbers would you place $2\frac{5}{6}$?

Model Addition

Find the sum.

1.



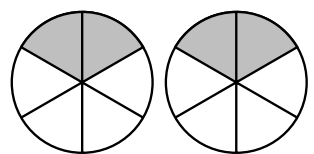
$$\frac{1}{5} + \frac{2}{5} = \underline{\hspace{2cm}}$$

2.



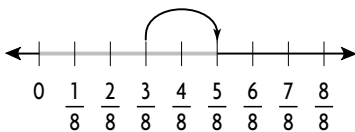
$$\frac{2}{4} + \frac{1}{4} = \underline{\hspace{2cm}}$$

3.



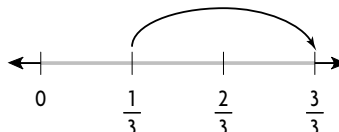
$$\frac{2}{6} + \frac{2}{6} = \underline{\hspace{2cm}}$$

4.



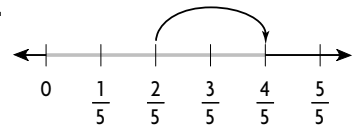
$$\frac{3}{8} + \frac{2}{8} = \underline{\hspace{2cm}}$$

5.



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

6.



$$\frac{2}{5} + \frac{2}{5} = \underline{\hspace{2cm}}$$

Model the sum. Record your answer.

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

8. $\frac{4}{9} + \frac{2}{9} = \underline{\hspace{2cm}}$

9. $\frac{2}{10} + \frac{4}{10} = \underline{\hspace{2cm}}$

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

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

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

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

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

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

16. $\frac{2}{9} + \frac{3}{9} = \underline{\hspace{2cm}}$

17. $\frac{6}{12} + \frac{2}{12} = \underline{\hspace{2cm}}$

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

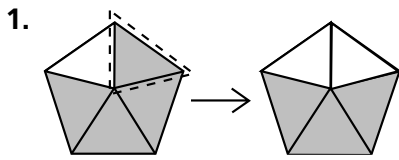
19. $\frac{2}{3} + \frac{1}{3} = \underline{\hspace{2cm}}$

20. $\frac{6}{9} + \frac{4}{9} = \underline{\hspace{2cm}}$

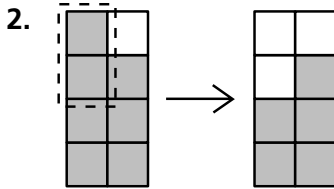
21. $\frac{1}{8} + \frac{6}{8} = \underline{\hspace{2cm}}$

Model Subtraction

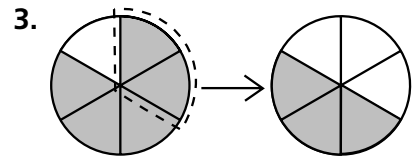
Find the difference.



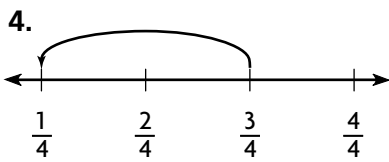
$$\frac{4}{5} - \frac{1}{5} = \underline{\hspace{2cm}}$$



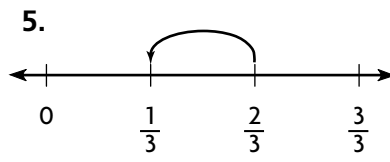
$$\frac{7}{8} - \frac{2}{8} = \underline{\hspace{2cm}}$$



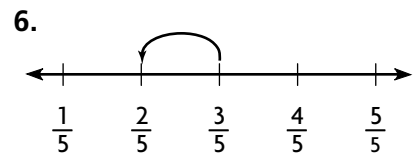
$$\frac{5}{6} - \frac{2}{6} = \underline{\hspace{2cm}}$$



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



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



$$\frac{3}{5} - \frac{1}{5} = \underline{\hspace{2cm}}$$

Model the difference. Record your answer.

7. $\frac{8}{10} - \frac{3}{10} = \underline{\hspace{2cm}}$

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

9. $\frac{10}{12} - \frac{5}{12} = \underline{\hspace{2cm}}$

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

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

12. $\frac{8}{9} - \frac{5}{9} = \underline{\hspace{2cm}}$

13. $\frac{7}{8} - \frac{5}{8} = \underline{\hspace{2cm}}$

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

15. $\frac{4}{6} - \frac{1}{6} = \underline{\hspace{2cm}}$

16. $\frac{8}{9} - \frac{3}{9} = \underline{\hspace{2cm}}$

17. $\frac{8}{12} - \frac{2}{12} = \underline{\hspace{2cm}}$

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

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

20. $\frac{6}{9} - \frac{4}{9} = \underline{\hspace{2cm}}$

21. $\frac{7}{9} - \frac{6}{9} = \underline{\hspace{2cm}}$

Record Addition and Subtraction

Find and record the sum or difference.

$$\begin{array}{r} 1. \quad \frac{7}{8} \\ + \frac{3}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad \frac{5}{6} \\ - \frac{3}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \frac{3}{12} \\ + \frac{4}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \frac{8}{9} \\ - \frac{1}{9} \\ \hline \end{array}$$

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

$$6. \quad \frac{7}{9} - \frac{4}{9} = \underline{\hspace{2cm}}$$

$$7. \quad \frac{4}{12} + \frac{7}{12} = \underline{\hspace{2cm}}$$

Compare. Write $<$, $>$, or $=$ for each \bigcirc .

$$8. \quad \frac{5}{6} - \frac{1}{6} \bigcirc 1$$

$$9. \quad \frac{4}{9} - \frac{1}{9} \bigcirc \frac{1}{3}$$

$$10. \quad \frac{10}{12} - \frac{2}{12} \bigcirc \frac{7}{12}$$

ALGEBRA Find the value of x .

$$11. \quad \frac{2}{7} + \frac{x}{7} = \frac{6}{7}$$

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

$$12. \quad \frac{x}{3} - \frac{1}{3} = \frac{1}{3}$$

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

$$13. \quad \frac{4}{5} - \frac{3}{5} = \frac{1}{x}$$

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

$$14. \quad \frac{4}{x} + \frac{6}{x} = 1$$

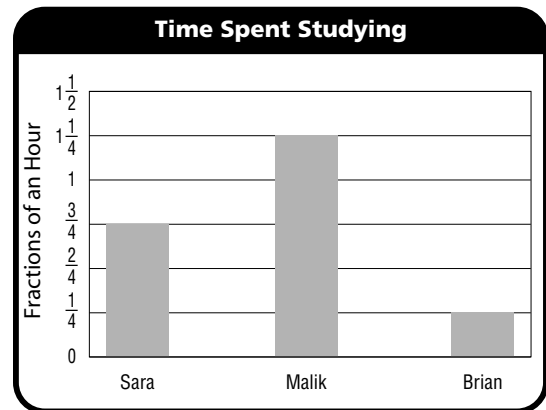
$$x = \underline{\hspace{2cm}}$$

Problem Solving and Test Prep

USE DATA For 15–16, use the bar graph.

15. How much more time does Sara study than Brian?
- _____

16. How much more time does Malik study than Sara and Brian together?
- _____



17. Sue buys $\frac{2}{8}$ pound of walnuts and $\frac{5}{8}$ pound of peanuts. How many pounds of nuts does Sue buy in all?

A $\frac{3}{8}$

C $\frac{7}{8}$

B $\frac{2}{16}$

D $\frac{7}{16}$

18. Juan's garden is divided into eighths. Of the garden, $\frac{3}{8}$ is tomato plants and $\frac{1}{8}$ is cucumber plants. What part of the garden does Juan have left to plant?
- _____

Problem Solving Strategy: Write an Equation

Problem Solving Strategy Practice

Write an equation to solve.

- Jasmine takes a dance class for tap and modern dance. The class lasts for $\frac{5}{6}$ hour. The modern dance part lasts for $\frac{2}{6}$ hour. How long does the tap part last?
- Martin buys $\frac{5}{8}$ yard of fabric for a project. He has $\frac{2}{8}$ yard of fabric left over after completing the project. How much fabric did Martin use for his project?

-
- Robert goes to soccer practice on Saturdays. This week, $\frac{2}{5}$ of the children at practice are girls. What fraction of the children are boys?
-

-
- Harley and Belinda share a bag of crackers. Harley eats $\frac{7}{12}$ of the crackers. Belinda eats $\frac{4}{12}$ of the crackers. What fraction of the crackers do they eat in all?
-

Mixed Strategy Practice

USE DATA For 5 – 6, use the table.

- Nicky walks dogs to earn money. How much more time does Nicky spend walking Binky than Pugg?
-

- How much time does Nicky spend walking Rusty and Pugg altogether?
-

- Michel practices piano for 75 minutes each day. Write a mixed number to show the time Michel practices, in hours.
-

Dog Walking Hours	
Dog Names	Time Spent
Pugg	$\frac{2}{8}$ hour
Rusty	$\frac{3}{8}$ hour
Binky	$\frac{5}{8}$ hour

- Linda plays 90 minutes of softball a day. Write a mixed number to show the time Linda plays, in hours.
-

Add and Subtract Mixed Numbers

Model and record the sum or difference.

$$\begin{array}{r} 1. \quad 2\frac{1}{8} \\ + 1\frac{3}{8} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 1\frac{3}{5} \\ + 3\frac{1}{5} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 5\frac{7}{10} \\ - 1\frac{2}{10} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 3\frac{7}{9} \\ - \frac{3}{9} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 2\frac{1}{3} \\ + 1\frac{2}{3} \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 3\frac{3}{12} \\ + 1\frac{4}{12} \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 2\frac{5}{6} \\ - 1\frac{3}{6} \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 4\frac{8}{12} \\ - 1\frac{3}{12} \\ \hline \end{array}$$

$$9. \quad 1\frac{7}{9} - 1\frac{4}{9} = \underline{\hspace{2cm}}$$

$$10. \quad 2\frac{3}{4} + 2\frac{1}{4} = \underline{\hspace{2cm}}$$

$$11. \quad 4\frac{4}{10} + \frac{7}{10} = \underline{\hspace{2cm}}$$

ALGEBRA Find the value of n .

$$12. \quad 2\frac{4}{6} + 1\frac{n}{6} = 3\frac{5}{6}$$

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

$$13. \quad 3\frac{n}{8} - 2\frac{3}{8} = 1\frac{2}{8}$$

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

$$14. \quad 5\frac{9}{10} - 5\frac{n}{10} = \frac{2}{10}$$

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

Problem Solving and Test Prep

USE DATA For 15–16, use the table.

15. How many more inches are there of green ribbon than blue ribbon?

Ribbons Used for Puppets	
Red	$3\frac{4}{8}$ inches
Blue	$4\frac{1}{4}$ inches
Green	$5\frac{1}{8}$ inches

16. Tim adds another $2\frac{2}{8}$ inches of red ribbon. How many inches are there now of both red and green ribbon? _____

17. Sonya drives $2\frac{3}{10}$ miles to the store and $4\frac{4}{10}$ miles to the library. How far does Sonya drive in all?

A $2\frac{7}{10}$

C $6\frac{6}{10}$

B $6\frac{7}{10}$

D $6\frac{7}{20}$

18. Ira uses $4\frac{3}{8}$ cups of almonds, $2\frac{1}{8}$ cups of raisins, and $1\frac{2}{8}$ cups of peanuts to make trail mix. How much more almonds does Ira use than peanuts?

A $4\frac{3}{8}$

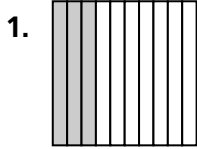
C $5\frac{5}{8}$

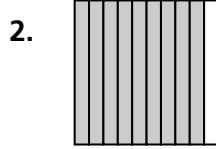
B $3\frac{1}{8}$

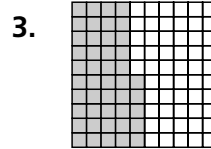
D $2\frac{1}{8}$

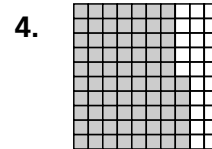
Relate Fractions and Decimals

Write the decimal and fraction shown by each model









Write each fraction as a decimal. You may draw a picture.

5. $\frac{6}{10}$

6. $\frac{2}{100}$

7. $\frac{1}{10}$

8. $\frac{63}{100}$

Write the amount as a fraction of a dollar, as a decimal, and as a money amount.

9. 6 dimes

10. 2 nickels 7 pennies

11. 4 dimes 9 pennies

12. 8 dimes 12 pennies

ALGEBRA Find the missing number.

13. 9 tenths + 7 hundredths = _____

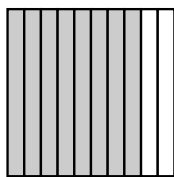
14. 6 tenths + _____ hundredths = 0.66

Problem Solving and Test Prep

15. Write five cents in decimal form.

16. Write one and thirty-four hundredths in decimal form.

17. Which decimal is shown by the model?



A 0.08

B 0.06

C 0.8

D 0.6

18. Which decimal means the same as $\frac{7}{10}$?

A 7.10

B 0.710

C 0.07

D 0.7

Equivalent Decimals

Use a tenths model and a hundredths model. Are the two decimals equivalent? Write *equivalent* or *not equivalent*.

1. 0.1 and 0.10

2. 0.23 and 0.32

3. 0.65 and 0.56

4. 0.3 and 0.30

5. 0.22 and 0.23

6. 0.9 and 0.09

7. 0.76 and 0.67

8. 0.50 and 0.5

Write an equivalent decimal for each. You may use decimal models.

9. 0.70

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

11. 0.2

12. $\frac{3}{4}$

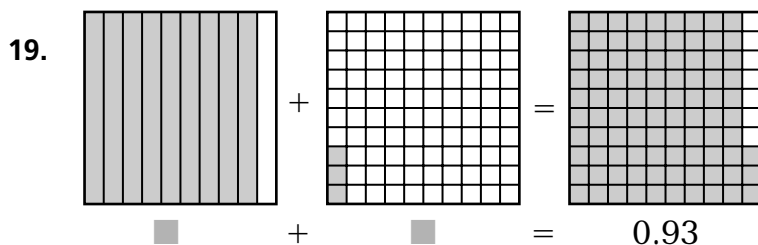
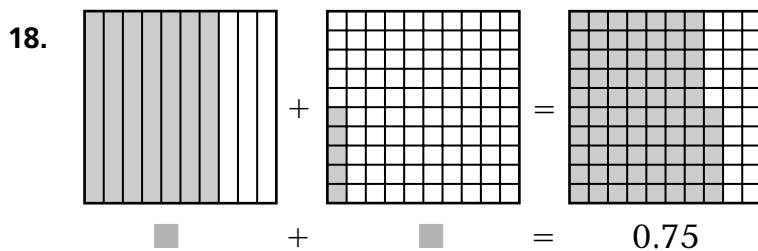
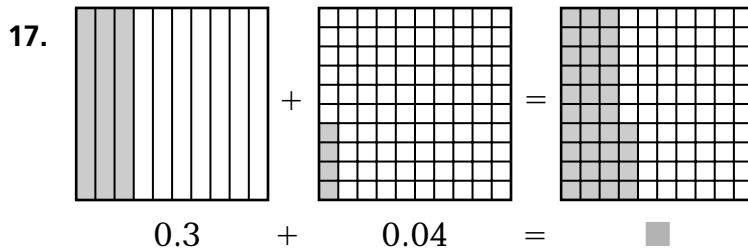
13. 0.3

14. 0.50

15. $\frac{7}{10}$

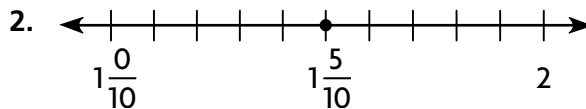
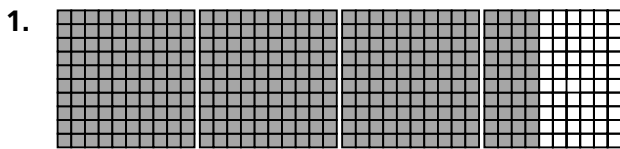
16. 0.90

ALGEBRA Write an equivalent decimal. Use the models to help.



Relate Mixed Numbers and Decimals

Write an equivalent decimal and mixed number for each model.



Write an equivalent mixed number or a decimal for each. Then write the word form. You may use a model.

3. 6.6

4. $3\frac{90}{100}$

5. 4.75

6. $5\frac{1}{4}$

7. 2.09

ALGEBRA Write the missing number in each \blacksquare .

8. $2.4 = 2 + \blacksquare$

9. $3.80 = 3 + 0.8 + \blacksquare$

10. $5.06 = 5 + \blacksquare + 0.00$

Problem Solving and Test Prep

11. Harriet is thinking of a decimal that is equivalent to eight and one-fifth. What is that decimal?

12. A CD case measures four and four-fifths inches by five and three-fifths inches. What is the decimal form of the measurements?

13. Which mixed number is equivalent to 3.25?

A $3\frac{1}{4}$

B $3\frac{2}{5}$

C $3\frac{2}{3}$

D $2\frac{9}{100}$

14. In simplest form, what is an equivalent fraction for the decimal 2.36?

A $2\frac{4}{50}$

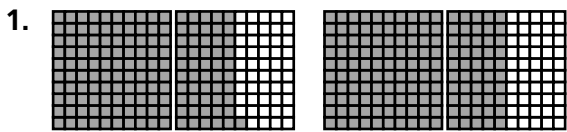
B $2\frac{3}{10}$

C $2\frac{9}{25}$

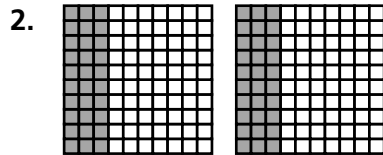
D $2\frac{4}{100}$

Compare Decimals

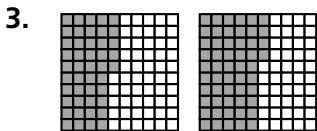
Compare. Write $<$, $>$, or $=$ for each \bigcirc .



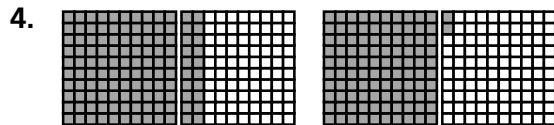
1.51 \bigcirc 1.5



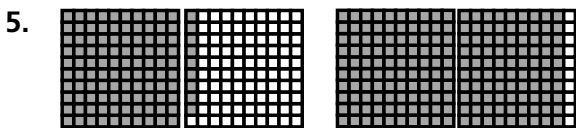
0.30 \bigcirc 0.3



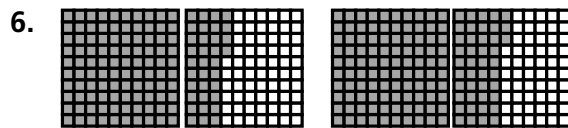
0.45 \bigcirc 0.54



1.20 \bigcirc 1.02

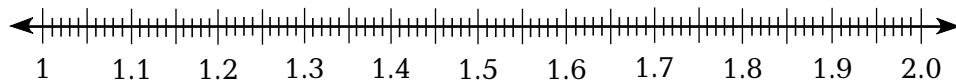


1.09 \bigcirc 1.90



1.34 \bigcirc 1.43

Use the number line to determine whether the following number sentences are *true* or *false*.



7. $1.25 < 1.52$

8. $1.70 > 1.7$

9. $1.21 < 1.2$

10. $1.22 < 1.11$

11. $1.29 < 1.92$

12. $1.4 = 1.40$

13. $1.09 > 1.08$

14. $1.66 = 1.67$

15. $1.37 < 1.35$

16. $1.55 > 1.45$

17. $1.0 = 1.00$

18. $1.9 < 1.99$

Hands On: Order Decimals

Use the number line to order the decimals from least to greatest.



1. 1.45, 1.44, 1.43

2. 1.05, 1.04, 1.4

3. 1.78, 1.79, 1.09

4. 1.33, 1.32, 1.3

5. 1.2, 1.19, 1.27

6. 1.05, 1.03, 1.01

7. 1.02, 1.03, 1.1

8. 1.84, 1.89, 1.82

9. 1.66, 1.65, 1.62

Order the decimals from greatest to least.

10. 1.66, 1.06, 1.6, 1.65

11. \$5.33, \$5.93,
\$5.39, \$3.55

12. 4.84, 4.48,
4.88, 4.44

13. \$1.45, \$1.43,
\$1.54, \$1.34

14. 7.32, 7.38,
7.83, 7.23

15. \$0.98, \$1.99,
\$0.89, \$1.89

16. 0.67, 0.76, 0.98, 1.01

17. \$1.21, \$1.12,
\$1.11, \$1.10

18. 4.77, 5.07, 5.1, 4.6

19. 1.21, 1.45, 1.12, 1.44

20. 2.21, 2.67, 2.66, 2.3

21. \$9.00, \$9.10,
\$9.11, \$9.99

22. \$5.97, \$5.96,
\$6.59, \$5.75

23. \$3.39, \$3.03,
\$3.83, \$3.30

24. 8.17, 8.05, 8.08, 8.1

Problem Solving Workshop Skill: Draw Conclusions

Problem Solving Skill Practice

Use the information on the chart to draw a conclusion.

- Jane looks at the ads to the right and wants the best value for her money. If she wants one game, which one should Jane buy, and at which store?

- What if Great Games sold playing cards for \$3.50? Which store would have the better value?

Great Games



Playing Cards
\$3.67 each

Checkers
\$7.85 each

Discount Games



Playing Cards: 2 for \$7.24

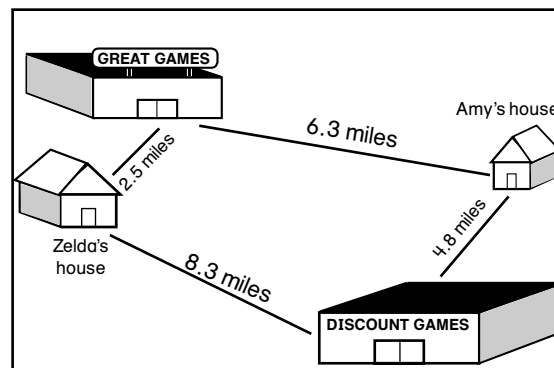
Checkers: 2 for \$15

Mixed Applications

USE DATA For 3–4, use the map.

- Sal lives 4.08 miles from Discount Games. Who lives closer: Amy or Sal?

- Sal lives 6.33 miles from Great Games. List Amy, Sal, and Zelda in the order of least to greatest distance from each store.



- Patty paid for 8 T-shirts with five \$20 bills. If the shirts each cost \$12.35, about how much change did Patty get back? Do you need an estimate or an exact answer?

Round Decimals

Round each number to the nearest tenth and each money amount to the nearest dollar.

1. 7.38

2. 43.56

3. 199.62

4. 76.04

5. \$22.51

6. \$8.87

7. \$255.02

8. \$655.78

Round each number to the nearest whole number.

9. 7.236

10. 5.499

11. 51.511

12. 388.901

13. 299.454

14. 49.995

15. 87.468

16. 6.666

Problem Solving and Test Prep

USE DATA For 17–18, use the map.

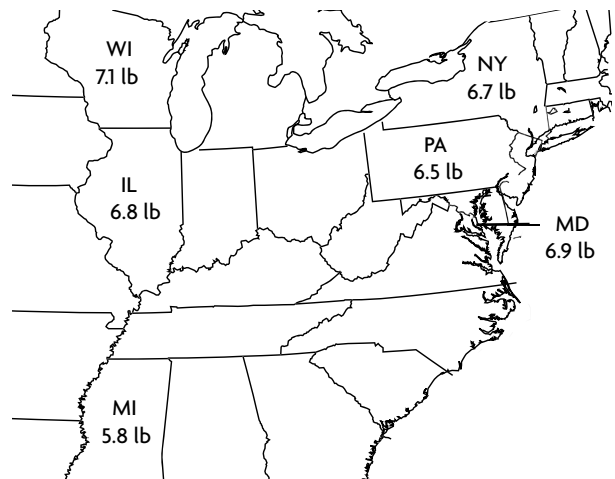
17. Round weight per fleece to the nearest whole number. Which states now show equal weight per fleece?

18. Order the states shown according to the heaviest weight per fleece to the lightest weight.

19. Mr. Scott gets 29.57 miles per gallon in his van. Which shows the distance rounded to the nearest tenth?

- A 29.5 miles
- B 29.4 miles
- C 29.6 miles
- D 29.7 miles

Weight per Fleece for Selected States (2004)



20. Paul is 5.89 feet tall. Which shows Paul's height to the nearest tenth?

- A 5.2 feet
- B 5.9 feet
- C 5.6 feet
- D 5.8 feet

Estimate Decimal Sums and Differences

Estimate the sum or difference.

1. $6.42 + 8.55$

2. $12.88 + 9.52$

3. $\$12.24 - \8.27

4. $53.51 - 48.66$

5. $\$44.03 - \15.97

6. $3.03 + 5.80$

7. $502.22 - 497.53$

8. $\$71.04 + \8.49

Estimate to compare. Write $<$, $>$, or $=$ for each \bigcirc .

9. $43.22 + 15.67 \bigcirc 81.77 - 22.54$

10. $52.48 - 12.02 \bigcirc 15.65 + 23.99$

11. $76.99 - 47.22 \bigcirc 15.42 + 12.60$

12. $21.88 + 16.02 \bigcirc 75.61 - 40.65$

Problem Solving and Test Prep

USE DATA For 13–14, use the table.

13. About how many more students are enrolled in K–4 than K–2 schools?

14. About how many students are enrolled in K–3 and K–4 schools in all?

California Elementary School Enrollment	
Grade Span	Students Enrolled (In Thousands)
K–2	20.9
K–3	41.8
K–4	46.6

15. David drove 99.15 miles in January and 88.98 miles in February. About how many more miles did David drive in January than in February?

- A 10 miles
B 20 miles
C 30 miles
D 100 miles

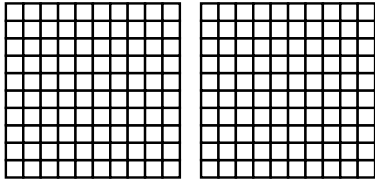
16. Mr. Frances drives 35.62 miles to work. His wife drives 27.25 miles to work. About how many more miles does Mr. Frances drive than Mrs. Frances?

- A 8 miles
B 10 miles
C 9 miles
D 3 miles

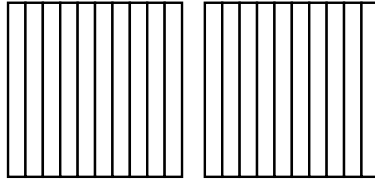
Model Addition

Use models to find the sum.

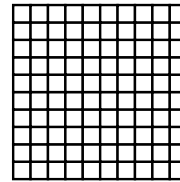
1.
$$\begin{array}{r} 0.56 \\ +0.45 \\ \hline \end{array}$$



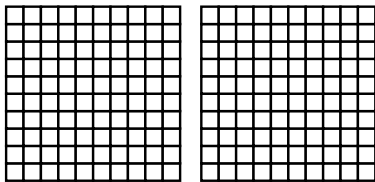
2.
$$\begin{array}{r} 0.4 \\ +0.7 \\ \hline \end{array}$$



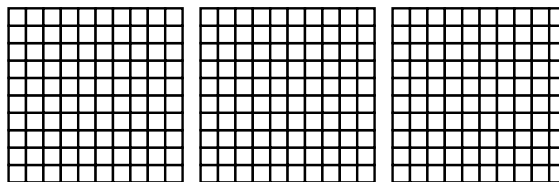
3.
$$\begin{array}{r} 0.25 \\ +0.07 \\ \hline \end{array}$$



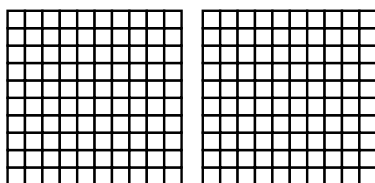
4.
$$\begin{array}{r} 1.05 \\ +0.78 \\ \hline \end{array}$$



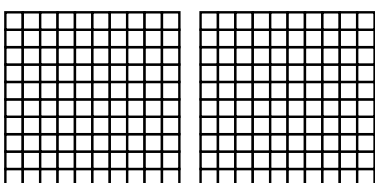
5.
$$\begin{array}{r} 0.38 \\ +1.93 \\ \hline \end{array}$$



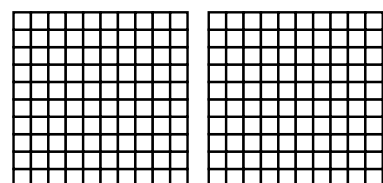
6.
$$\begin{array}{r} 0.44 \\ +1.08 \\ \hline \end{array}$$



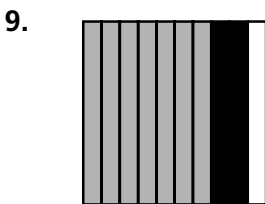
7.
$$\begin{array}{r} 1.06 \\ +0.67 \\ \hline \end{array}$$



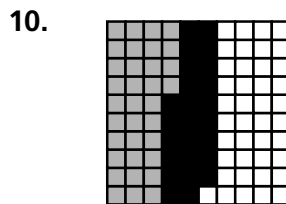
8.
$$\begin{array}{r} 0.16 \\ +1.55 \\ \hline \end{array}$$



ALGEBRA Use the models to find the missing addend.



$0.7 + \blacksquare = 0.9$

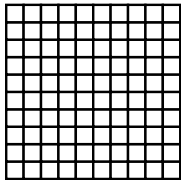


$0.34 + \blacksquare = 0.59$

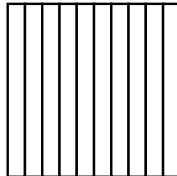
Model Subtraction

Use models to find the difference.

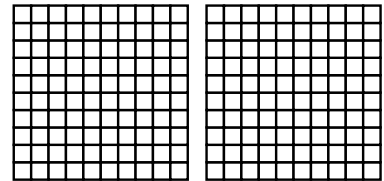
1.
$$\begin{array}{r} 0.57 \\ -0.18 \\ \hline \end{array}$$



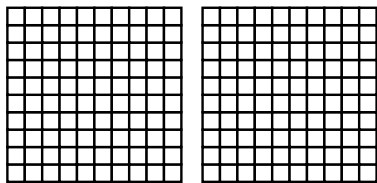
2.
$$\begin{array}{r} 0.7 \\ -0.3 \\ \hline \end{array}$$



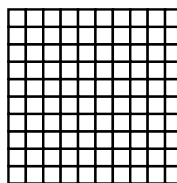
3.
$$\begin{array}{r} 1.07 \\ -0.42 \\ \hline \end{array}$$



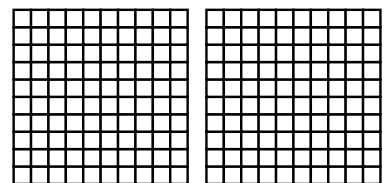
4.
$$\begin{array}{r} 1.09 \\ -0.90 \\ \hline \end{array}$$



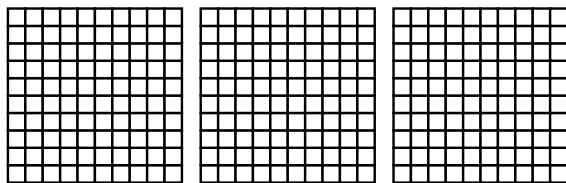
5.
$$\begin{array}{r} 1.00 \\ -0.63 \\ \hline \end{array}$$



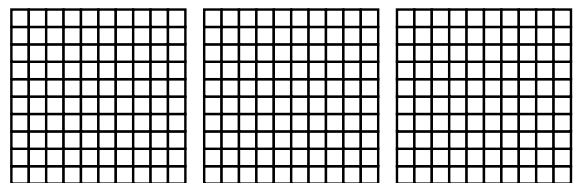
6.
$$\begin{array}{r} 1.98 \\ -1.29 \\ \hline \end{array}$$



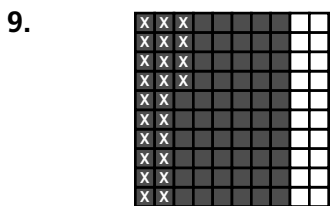
7. $2.73 - 1.79$



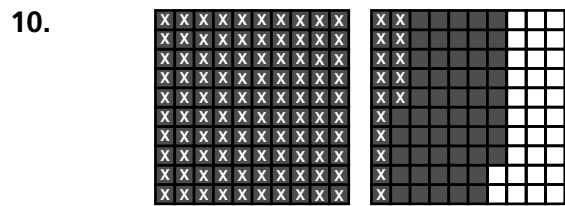
8. $2.92 - 2.07$



ALGEBRA Use the models to find the missing number.



$0.80 - \blacksquare = 0.56$



$\blacksquare - 1.15 = 0.53$

Record Addition and Subtraction

Estimate. Then record the sum or difference.

1.
$$\begin{array}{r} 5.43 \\ -2.54 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 2.89 \\ +1.22 \\ \hline \end{array}$$

3.
$$\begin{array}{r} \$41.32 \\ -\$37.44 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 2.29 \\ +1.53 \\ \hline \end{array}$$

5. $\$21.82 + \13.09 6. $42.14 + 24.36$ 7. $\$94.23 - \65.44 8. $57.22 - 53.88$

Compare. Write $<$, $>$, or $=$ for each \bigcirc .

9. $\$5.15 + \$0.10 \bigcirc \$4.84 + \0.35

10. $3.78 + 2.51 \bigcirc 9.54 - 3.30$

ALGEBRA Find the missing decimals. The sums are given at the end of each row and the bottom of each column.

11.	13.06	4.12	22.77	<input type="text"/>
12.	67.77	<input type="text"/>	15.14	83.64
13.	0.98	73.22	<input type="text"/>	80.78
14.	<input type="text"/>	78.07	44.49	204.37

Problem Solving and Test Prep

15. Sierra had 8.25 feet of plastic wrap. Then she used 3.75 feet. How much does Sierra have left?
- _____
16. Lyle spent \$2.47 on peanut butter, \$3.56 on jelly, and \$2.37 on a loaf of bread. How much did Lyle spend in all?
- _____
17. Lauren saved \$9.25 of her allowance. Her best friend saved \$2.45 less than she did. How much did Lauren's best friend save?
- A \$6.80 B \$11.70 C \$7.20 D \$5.90
18. Jason bought pants on sale for \$25.89. The original price was \$33.98. How much did Lyle save?
- A \$8.25 B \$8.19 C \$8.11 D \$8.09

Problem Solving Workshop Strategy: Compare Strategies

Problem Solving Strategy Practice

Predict and test or make a table to solve.

- Dana will buy chips from a vending machine. The chips cost \$2.45. Dana has 2 dollar bills, 3 quarters, 3 dimes, and 4 nickels. What are two different ways Dana can pay for the chips?

- Victor has a \$1 bill, 4 quarters, and 2 dimes. He will borrow some money from a friend to buy a bag of chips for \$2.45. What coin or coins must he borrow in order to pay for the chips?

- A sandwich costs \$1.00 in a vending machine. How many different ways can you pay the exact amount in coins if you only have nickels and quarters?

- Sugar-free gum costs \$0.85 in a vending machine. If you have one quarter, how many dimes would you need to buy a pack of sugar-free gum?

Mixed Applications

USE DATA For 5–6, use the table.

- Tanya spent \$9.80 at the pool. What did Tanya pay for?

- Libby paid for herself and two sisters to go to the pool. She also bought 3 towels and a bathing cap. How much did Libby spend?

- Henry had the exact change to pay for a \$0.50 pencil. He paid with 6 coins. What could those coins be?

Community Center Pool	
Item	Prices
Entrance Fee	\$1.50
Bathing Cap	\$2.75
Towel	\$5.55

- In Exercise 1, how much money will Dana have left over after she buys the chips?

Points, Lines, and Rays

Name the geometric term that best represents the object.

- | | | | |
|------------------|---------------|----------------------------------|---------------------|
| 1. top of a desk | 2. chalk tray | 3. a point from Earth into space | 4. NNE on a compass |
|------------------|---------------|----------------------------------|---------------------|

Name an everyday object that represents the term.

- | | | | |
|----------|--------|-----------------|----------|
| 5. point | 6. ray | 7. line segment | 8. plane |
|----------|--------|-----------------|----------|

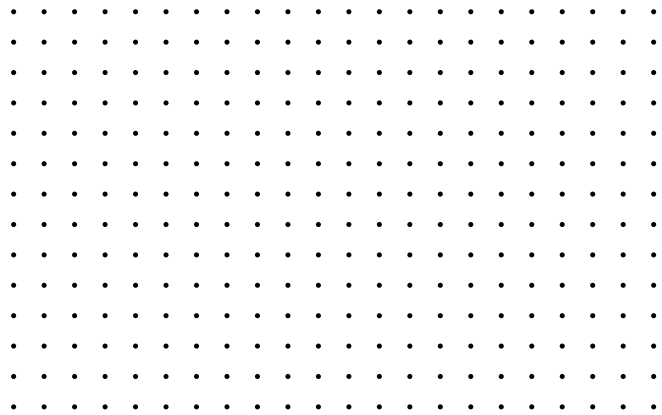
Draw and label an example of each on the dot paper.

9. plane *ABC*

10. line segment *DE*

11. ray *FG*

12. point *H*



Problem Solving and Test Prep

USE DATA For 13–16, use the photograph.

13. What geometric term describes the place where the ceiling meets a wall?

14. What features in the hallway show planes?

15. What geometric term best describes the arrow?

- | | |
|-----------------------|----------------|
| A line | C point |
| B line segment | D ray |



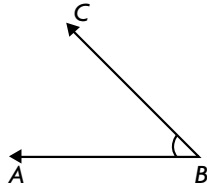
16. Which geometric term best describes the black dot on the window?

- | | |
|-----------------------|----------------|
| A line | C point |
| B line segment | D ray |

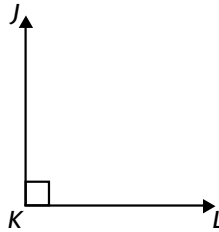
Classify Angles

Classify each angle as *acute*, *right*, or *obtuse*.

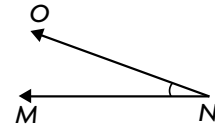
1.



2.



3.



Draw and label an example of each.

4. acute angle *PQR*

5. obtuse angle *STU*

6. right angle *DEF*

7. acute angle *XYZ*

8. obtuse angle *JKL*

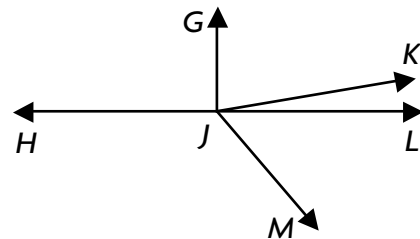
9. right angle *GHI*

Problem Solving and Test Prep

USE DATA For 10–11, use the angles shown.

10. Which angles appear to be acute?

11. What type of angle is angle *HJM*?



12. At what time do the hands on a clock represent a right angle?

- A 9:15 C 9:00
- B 11:30 D 6:00

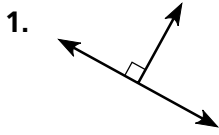
13. Which is the measure of a right angle?

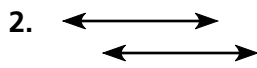
- A 45° C 110°
- B 90° D 180°

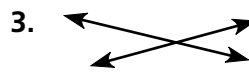
Line Relationships

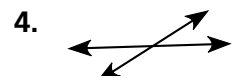
Name any line relationships you see in each figure.

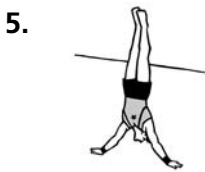
Write *intersecting*, *parallel*, or *perpendicular*.





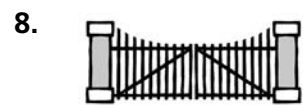












Problem Solving and Test Prep

USE DATA For 9–10, use the map.

9. Name a street that appears to be parallel to E Broadway St.

10. Name a street that intersects Madison St. NE and appears to be parallel to 15th Ave. NE.



11. Which best describes intersecting lines?

- A They never meet.
- B They form four angles.
- C They form only obtuse angles.
- D They form only acute angles.

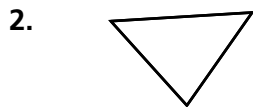
12. Which best describes parallel lines?

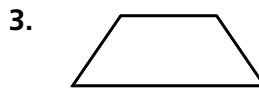
- A They never meet.
- B They form four angles.
- C They form only obtuse angles.
- D They form only acute angles.

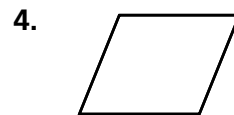
Polygons

Name the polygon. Tell if it appears *regular* or *not regular*.





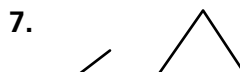


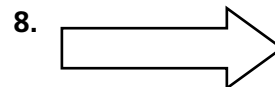


Tell if each figure is a polygon. Write *yes* or *no*.

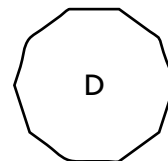
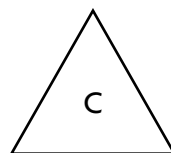
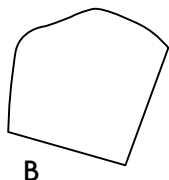
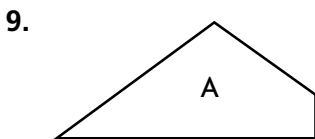








Choose the figure below that does not belong. Explain.

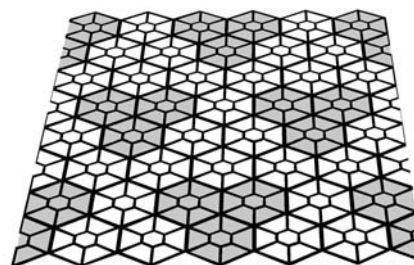


Problem Solving and Test Prep

USE DATA For 10–11, use the sidewalk pattern at the right.

10. What is the smallest polygon in the pattern?

11. What other polygon do you see?



12. Which is a six-sided polygon?

- A triangle
- B pentagon
- C octagon
- D hexagon

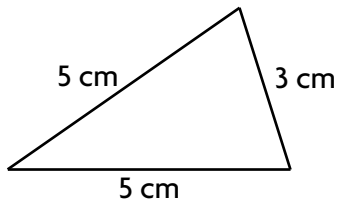
13. How many angles does an octagon have?

- A 8
- B 9
- C 10
- D 7

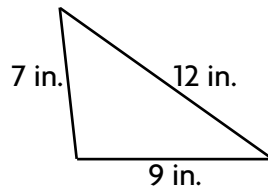
Classify Triangles

Classify each triangle. Write *isosceles*, *scalene*, or *equilateral*.
Then write *right*, *acute*, or *obtuse*.

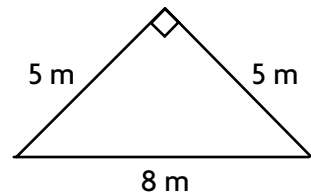
1.



2.

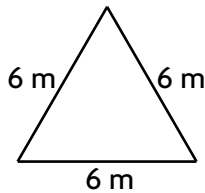


3.

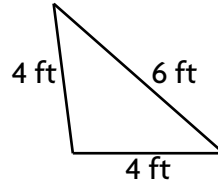


Classify each triangle by the lengths of its sides. Write *isosceles*, *scalene*, or *equilateral*.

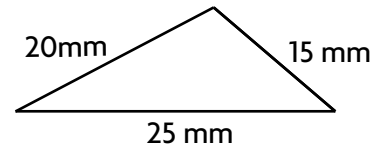
4.



5.



6.

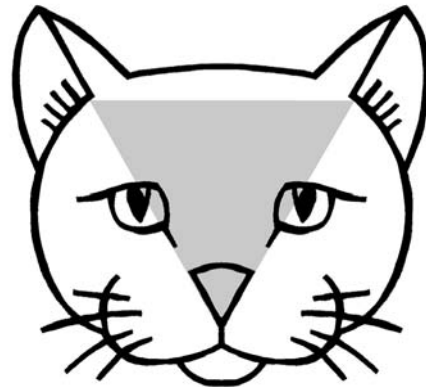


Problem Solving and Test Prep

USE DATA For 7–8, use the drawing.

7. Classify the shape of the gray triangle by the length of its sides. Write *isosceles*, *scalene*, or *equilateral*.
- _____

8. Classify the shape of the gray triangle by its angles. Write *right*, *acute*, or *obtuse*.
- _____



9. What kind of triangle has 2 equal sides?

A acute
B equilateral
C isosceles
D scalene

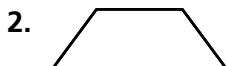
10. What kind of triangle has no equal sides?

A acute
B equilateral
C isosceles
D scalene

Classify Quadrilaterals

Classify each figure in as many of the following ways as possible. Write quadrilateral, parallelogram, rhombus, rectangle, square, or trapezoid.



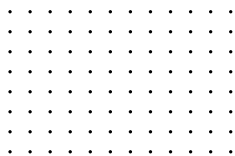




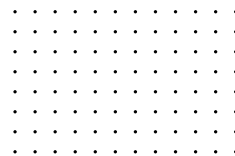


Draw and label an example of each quadrilateral.

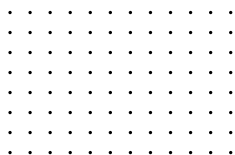
5. 2 pairs of parallel sides and opposite sides equal



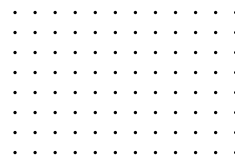
6. 4 equal sides with 4 right angles



7. 4 equal sides with 2 pairs of parallel sides



8. no pairs of parallel sides

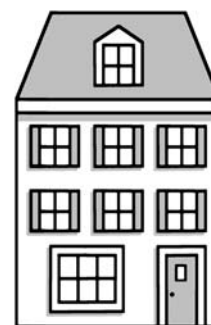


Problem Solving and Test Prep

USE DATA For 9–10, use the drawing.

9. Describe and classify the roof of the Victorian dollhouse.

10. What are the different ways to classify the windows?



11. Which is the best description of the figures shown below?



- A parallelograms
- B quadrilaterals
- C rectangles
- D trapezoids

12. Which is the best description of the figures?



- A parallelograms
- B quadrilaterals
- C rectangles
- D trapezoids

Circles

In the space provided, construct circle M with a radius of 2 cm. Label each of the following.

1. chord AB
2. diameter CD
3. radius ME
4. radius MF
5. chord GH that passes through the center

For 6–9, use the circle you drew and a centimeter ruler to complete the table.

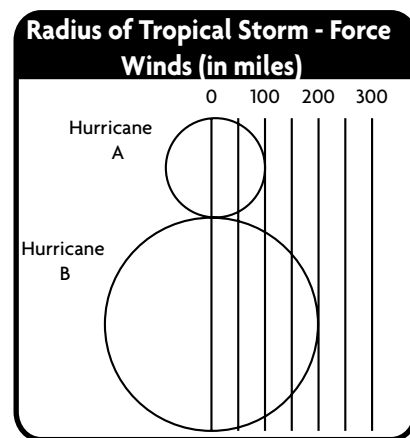
	Name	Part of Circle	Length in cm
6.	ME		
7.	CD		
8.	AB		
9.	GH		

Problem Solving and Test Prep

USE DATA For 10–11, use the diagram.

10. What is the diameter of hurricane A in miles?

11. What is the radius of hurricane B in miles?



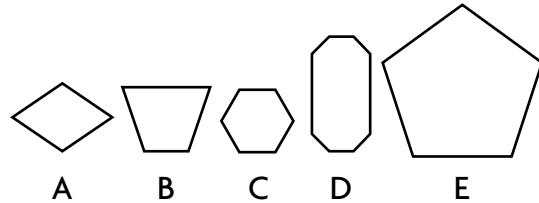
12. What is the length of the diameter of a circle with a radius of 6 cm?
- A 3 cm C 9 cm
- B 6 cm D 12 cm
13. What do you call a line segment that has its endpoints on a circle?
- A circle C diameter
- B chord D radius

Problem Solving Workshop Strategy: Use Logical Reasoning

Problem Solving Strategy Practice

For 1–3, use the figures at the right.

- Lenny’s parents put a play area in their backyard. All the sides of the play area are of equal length and none of the angles are acute or square. Identify the figure shown that appears to be like Lenny’s play area?



- Cyd is designing a garden that has no parallel sides and all obtuse angles. Identify the figure shown that appears to be like Cyd’s design.

- The shape of Holly’s backyard has two parallel sides and two acute angles. Identify the figure shown that appears to be like Holly’s backyard.

Mixed Strategy Practice

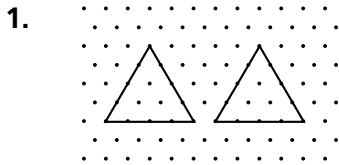
- Willa and her two brothers each have the amount of money shown below. How much money does each person have?



- After Della tossed coins into a pool, James dove in to pick up the quarter. Then Della dove in to pick up her remaining 30 cents. How much money did Della toss into the pool? _____
- Han’s backyard was shaped like a square with all right angles. Classify the shape in as many ways as possible.

Congruent Figures

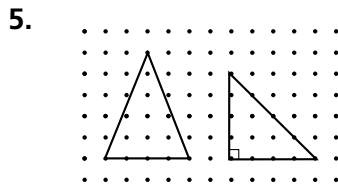
Tell whether the two figures are *congruent* or *not congruent*.

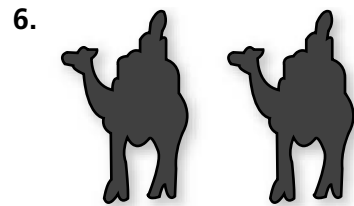


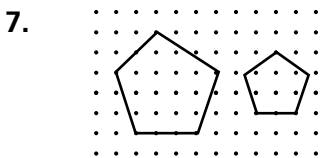


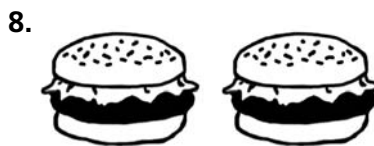


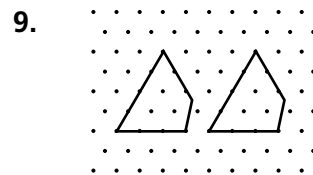




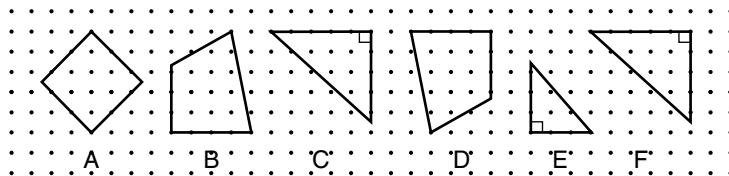








For 10–12, use the polygons A–F.



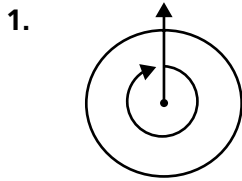
10. How can you determine whether figures C and E are congruent?

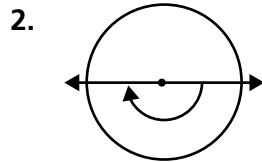
11. What pairs of polygons are congruent?

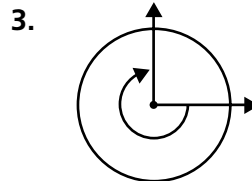
12. Which polygons do not have a matching congruent figure?

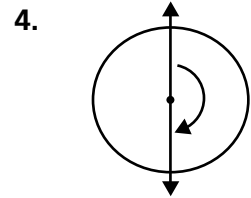
Turns

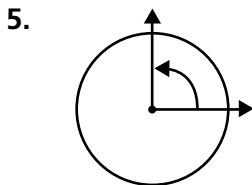
Tell whether the rays on the circle show a $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, or full turn. Then identify the number of degrees the rays have been turned clockwise or counterclockwise.

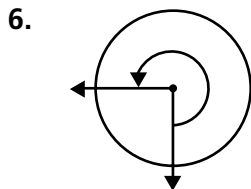


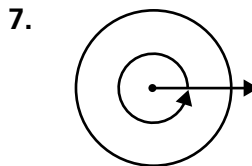


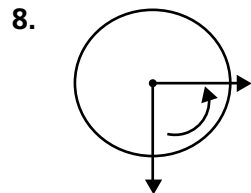




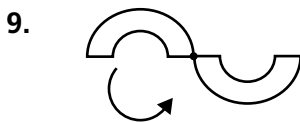


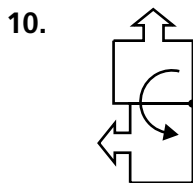


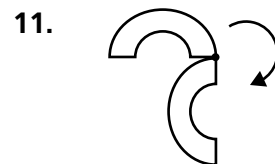


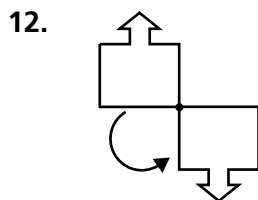


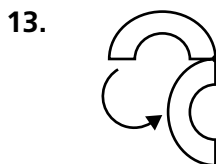
Tell whether the figure has been turned 90° , 180° , 270° , or 360° clockwise or counterclockwise.

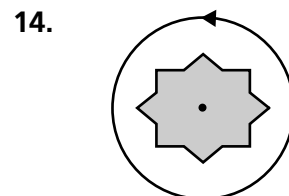












Symmetry

Tell whether the figure appears to have *line symmetry*, *rotational symmetry*, *both*, or *neither*.





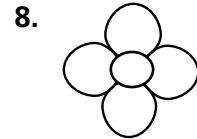




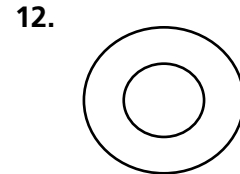
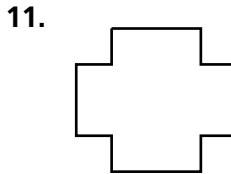
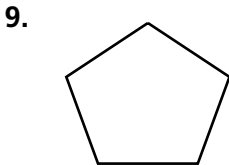








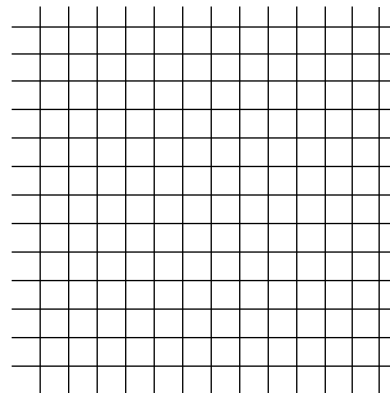
Draw the line or lines of symmetry.



Problem Solving and Test Prep

13. On the grid paper at the right, draw and label a figure that has 3 lines of symmetry.

14. On the grid paper at the right, draw and label a figure that has both line and rotational symmetry.



15. Which best describes the symmetry of the letter A?

- A line
- B rotational
- C both
- D none

16. Which of the following is related to a $\frac{3}{4}$ turn?

- A 90°
- B 180°
- C 270°
- D 360°

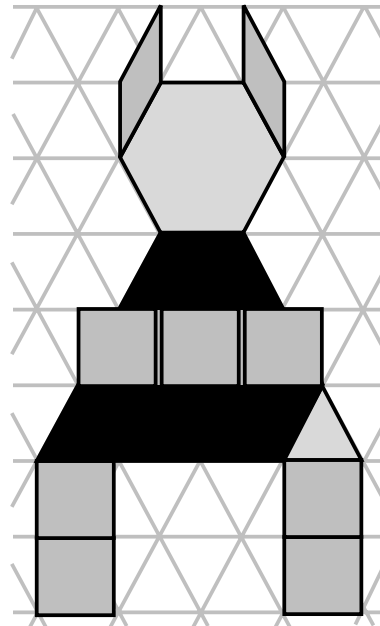
Problem Solving Workshop Strategy: Compare Strategies

Problem Solving Strategy Practice

1. Dustin made the dog at the right from pattern blocks. Does Dustin's dog have line symmetry?

2. What individual blocks in Dustin's dog have rotational symmetry?

3. What individual blocks in Dustin's dog do not have rotational symmetry?



Problem Solving and Test Prep

USE DATA For 4–5, use Dustin's pattern block dog above.

4. How many pattern-block dogs does Dustin need to make if he wants to place the dogs in an arrangement that has rotational symmetry?
5. List the name of each figure Dustin used along with the number of blocks used of each in order from the least number of used blocks to the greatest number of used blocks. Use $<$ or $=$.

6. Sara made a bird using 20 pattern blocks. If she used 4 blocks for each wing, how many pattern blocks did Sara use for the body?

7. Sara made 25 copies of her bird for a border around her sister's room. How many pattern pieces did Sara need in all?

Geometric Patterns

Write a rule for the pattern. Then draw the next two figures in your pattern.

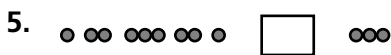


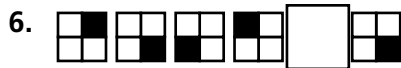


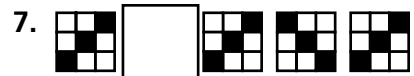




Write a rule for the pattern. Then draw the missing figure in your pattern.





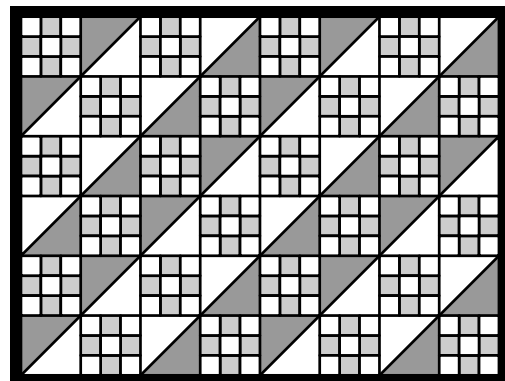


Problem Solving and Test Prep

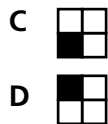
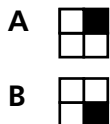
USE DATA For 8–9, use the quilt.

8. Does the rule for the pattern include shading? Explain.

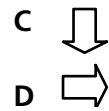
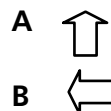
9. If you remove the border and add a row at the bottom, will that row start with a block or a triangle?



10. In Exercise 6, what will be the tenth figure in the pattern?



11. In Exercise 2, if the white arrow continues to rotate, what will be the fifteenth figure in the pattern?



Faces, Edges, and Vertices

Name a solid figure that is described.

1. 2 circular bases

2. 6 square faces

3. 1 rectangular and 4 triangular faces

4. 1 circular base

Which solid figure do you see in each?

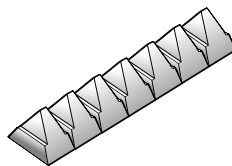
- 5.



- 6.



- 7.



- 8.



Problem Solving and Test Prep

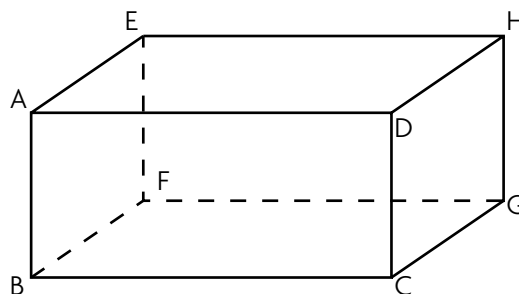
For 9–10, look at the edges of the rectangular prism.

9. Name a pair of parallel line segments.

10. Name a pair of perpendicular line segments.

11. Which solid figure has more edges, a rectangular prism or a triangular prism? How many more?

12. What is the relationship between the number of faces and the number of edges of a triangular pyramid?

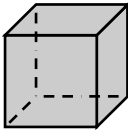
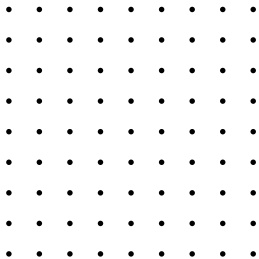


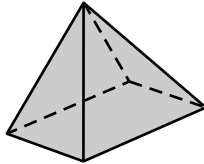
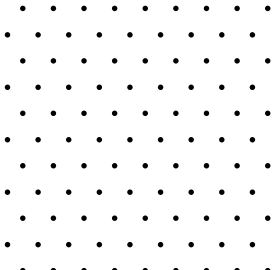
13. Which of the figures below has one circular base?

- A cone
- B sphere
- C cylinder
- D square prism

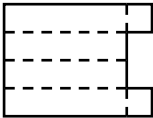
Patterns for Solid Figures

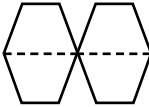
Draw a net that can be cut to make a model of the solid figure shown.

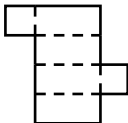
1.  


2.  

Would the net make a rectangular prism? Write yes or no.

3.  _____

4.  _____

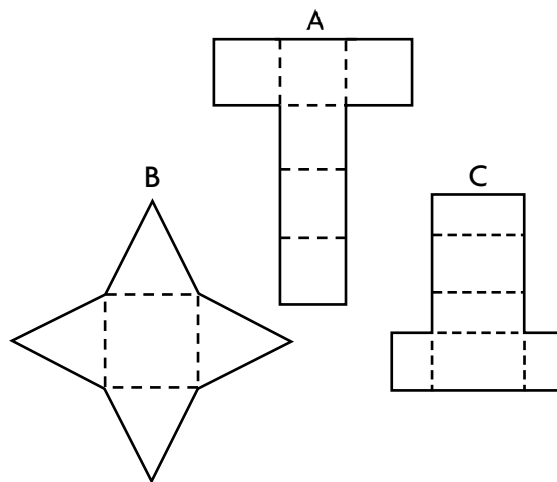
5.  _____

6.  _____

For 7–8, use the nets.

7. Do nets B and C make figures with the same number of sides?

8. Do nets A and C make figures with the same number of edges? Explain.



Problem Solving and Test Prep

9. How would you change the figure in Exercise 3 to make a solid figure?

10. Can the net in Exercise 6 make a solid figure?

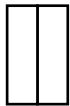
11. What figure can you make from net A above?

12. What figure can you make from net B above?

Different Views of Solid Figures

Name the figure that has the following views.

1. top view



front view



side view



2. top view



front view



side view



3. top view



front view



side view



4. top view



front view

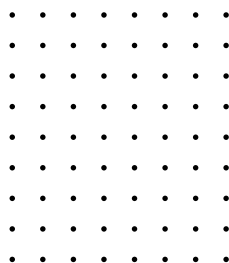
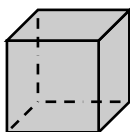


side view

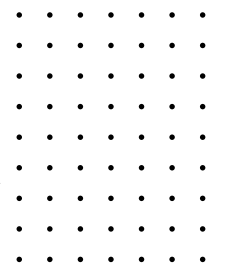
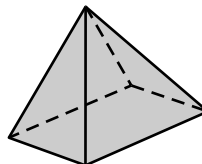


Draw the top, front, and side views of each solid figure.

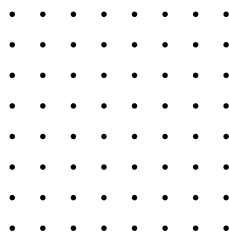
5.



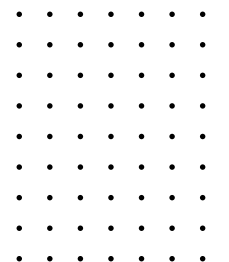
6.



7.



8.



Problem Solving and Test Prep

9. What solid figures have a circle on two views?

10. What solid figures have a triangle on at least one of its views?

11. Which figure is the top view of a cube?

- A** square **C** point
B cylinder **D** triangle

12. Which figure does not have a triangle as one of its views?

- A** cone **C** cylinder
B triangular pyramid **D** triangular prism

Problem Solving Workshop Strategy:

Make a Model

Problem Solving Strategy Practice

Make a model to solve.

- Paula has 36 cubes to build a wall that is 1, 2, and 3 cubes high and then repeats the pattern. How many cubes long can Paula make the wall?
- What if Paula used a repeating pattern of 1, 3, and 5 blocks high? How many blocks would Paula need to build a wall 9 blocks long?

- John has 66 cubes. He gives 21 to Mark and then builds a staircase beginning with 1 cube, then 2, and so on. How tall will John's staircase be?
- How many cubes would John need to build the next step of his staircase?

Mixed Strategy Practice

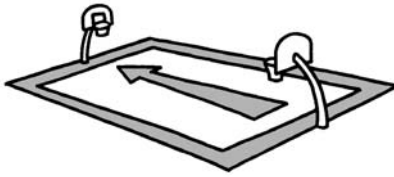
- Sandra and Jan have a total of 88 cubes, half of which are blue. Jan uses 34 to make a wall and Sandra uses 25 to make a building. What is the least number of blue cubes they could use?
- Mrs. Lutie left home and went to the bank. Then she drove 18 miles to the dentist, 9 miles for groceries, 8 miles to pick up her kids, and 3 miles back home. If Mrs. Lutie drove a total of 45 miles, how far was it from home to the bank?

- Pose a Problem** Change the numbers in Exercise 6. Make a new problem about Mrs. Lutie's errands.
- How many ways can you arrange 12 cubes in more than one row? Name the ways.

Customary Measurements

Circle the most reasonable measurement.

1.



70 ft or 70 mi

2.



2 c or 2 gal

3.



180 lb or 180 T

Write an equation you can use to complete each table.
Then complete each table.

4. _____

Inches, <i>n</i>	48	60	72	84	96
Feet, <i>f</i>	4	5			

5. _____

Gallons, <i>g</i>	2	4	6	8	10
Pints, <i>p</i>	16				

Estimate to the nearest inch. Then measure to the nearest

$\frac{1}{2}$ and $\frac{1}{4}$ inch.

6.



7.



Problem Solving and Test Prep

8. How many more cups are in a gallon than cups in a quart?

9. How many more feet are in 1 mile than feet in 1,000 yards?

10. How many inches are in 6 ft?

- A 12 in. C 108 in.
B 72 in. D 144 in.

11. Walt's stew pot holds 2 gallons. How large is Walt's stew pot in cups?

Metric Measurements

Write an equation you can use to complete each table.

Then complete each table.

1.

Meters, <i>m</i>	20	30	40	50	60
Decimeters, <i>d</i>		300			

2.

Milliliters, <i>mL</i>	4,000	6,000	8,000	10,000	12,000
Liters, <i>L</i>		6			

Estimate to the nearest centimeter. Then measure to the nearest half centimeter and millimeter.



Order the measurements from greatest to least.

5. $\frac{1}{2}$ km; 700 m; 80,000 mm;
1 km

6. 3 kg; 3,100 g; 2 kg;
5,000 g

7. 3,000 mL; $2\frac{1}{2}$ L; 2 L;
1,600 mL

Problem Solving and Test Prep

USE DATA For 8–9, use the table.

8. How many Cockatoos like Max would it take to have a combined mass of 4.4 kilograms?

9. How many millimeters long is one of the porcupine's quills?

10. Orville's model airplane is $4\frac{1}{2}$ decimeters long. How many millimeters long is it?

- A 4,500 C 45
B 450 D $4\frac{1}{2}$

Animals at the San Diego Zoo

Animal	Fact
Pocahontas the Porcupine	Quills are about 30 centimeters long.
Dotti and Tevi the Clouded Leopard Sisters	Each is about 1.5 meters long.
Max the Salmon Crested Cockatoo	Has a mass of about 550 grams.
Tembo the African Elephant	Can hold about 14 liters of water in her trunk.

11. Trina is going to school. Her book bag weighs 7 kilograms. How many grams does it weigh?


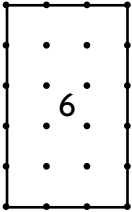
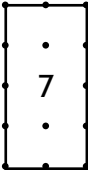

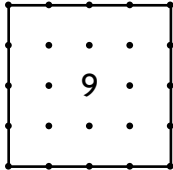
Estimate and Measure Perimeter

Use string to estimate and measure the perimeter of each object.

- | | | | |
|------------------|--------------------------------|---------------------|----------------------------------|
| 1. this workbook | 2. the doorway to your bedroom | 3. the face of a TV | 4. the door of your refrigerator |
|------------------|--------------------------------|---------------------|----------------------------------|

_____	_____	_____	_____
_____	_____	_____	_____

Find the perimeter of each figure.

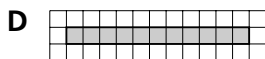
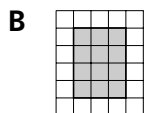
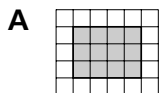
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					

Problem Solving and Test Prep

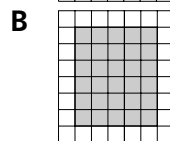
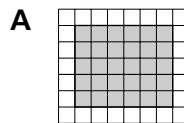
For 10–11, use the dot paper above.

- | | |
|---|--|
| 10. Draw and label a square with a perimeter of 8 units. What are the lengths of the sides? | 11. Draw and label a square with a perimeter of 16 units. What are the lengths of the sides? |
|---|--|

12. Which rectangle has the greatest perimeter?



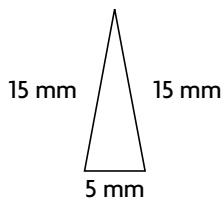
13. Which rectangle has the greatest perimeter?



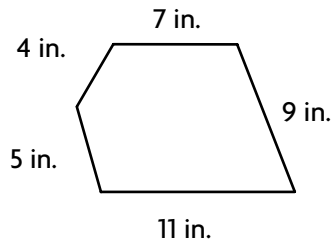
ALGEBRA Find Perimeter

Find the perimeter.

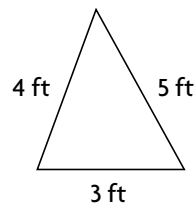
1.



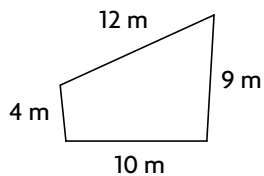
2.



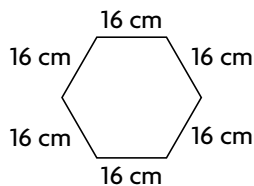
3.



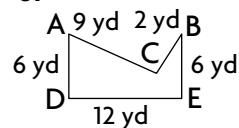
4.



5.

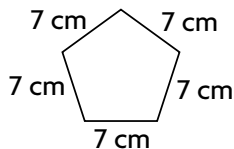


6.

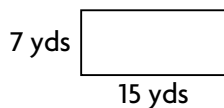


Use a formula to find the perimeter.

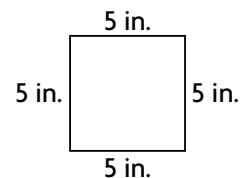
7.



8.



9.



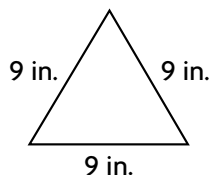
Problem Solving and Test Prep

10. **Reasoning** The perimeter of an isosceles triangle is 30 in. Its base is 8 in. How long are each of the other two sides?

11. **Reasoning** The perimeter of a rectangle is 46 ft. The width is 10 ft. What is the length?

12. What is the perimeter of this figure?

- A 18 in.
- B 27 in.
- C 36 in.
- D 45 in.



13. What is the perimeter of an equilateral hexagon with sides 6 cm long? Explain.

Problem Solving Workshop Skill: Use a Formula

Problem Solving Skill Practice

Use a formula to solve.

1. Stacy's backyard is 50 ft by 95 ft. She wants to put in a privacy fence like she saw at the Palms Marketplace. About how many yards of fencing will Stacy need for the perimeter of her backyard?

dog run: 10 ft by 80 ft

sandbox: 13 ft by 50 ft

Zen garden
15 ft by 25 ft

For 2–3, use the diagram.

2. Stacy's dog runs one time around the perimeter of the dog run. How many feet does Stacy's dog run?
3. Stacy wants to place edging around the sandbox and the Zen garden. How many feet of edging will Stacy need in all?

Mixed Applications

4. Use the diagram above. How much more fencing does Stacy need to fence the sandbox than the Zen garden?

Bart's Building Supplies	
Supply	Cost
How-to Book	\$15
Outdoor Siding	\$8/foot
Fencing	\$15/yard

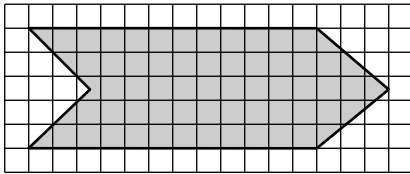
USE DATA For 5–6, use the table.

5. Bethany bought a how-to book and 80 feet of siding. How much did she spend?
6. Mr. Daley spent \$195 for 3 How-to Books and fencing. How many yards of fencing did he buy?

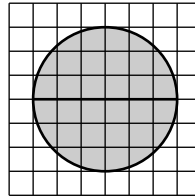
Estimate Area

Estimate the area of each figure. Each unit stands for 1 sq m.

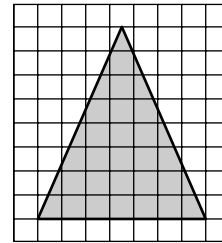
1.



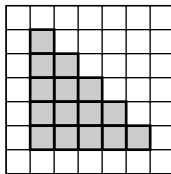
2.



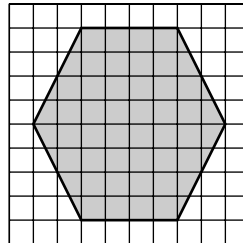
3.



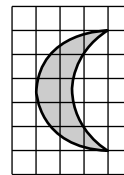
4.



5.



6.



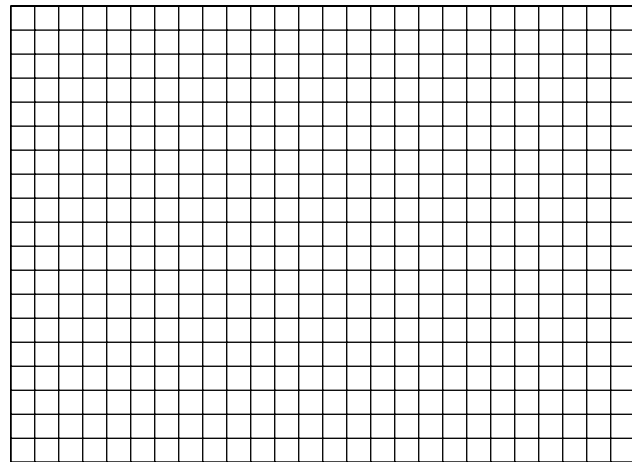
Draw each figure on the grid paper at the right. Then estimate the areas.

7. hexagon

8. right triangle

9. figure with straight lines

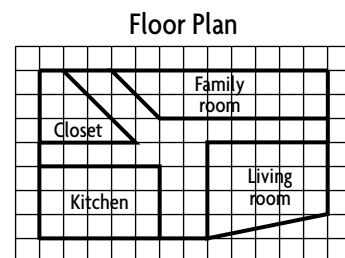
10. figure with curved and straight lines



USE DATA For 11–12, use the diagram.

11. About how many square yards is the hallway?

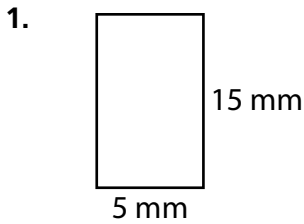
12. About how many square yards is the closet?

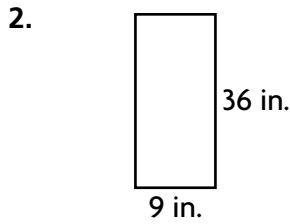


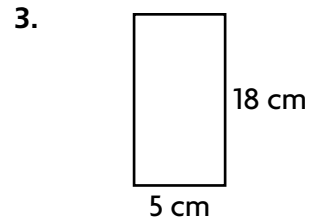
1 square unit = 1 square yard

ALGEBRA Find Area

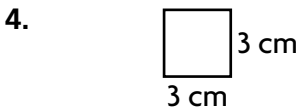
Find the area.

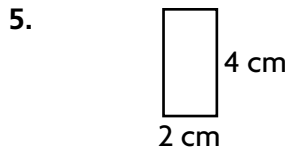


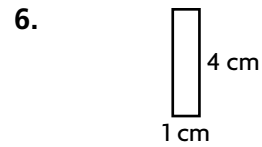




Find the area and perimeter.





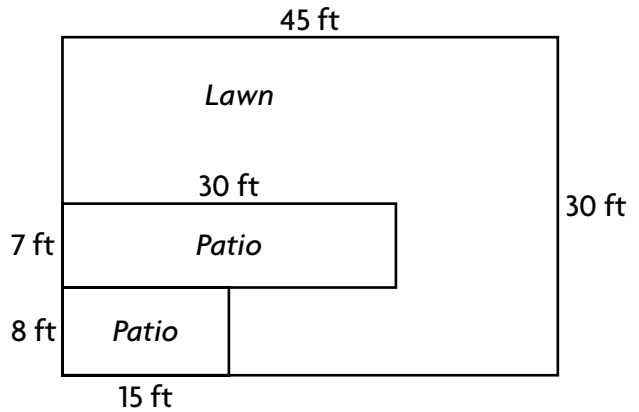


Problem Solving and Test Prep

For 7–8, use the diagram.

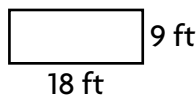
7. What is the area and perimeter of the entire patio?

8. How much smaller is the area of the patio than the area of the lawn?



9. What is the area of this figure?

- A 152 sq ft
- B 162 sq ft
- C 180 sq ft
- D 200 sq ft



10. Use a formula to find the area of a rectangle that is 7 cm by 35 cm.

Problem Solving Workshop Strategy: Solve a Simpler Problem

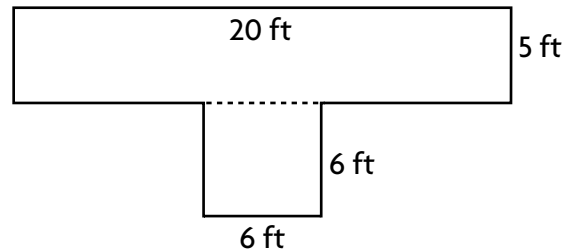
Problem Solving Strategy Practice

Solve a Simpler Problem to solve.

For 1–3, use the diagram.

- Workers will put sod on the meadow shown at the right. How many square feet of sod do they need?

- How many yards of fencing will be needed to enclose the meadow?



- What if the square were 12 ft by 12 ft? How much greater would the area of the entire meadow be?

Mixed Strategy Practice

- Look at the diagram above. What if the meadow had 2 more 6 ft by 6 ft squares, one on each side of the existing square. How much fencing would be needed to enclose the entire meadow?

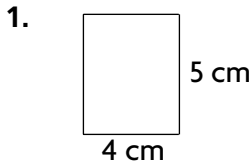
Vic's Souvenir Shoppe	
Supply	Cost
Palm Tree Lamp	\$25
Sissel Carpet	\$8/square foot
Border Fencing	\$15/yard
5-Foot Mango Light String	\$9

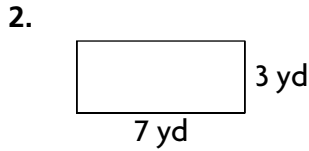
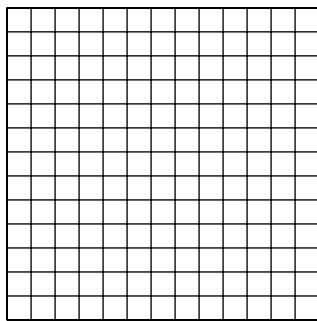
USE DATA For 5–8, use the table.

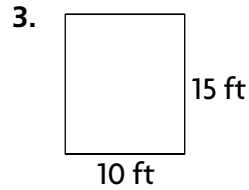
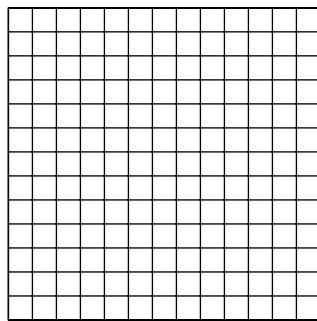
- Justine wants to string Mango lights from Vic's Souvenir Shop around a 7-foot square patio. How many strings of lights will she need?
- Wally bought 3 strings of Mango lights, a Palm Tree Lamp, and 3 yards of Border Fencing. How much change would he get from a \$100 bill?
- Grant bought a 5-by-8 piece of Sissel Carpet and 9 yards of Border Fencing. How much did he spend?
- Jenny bought a statue, a Palm Tree lamp, and a 3-by-12 foot Sissel Carpet. She spent \$348. How much did the statue cost?

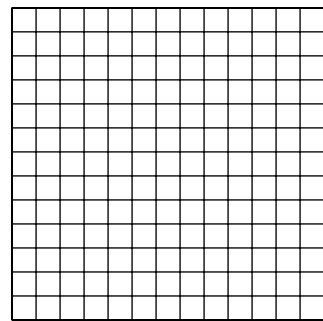
Relate Perimeter and Area

Find the area and perimeter of each figure. Then draw another figure that has the same perimeter but a different area.







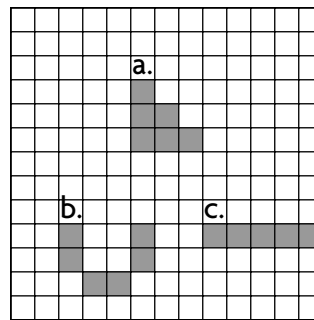


Problem Solving and Test Prep

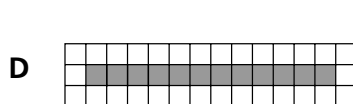
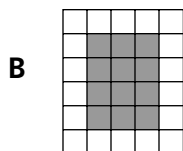
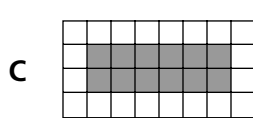
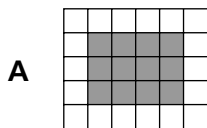
For 4–5, use figures a–c.

4. Which figures have the same area but different perimeters?

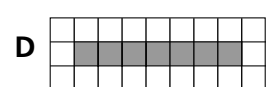
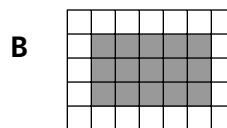
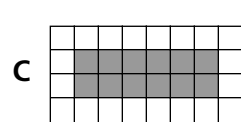
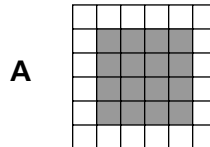
5. Which figures have the same perimeter but different areas?



6. The rectangles below have the same area. Which has the greatest perimeter?



7. The rectangles below have the same perimeter. Which has the greatest area?



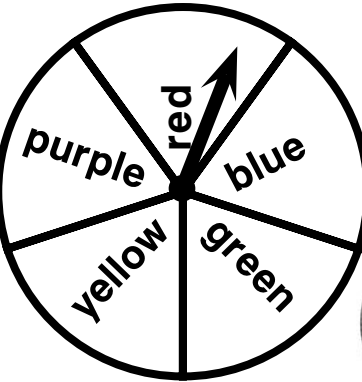
List All Possible Outcomes

USE DATA For 1–4, use the pictures. List all possible outcomes for each experiment.

1. spinning the pointer

2. tossing a quarter and a nickel

3. tossing a number cube and spinning the pointer



4. tossing the two coins and spinning the pointer

USE DATA For 5–8, use the table.

5. How many times did the outcome *Green*, 5 occur? _____

6. How many times did the outcome *Yellow*, 4 occur? _____

7. List all the possible outcomes of the experiment.

Ahmed's Experiment					
Spin the Pointer and Toss a Number Cube					
Number Cube	Colors				
	Red	Blue	Green	Yellow	Purple
1					
2					
3					
4					
5					
6					

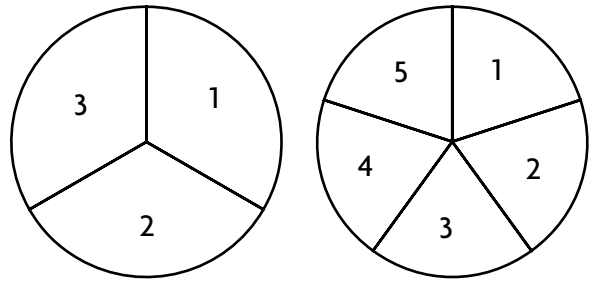
8. How many possible outcomes did Ahmed have by spinning the pointer and tossing the cube? _____

Problem Solving Workshop Strategy: Make an Organized List

Problem Solving Strategy Practice

USE DATA For 1–3, use the spinners. Make an organized list to solve.

1. Franco made these spinners for a school carnival game. What are the possible outcomes?



2. To win, Gloria must spin both pointers for a total more than 6. Name the ways Gloria can win.

3. Patty can win if she spins both pointers for a total of more than 5. Name the ways Patty can win.

Mixed Strategy Practice

4. Pedro is making cards for a game. Each type of card will be a different color. The suits will be hearts and flags. In each suit, there will be 3 sets: numbers, letters, and symbols. How many colors will there be?

5. **Open Ended** You probably made an organized list to solve Exercise 4. What is another strategy you could use to solve it? Explain.

6. Jorge’s father has driven his car 103,240 miles. His mother has driven hers 69,879. How much further has his father driven?

7. There are 110 students in fourth grade. Thirty-two take only music, 25 take only art, and 12 take both. How many students do not take art or music?

Make Predictions

Tell whether the event is *likely*, *unlikely*, *certain*, or *impossible*.

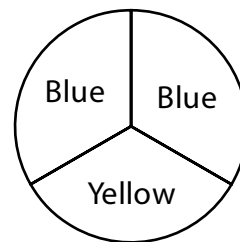
- Having the pointer land on blue on a spinner with equal sections of red, yellow, and green
- Tossing the number 2 on a cube numbered from 1 to 6

- Pulling a red tile from a bag that contains 6 red, 2 white, and 1 blue tile
- Having a pointer land on red on a spinner that is all red

For each experiment, tell whether Events A and B are *equally likely* or *not equally likely*. If they are not equally likely, name the event that is more likely.

- Experiment:
Toss a cube numbered 1–6.
Event A: tossing an odd number
Event B: tossing an even number

- Experiment:
Spin the pointer
Event A: blue
Event B: yellow

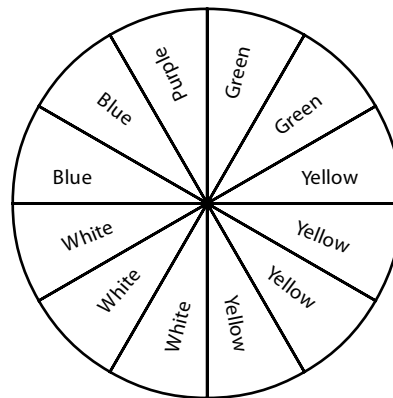


Problem Solving and Test Prep

USE DATA For 7–10, use the spinner.

- Which two events are equally likely?

- Which event is most likely?



- Which event is impossible?

- | | |
|----------------|-----------------|
| A brown | C purple |
| B blue | D green |

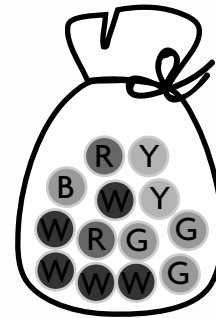
- Which event is least likely?

- | | |
|---------------|-----------------|
| A red | C purple |
| B blue | D green |

Probability as a Fraction

USE DATA For 1–4, use the equal-sized marbles. Write the probability as a fraction.

1. drawing a white marble _____
2. drawing an orange marble _____
3. drawing a red or a yellow marble _____
4. drawing a color that is not green _____



USE DATA For 5–6, use the equal-sized cards. Write the probability as a fraction. Then, tell whether each event is *certain*, *impossible*, *likely*, or *unlikely*.



5. pulling an L

6. pulling a B or an I

Problem Solving and Test Prep

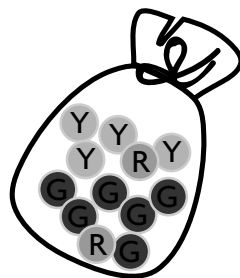
USE DATA For 7–8, use the equal-sized cards above.

7. What is the probability of pulling a C, F, or E?

8. What is the probability of pulling an A, P, R, O, L, or T?

9. All the marbles are the same size. What is the probability of pulling a green marble?

- A $\frac{1}{12}$
- B $\frac{1}{4}$
- C $\frac{1}{2}$
- D $\frac{3}{4}$



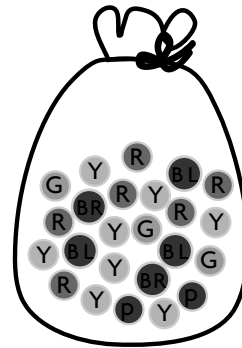
10. What is the likelihood of pulling a pink tile from a bag of pink tiles? Explain.

Experimental Probability

1. Toss a coin 20 times. Record outcomes in the tally table. Write as a fraction the experimental probability of heads.

Tally Table		
Outcome	Heads	Tails
Tally		

2. **Reasoning** Grant plans to pull a marble from the bag, returns it, and then choose another one 30 times. Grant predicts that he will pull a yellow marble 5 times. Do you agree with Grant's prediction? Why or why not?



3. Toss two coins thirty times. Make a tally table to record the outcomes. How close do you think your experimental probability is to the mathematical probability?

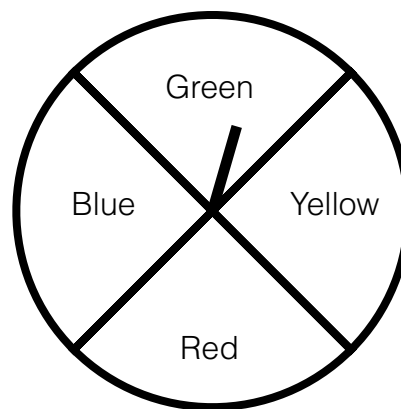
Tally Table				
Outcomes	Coin 1 Heads	Coin 1 Tails	Coin 2 Heads	Coin 2 Tails
Tally				

USE DATA For 4–6, use the spinner and the table.

4. What is the experimental probability of spinning blue? What is the mathematical probability?

5. What is the experimental probability of not spinning blue? What is the mathematical probability?

6. How does the experimental probability of spinning green or yellow compare to the mathematical probability of spinning them?

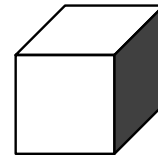


Maryellen's Results				
Outcomes	Blue	Red	Green	Yellow
Tally	### ##	###	###	### ###

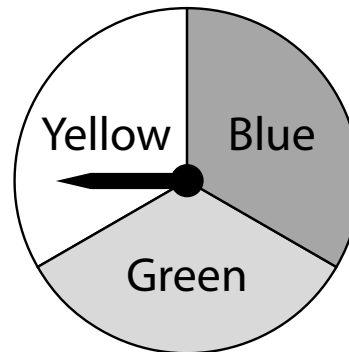
Tree Diagrams

USE DATA Make a tree diagram to solve. For 1–3, use the pictures.

- Charlie tosses a coin and a number cube numbered 1–6. What are the possible outcomes? How many outcomes show heads?



- Deb spins the pointer and tosses a number cube numbered 1–6. How many possible outcomes are there?



- How many outcomes from Exercise 2 show green on the spinner?

For 4–5, choose one of each. Find the number of possible outcomes by making a tree diagram.

- Event choices
Events: sports, play, movie
Day: Saturday, Sunday

- Footwear choices
Shoes: navy, black, brown
Socks: white, stripes, tan

Problem Solving and Test Prep

- Nora tosses a coin and spins a pointer with pink, yellow, brown, and orange sections. List all possible outcomes.

- Using the information from Exercise 6, how many outcomes show spinning pink or orange?

- Higgins the Clown has to choose one hat and one clown suit. How many different outcomes are possible? Use the table at the right.

SPIRAL REVIEW

CALIFORNIA HSP Math

Spiral Review

For 1–4, write the numbers in order from greatest to least.



1. 659; 671; 603

2. 567; 312; 410

3. 1,320; 1,412; 1,398

4. 3,050; 3,765; 3,246

For 8–10, use the data in the table.



Mr. Conrad's students voted for their favorite colors.

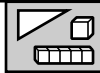
8. Which color had the fewest votes?

9. How many votes were there for red? _____

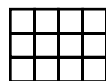
10. How many more students liked blue than green? _____

Color	Votes
Black	2
Blue	8
Green	5
Red	7
Yellow	4

For 5–7, find the area of each figure. Write the answer in square units.



5. _____



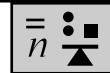
6. _____



7. _____



For 11–15, find the missing factor.



11. $\square \times 7 = 35$

12. $8 \times \square = 56$

13. $5 \times \square = 25$

14. $\square \times 8 = 72$

15. $8 \times \square = 16$

Spiral Review

1. Write the following number in word form: 200,065,001



2. Write the following number in standard form:
1,000,000 + 200,000 + 5,000 + 200

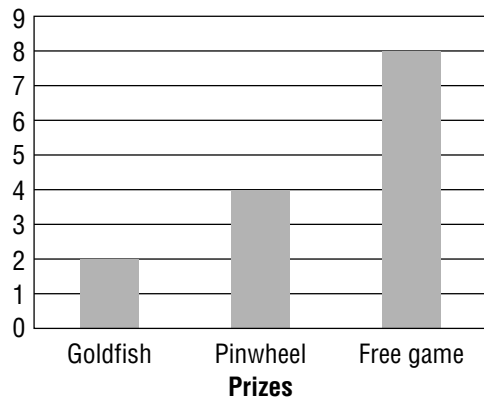
3. What is the value of the digit 6 in the number 8,609,712?

4. What is the value of the digit 2 in the number 5,789,235?

Use the graph below.

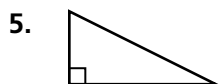
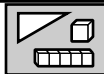


Prizes Won at the Ring Toss Game

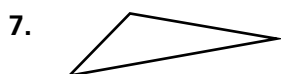


8. Which prize was won the *most* often? Which prize was won the *least* often?

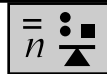
For 5–7, name each triangle by its angles.







For 9–13, find the product.



9. $(3 \times 3) \times 2 =$ _____

10. $4 \times (5 \times 1) =$ _____

11. $(2 \times 3) \times 8 =$ _____

12. $5 \times (4 \times 3) =$ _____

13. $7 \times (2 \times 6) =$ _____

Spiral Review

For 1–5, round each number to the place value of the underlined digit.

1. 1,794

2. 45,931

3. 713,702

4. 3,920,703

5. 9,779,999



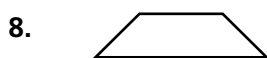
For 9–10, use the bag of tiles below.



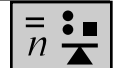
9. Stephen is going to pull one tile from the bag. What are the possible outcomes?

10. Is it *likely* or *unlikely* that Stephen will pull a striped tile?

For 6–8, name each quadrilateral.



For 11–15, find the missing numbers.



11. $7 + \square = 9$

12. $\square + 3 = 12$

13. $4 + 2 = \square$

14. $5 + \square = 8$

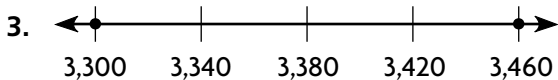
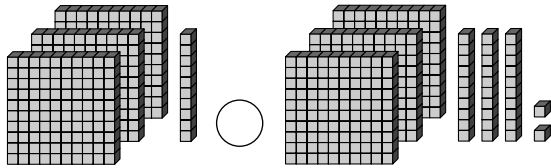
15. $\square + 3 = 10$

Spiral Review

For questions 1–4, compare using $<$, $>$, or $=$.



1. $5,327 \bigcirc 5,341$



$3,300 \bigcirc 3,460$

4. $9,304 \bigcirc 4,039$

For 5–7, name the solid figure that each object is shaped like.







For 8–10, use the table below to tell whether each event is *likely*, *unlikely*, or *impossible*.



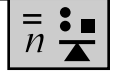
Warren's Bag of Marbles	
Solid	
Spotted	
Striped	

8. Warren will pull out a striped marble.

9. Warren will pull out a yellow marble.

10. Warren will pull out a solid marble.

For 11–12, write an expression. Then write an equation to solve.



11. Eliza and 8 of her friends went to the movies. Each paid \$7 for a movie ticket. How much did Eliza and her friends pay in all?

12. There were 22 children and 34 adults at the community swimming pool. How many people were at the pool in all?

Spiral Review

For 1–4, estimate. Then find the sum or difference.



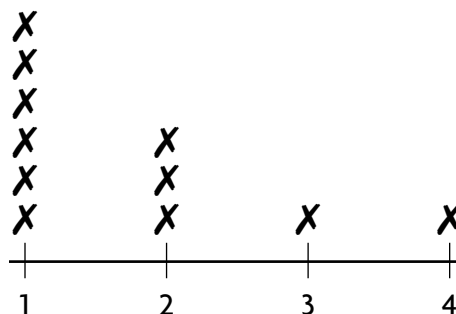
1. $2,345 + 1,179$

2. $4,845 - 2,954$

3. $9,678 - 928$

4. $6,429 + 3,218$

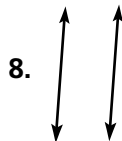
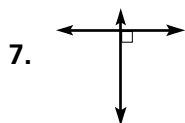
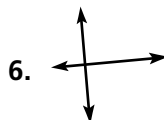
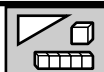
Erika asked her friends how many times they had been to the zoo. Her results are shown in the line plot below.



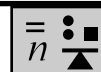
Visits to the Zoo

9. What is the range of the data shown in the line plot? _____
10. How many times have most of Erika's friends been to the zoo? How can you tell?
- _____
- _____

For 5–8, describe the lines. Write *intersecting* or *parallel*.



For 11–14, identify each property of addition. Write *Commutative*, *Associative*, or *Identity*.



11. $13 + 4 = 4 + 13$

12. $79 + 0 = 79$

13. $7 + (9 + 8) = (7 + 9) + 8$

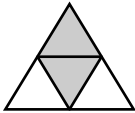
14. $23 + 19 = 19 + 23$

Spiral Review

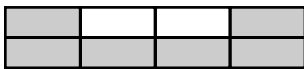
For 1–2, write a fraction in numbers and in words that names the shaded part.



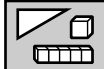
1.



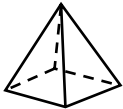
2.



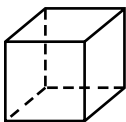
For 3–5, name the solid figure. Then tell how many faces.



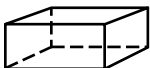
3.



4.



5.



For 6–8, tell whether each event is *certain*, *likely*, *unlikely* or *impossible*.



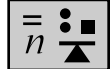
Mandy has a bag filled with 25 tiles. There are 12 blue, 2 green, 4 yellow, and 7 red tiles.

6. pulling a blue tile _____

7. pulling a green tile _____

8. pulling an orange tile _____

For 9–12, tell which operation to do first. Then find the value of each expression.



9. $(9 - 8) + 19$

10. $3 + (23 + 13)$

11. $(34 - 6) - 12$

12. $49 - (37 + 12)$

Spiral Review

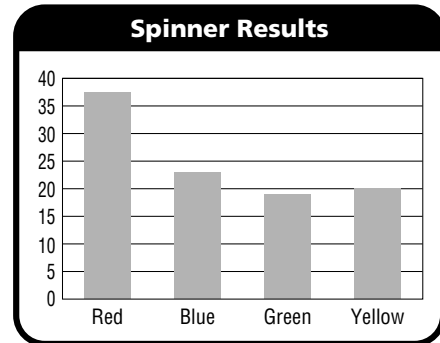
For 1–2, tell whether you need an exact answer or an estimate. Then solve.



- There are 800 students going on the class picnic trip by bus. One bus can carry 64 people. How many buses are needed?

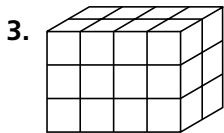
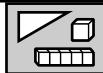
- Ana bakes 6 pizzas for a party. Each pizza serves about 12 people. About how many people will Ana's pizzas serve?

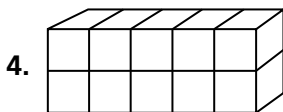
For 6–7, use the graph below.

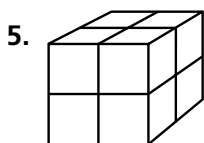


- Which color did the spinner stop on most often? _____
- Kim is going to spin a spinner. Predict which color it will probably stop on.

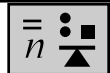
For 3–5, find the surface area of each solid figure.







For 8–11, multiply both sides of the equation by the given number. Find the new values.



8. $(15 - 9) = (3 \times 2)$; multiply by 5

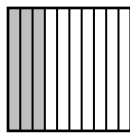
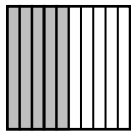
9. $(4 + 4) = (56 \div 7)$; multiply by 3

10. $(36 - 24) = (4 \times 3)$; multiply by 7

11. $(12 - 2) = (2 \times 5)$; multiply by 9

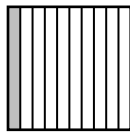
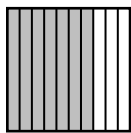
Spiral Review

For 1–4, write the fraction and decimal for each shaded part.



1. _____

2. _____



3. _____

4. _____

For 8–9, use an organized list to solve.

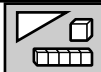


At a sandwich bar, you can choose white or wheat bread, cheddar or Swiss cheese, and ham or turkey.

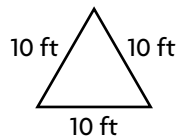
8. Find all the possible sandwich combinations. How many are there?

9. How did making an organized list help you solve this problem?

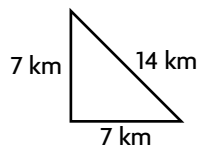
For 5–7, name each triangle by the length of its sides.



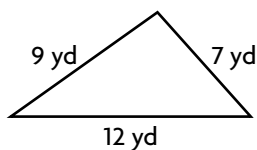
5.



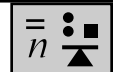
6.



7.



For 10–13, find the missing factor.



10. $6 \times t = 42$

11. $m \times 10 = 80$

12. $h \times 12 = 60$

13. $7 \times y = 49$

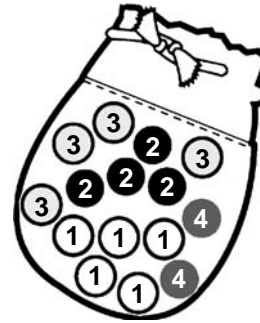
Spiral Review

For 1–5, estimate. Then find the product.



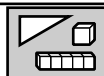
1. $70 \times 590 =$ _____
2. $63 \times 801 =$ _____
3. $1,234 \times 50 =$ _____
4. $\$44.19 \times 21 =$ _____
5. $\$90 \times 7932 =$ _____

For 10–12, use the bag of marbles below.



10. Which outcome is most likely? _____
11. Which outcome is least likely? _____
12. Which outcomes are equally likely?

For 6–9, tell if each angle is right, obtuse or acute.

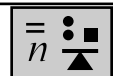


6. _____ 7. _____



8. _____ 9. _____

For 13–16, write an expression with a variable. Tell what the variable represents.



13. 2 times a number of marbles

14. some books separated into 5 equal piles

15. some pennies divided equally among 7 students

16. a number of socks times 30

Spiral Review

For 1–4, find the sum or difference. Write the method you used.



1.
$$\begin{array}{r} 4,986 \\ +3,578 \\ \hline \end{array}$$

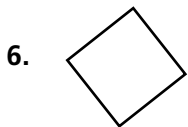
2.
$$\begin{array}{r} 78,005 \\ -62,000 \\ \hline \end{array}$$

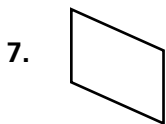
3.
$$\begin{array}{r} 57,692 \\ -42,128 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 87,002 \\ +12,000 \\ \hline \end{array}$$

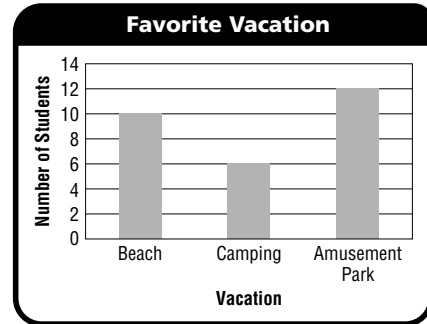
For 5–7, name each quadrilateral.







For 8–10, use the bar graph below.

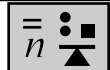


- Which vacation got the most votes?

- Which vacation got the least votes?

- How many more votes did the beach get than camping?

For 11–15, follow the order of operations to find the value of each expression.



11. $3 + 5 \times 2$

12. $4 \times 3 + 2$

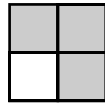
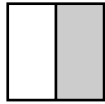
13. $36 + 7 \div 7$

14. $18 - 12 + 3$

15. $12 - 3 \div 3$

Spiral Review

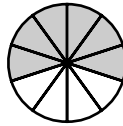
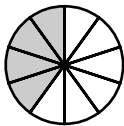
For 1–2, compare. Write $<$, $>$, or $=$ for each \bigcirc .



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



$\frac{3}{4}$



2. $\frac{4}{10}$



$\frac{6}{10}$



For 6–7, use the table.

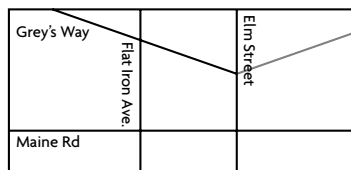


Samantha's Sock Drawer	
Color	Number of Socks
Black	6
Blue	2
White	10

6. Is it *likely* or *unlikely* that Samantha will pull one white sock from her drawer?

7. Is it *likely* or *unlikely* that Samantha will pull one blue sock from her drawer?

For 3–5, use the map.

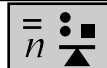


3. Which street appears to be parallel to Elm street?

4. Which streets appears to intersect Maine Rd?

5. Which streets appears to intersect Grey's Way?

For 8–13, complete to make the equation true.



8. $2 + \square + 7 = 5 + 7$

9. $1 + 9 - 5 = \square - 5$

10. $25 - 15 - \square = 10 - 6$

11. $4 + 3 + 2 = \square + 2$

12. $12 - 4 + 2 = \square + 2$

13. $\square - 8 + 2 = 13 + 2$

Spiral Review

For 1–4, divide.

Write the method you used.



1. $268 \div 4$

2. $6,442 \div 2$

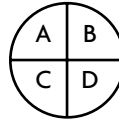
3. $9 \overline{)810}$

4. $7 \overline{)3,976}$

For 9–11, list the possible outcomes for each object.



9.



10.

1	2	3
4	5	6

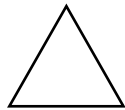
11.



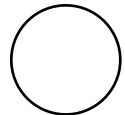
For 5–8, tell if each figure is a polygon. Write *yes* or *no*.



5. _____



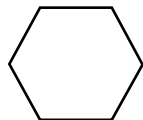
6. _____



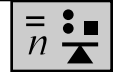
7. _____



8. _____



For 12–15, use the rule and equation to fill in the input/output table.



12. add three, $l + 3 = k$

Input	l	1	2	3	4
Output	k				

13. subtract 3, $g - 3 = h$

Input	g	3	4	5	6
Output	h				

14. add 15, $r + 15 = t$

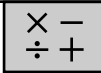
Input	r	5	6	7	8
Output	t				

15. subtract 10, $w - 10 = z$

Input	w	10	15	20	25
Output	z				

Spiral Review

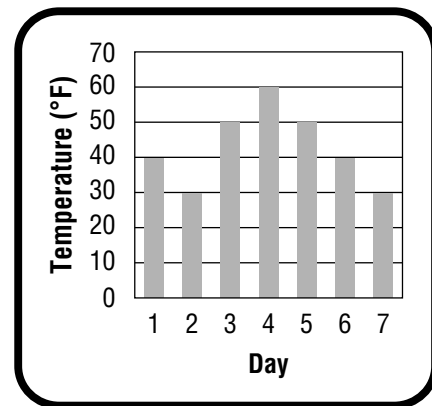
For 1–2, solve a simpler problem.



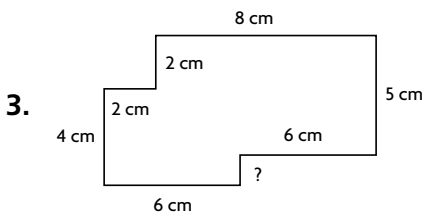
- Mrs. Torino’s class sold wrapping paper to raise money for a field trip to the marine park. For each roll of paper that they sold, they earned \$1.50. The class sold 52 rolls of paper. How much money did they raise?

- For a snack, Jill is going to serve cookies. Each person will get 3 cookies. If there are 63 people, how many cookies will Jill need?

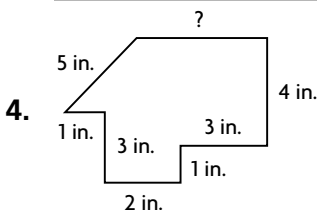
- The bar graph below shows the temperatures recorded at the same time each day for seven days. Based on the data, what is the temperature on Day 4?



For 3–4, find the missing length.

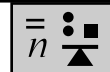


Perimeter = 34 cm



Perimeter = 24 in.

For 6–10, find the value of each expression if $x = 2$ and $y = 7$.



6. $7 + x$

7. $12 - y$

8. $36 - (x + y)$

9. $(y + 2) - x$

10. $14 + x$

Spiral Review

For 1–4, write the numbers in order from greatest to least.



1. 632,296; 69,999; 620,955

2. 787,529; 1,000,056; 700,189

3. 56,977; 59,000; 55,036

4. 8,325; 8,835; 8,915

For 8–11, tell whether the data is numerical or categorical data.



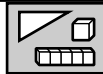
8. colors of bikes

9. number of As on a test

10. votes for class president

11. favorite animals

For 5–7, name the figure that each object is shaped like.



5. _____



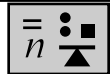
6. _____



7. _____



For 12–17, find the product.



12. $(5 \times 3) \times 6 =$ _____

13. $9 \times (8 \times 0) =$ _____

14. $7 \times (9 \times 1) =$ _____

15. $(4 \times 2) \times 4 =$ _____

16. $10 \times (1 \times 2) =$ _____

17. $0 \times (2 \times 2) =$ _____

Spiral Review

For 1–4, estimate by using rounding.



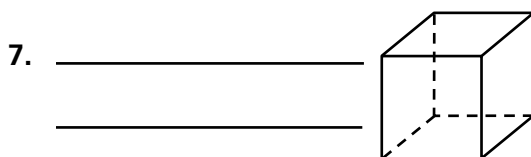
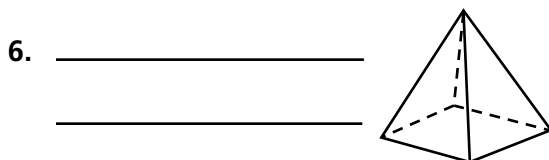
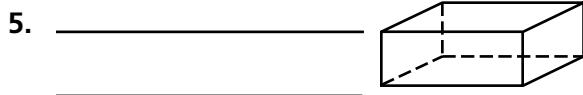
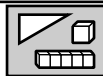
1. $19,526 + 11,062$

2. $8,263 - 4,829$

3. $268,099 - 133,526$

4. $332,185 + 398,626$

For 5–7, name the solid figure. Then tell how many faces.



For 8–10, use the data tables below.



Average High Temperature					
Month	Apr	May	Jun	Jul	Aug
Temperature	79°F	85°F	91°F	95°F	96°F

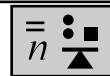
8. What is the median of the data?

Average Low Temperature					
Month	Apr	May	Jun	Jul	Aug
Temperature	55°F	55°F	61°F	64°F	70°F

9. What is the median of the data?

10. What is the mode of the data?

For 11–14, solve the equation.



11. $c \div 5 = 9$

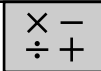
12. $8 \times f = 56$

13. $32 \div x = 8$

14. $7 \times a = 49$

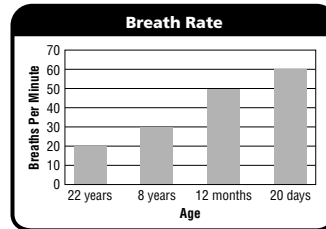
Spiral Review

For 1–5, estimate the product. Choose the method.



1. $68 \times 24 =$ _____
2. $89 \times 37 =$ _____
3. $52 \times 46 =$ _____
4. $79 \times 467 =$ _____
5. $30 \times 115 =$ _____

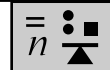
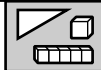
For 9–10, use the bar graph.



9. Ethan breathes at a rate of 33 breaths per minute. Is he closer in age to 12 months or 8 years?

10. Phillip breathes at a rate of 47 breaths per minute, and Safia breathes at a rate of 25 breaths per minute. Who is older?

For 6–8, find the length of each line segment.



6. _____
7. _____
8. _____

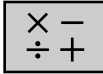
For 11–14, add to or subtract from both sides of the equation. Find the new values.

11. Add 8.
 $7 + 3 = 10$ _____
12. Subtract 5.
 $8 - 3 + 3 = 5 + 3$ _____
13. Add 11.
 $7 - 3 - 1 = 15 - 11 - 1$

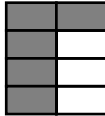
14. Subtract 10.
 $28 + 2 + 3 = 5 + 20 + 8$

Spiral Review

For 1–3, write a fraction for the shaded part. Write a fraction for the unshaded part.



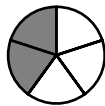
1.



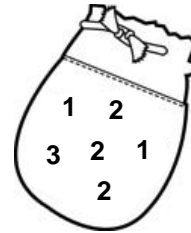
2.



3.



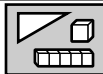
For 6–7, use the bag of numbered tiles below.



6. What are the possible outcomes for pulling one numbered tile from the bag?

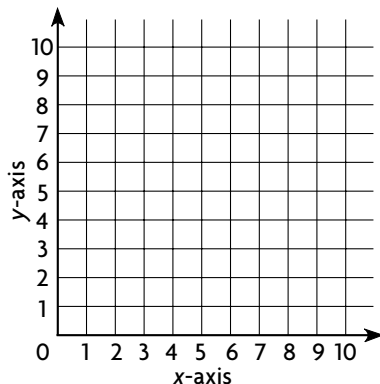
7. What is the probability of pulling a 1 from the bag?

4. Complete the table for the equation: $y = x + 2$

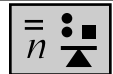


Input, x	1	2	3	4	5	6	7	8
Output, y								

5. Graph the equation on the coordinate grid.



For 8–11, multiply both sides of the equation by the given number. Find the new values.



8. $(2 + 5) = (4 + 3)$; multiply by 2

9. $(4 \times 4) = (32 \div 2)$; multiply by 3

10. $(9 \div 3) = (7 - 4)$; multiply by 5

11. $(35 - 25) = (9 + 1)$; multiply by 6

Spiral Review

For 1–4, write two equivalent fractions for each.



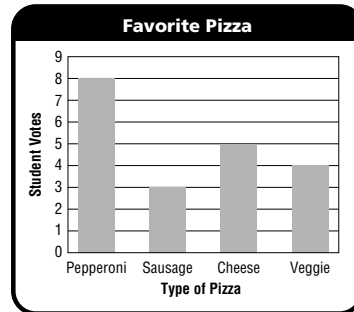
1. $\frac{1}{5}$ _____

2. $\frac{2}{6}$ _____

3. $\frac{7}{14}$ _____

4. $\frac{6}{7}$ _____

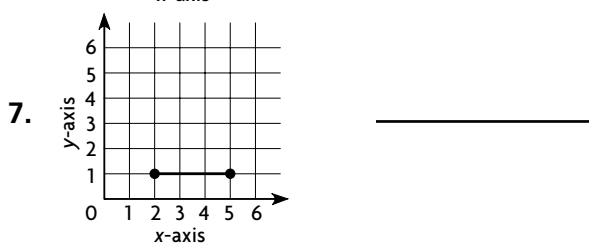
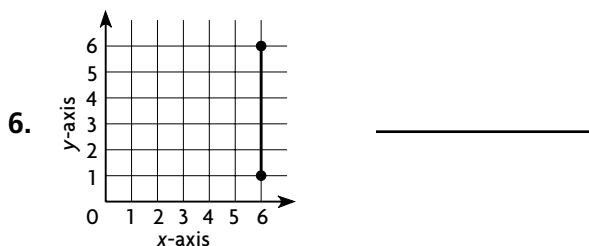
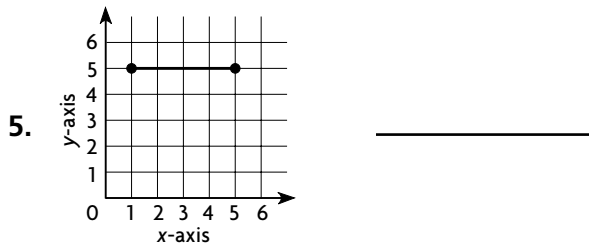
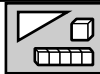
For 8–9, use the bar graph.



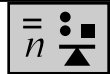
8. Which type of pizza got the most votes? _____

9. If three more students voted for veggie pizza, how would you show that on the graph?

For 5–7, find the length of each line segment.



For 10–15, find the missing factor.



10. $8 \times \square = 40$

11. $\square \times 12 = 24$

12. $7 \times \square = 21$

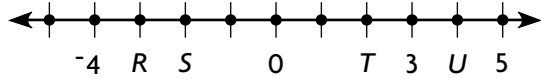
13. $\square \times 3 = 18$

14. $\square \times 4 = 36$

15. $4 \times \square = 40$

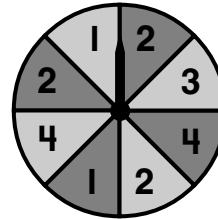
Spiral Review

For 1–4, name the number represented by each letter.



1. R _____
2. S _____
3. T _____
4. U _____

For 7–9, use the spinner below. Tell whether each event is *likely*, *unlikely*, or *impossible*.



7. The pointer will land on 2.

8. The pointer will land on 3.

9. The pointer will land on 5.

For 5–6, use the relationship between plane and solid figures to solve.



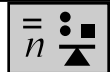
5. For her drawing, Melody traces around the bottom of a cone. What plane figure is Melody creating?

6. Sam wants to make the following design by stamping shapes onto paper using only 1 solid figure.



To make both of the plane figures in his design, what solid figure should Sam use?

For 10–15, find the product.



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

11. $(6 \times 2) \times 2$

12. $3 \times (2 \times 2)$

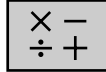
13. $9 \times (1 \times 4)$

14. $8 \times (2 \times 4)$

15. $1 \times (9 \times 9)$

Spiral Review

For 1–3, write each fraction as a decimal. You may draw a picture.



1. $\frac{1}{2}$ _____

2. $\frac{1}{10}$ _____

3. $\frac{3}{4}$ _____

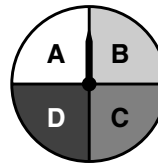
For 7–10, list the possible outcomes for each.



7. Elena rolls a cube numbered 1–6. 8. Jimena flips a coin.



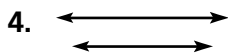
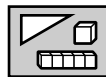
9. Trang spins a spinner.

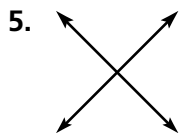


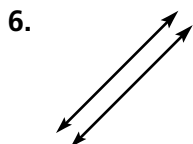
10. Chris pulls a tile.



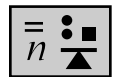
For 4–6, describe the lines. Write *intersecting* or *parallel*.







For 11–15, follow the order of operations to find the value of each expression.



11. $(4 + 7) + 3 \times 2$

12. $(3 + 2 + 7) \div 4$

13. $(24 - 18) \times (2 + 5)$

14. $(19 - 12) + 4 \times 5$

15. $2 \times 3 \div (4 - 2)$

Spiral Review

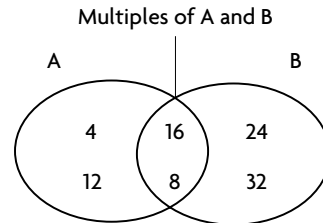
For 1–2, draw conclusions to solve the problem.



- Jill lives 5.6 miles from school.
Gretchen lives 5.1 miles from school.
Henry lives 5.9 miles from school.
Who lives closest to school?

- Binder's Office Supply sells notebook binders at 2 for \$10.00. The Office sells the same binders for \$6.00 each.
Which store has the better price?

For 6–7, complete the Venn diagram below.



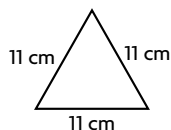
- What labels should you use for section A and section B?

- In which section would you sort the number 48?

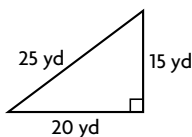
For 3–5, classify each triangle. Write *isosceles*, *scalene*, or *equilateral*. Then write *right*, *acute*, or *obtuse*.



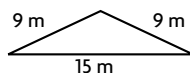
- _____



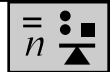
- _____



- _____



For 8–10, find a rule. Write the rule as an equation. Use the equation to extend the pattern.



- | | | | | | |
|--------|-----|----|----|----|----|
| Input | a | 14 | 28 | 42 | 56 |
| Output | b | 21 | 35 | | |

- | | | | | | |
|--------|-----|-----|----|----|----|
| Input | x | 100 | 80 | 60 | 40 |
| Output | y | 90 | 70 | | |

- | | | | | | |
|--------|-----|-----|----|----|----|
| Input | k | 104 | 78 | | |
| Output | m | 91 | 65 | 39 | 13 |

Spiral Review

For 1–4, round each number to the nearest tenth and each money amount to the nearest dollar.



1. 8.92 _____

2. \$92.25 _____

3. 21.21 _____

4. 56.79 _____

For 7–8, use the data chart below.

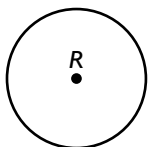
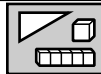


Average Rainfall	
Jan	2 inches
Feb	4 inches
Mar	7 inches
Apr	7 inches
May	5 inches

7. What is the median of the data?

8. What is the mode of the data?

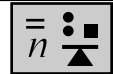
For 5–6, draw each of the following in circle R below.



5. radius RS

6. diameter QS

For 9–14, complete to make the equation true.



9. $11 - 4 = 5 + 6 - \square$

10. $17 + \square = 9 + 8 + 1$

11. $12 - \square + 5 = 5 + 5$

12. $5 + \square = 5 + 10 + 1$

13. $12 - 6 + 9 = 12 + \square$

14. $\square + 1 = 11 + 5 + 1$

Spiral Review

For 1–4, tell where to place the first digit. Then divide.



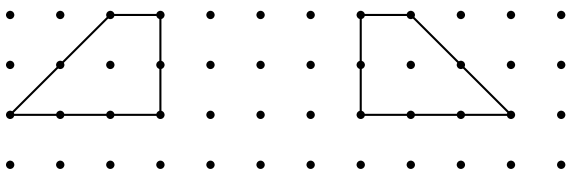
1. $5 \overline{)343}$ _____

2. $366 \div 2$ _____

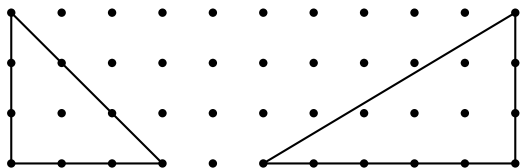
3. $4 \overline{)599}$ _____

4. $168 \div 2$ _____

For 5–6, tell whether the two figures are *congruent* or *not congruent*.



5. _____



6. _____

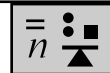
7. Below is a chart that tells how long it takes Freddy to run up to 5 miles. Make a line graph using the data below.



Mile	1	2	3	4	5
minutes	8	16	24	32	40

8. How long would it take Freddy to run 6 miles?

For 9–11, use the rule and equation to make an input/output table.



9. add 3; $x + 3 = y$

Input, x	1	2	3	4	5
Output, y					

10. subtract 4; $x - 4 = y$

Input, x	10	9	8	7	6
Output, y					

11. add 25; $x + 25 = y$

Input, x	5	10	15	20	25
Output, y					

Spiral Review

For 1–4, find all the factors of each product. You may use arrays.



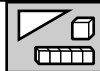
1. 18

2. 25

3. 36

4. 12

For 5–7, name the top view, front view, and side view of each solid figure.



5. a cone

6. a sphere

7. a triangular pyramid

For 8–10, use the data below to find the probability of each event. Write your answers as fractions.



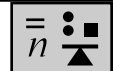
Tiles In a Bag	
Color Tile	Number of Tiles
Red	12
Blue	9
Yellow	4
Green	6

8. Pulling a red tile _____

9. Pulling a green tile _____

10. Pulling a blue tile _____

For 11–15, use the multiplication properties and mental math strategies to find the product.



11. $3 \times (0 \times 4) =$ _____

12. $(5 \times 2) \times 7 =$ _____

13. $(4 \times 3) \times 5 =$ _____

14. $(9 \times 1) \times 4 =$ _____

15. $0 \times (4 \times 8) =$ _____

Spiral Review

For 1–4, estimate. Then find the sum or difference.



1.
$$\begin{array}{r} 216 \\ +5,998 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 654 \\ -328 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 8,212 \\ -2,093 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 1,527 \\ +1,633 \\ \hline \end{array}$$

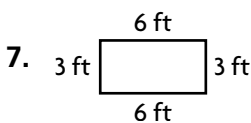
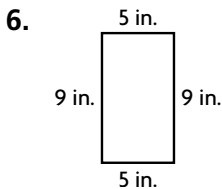
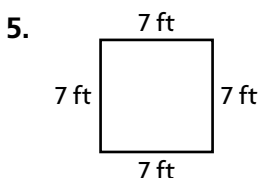
8. Audrey is a ski instructor. For her uniform, she was given a red ski jacket and a green jacket. She was also given red ski cap and a green cap. Make an organized list of the possible combinations of clothes she was given.



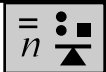
Color of Ski Jackets	Color of Ski Caps

9. How many possible combinations are there?

For 5–7, find the area and perimeter of each figure. Then draw another figure that has the same perimeter but a different area.



For 10–12, use the equation to complete each function table.



10. $y = 2x + 4$

Input, x	2	4	6	8	10
Output, y					

11. $(x \div 4) + 3 = y$

Input, x	8	12	16	20	24
Output, y					

12. $(x \times 5) - 5 = y$

Input, x	2	3	4	5	6
Output, y					

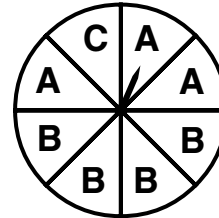
Spiral Review

For 1–5, write *prime* or *composite* for each number.



1. 45 _____
2. 7 _____
3. 81 _____
4. 13 _____
5. 25 _____

For 8–10, use the spinner below.

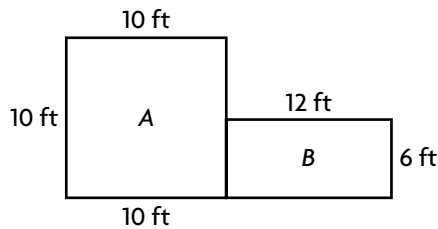
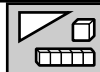


8. Which outcome is most likely?

9. Is an outcome of "D" possible?

10. Which outcome is least likely?

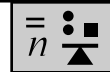
For 6–7, use the diagram below.



6. Gil wants to put a fence around part B of his house. How much fencing does Gil need?

7. Now, Gil wants to fill part A with tile. First, Gil needs to know the area of part A. What is the area of part A?

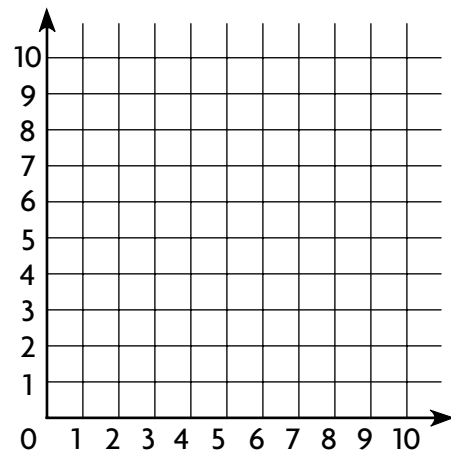
11. Complete the table, using values of 1 through 5 for x , for the following equation:



$$x + 2 = y$$

Input, x					
Output, y					

12. Now graph the equation on the coordinate grid below.



Spiral Review

For 1–5, estimate. Then find the product.

1.
$$\begin{array}{r} 196 \\ \times 10 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 384 \\ \times 69 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 877 \\ \times 36 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 7,200 \\ \times 19 \\ \hline \end{array}$$

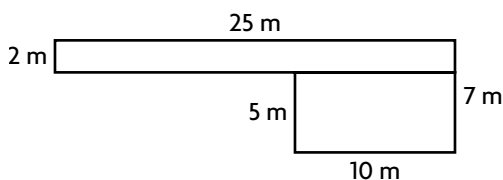


7. Sean is given a bag of plastic chips. There is 1 red, 1 black, and 1 green chip. If Sean picks 1 chip out of the bag and puts it back, and then picks another chip out of the bag, what are all of the possible color combinations that Sean can choose? Make an organized list.



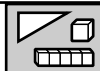
8. How many possible outcomes does Sean have?

For 5–6, solve a simpler problem.

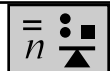


5. What is the total area of the figure?

6. What is the perimeter of the figure?



For 9–13, tell what you do first. Then find the value of each expression.



9. $12 + (11 - 3) =$ _____

10. $(7 + 9) - 14 =$ _____

11. $25 - (13 + 1) =$ _____

12. $(11 - 2) + 14 =$ _____

13. $37 - (19 + 4) =$ _____

Spiral Review

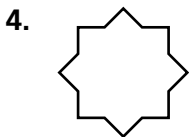
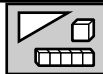
For 1–2, tell whether you need an exact answer or an estimate. Then solve.



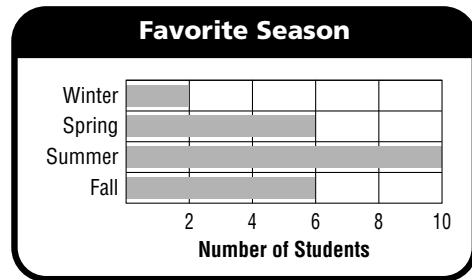
1. Bianca is writing an article for her school newspaper. So far she has written 362 words. The article cannot be more than 800 words. How many more words can Bianca write in her article?

2. Lauren found 212 seashells at a beach in Florida. She found half the amount of seashells at a beach in Maine. About how many fewer seashells did Lauren find at the beach in Maine?

For 3–5, tell whether the figure appears to have *line symmetry*, *rotational symmetry*, *both*, or *neither*.



For 6–8, use the bar graph.

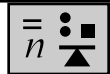


6. Which season was chosen by the fewest students?

7. Which two seasons were chosen by the same number of students?

8. What interval is used on the scale?

For 9–14, solve the equation.



9. $11 + x = 21$

10. $12 - y = 4$

11. $\square - 13 = 26$

12. $26 + \square = 52$

13. $n - 5 = 50$

14. $34 - d = 22$

Spiral Review

For 1–6, write the numbers in order from least to greatest.



1. 1,904; 1,494; 1,600

2. 1,900,451; 11,825,000; 1,900,541

3. 6,991; 68,114; 6,000,348

4. 73,458; 73,485; 73,084

5. 996,000; 969,001; 9,900,000

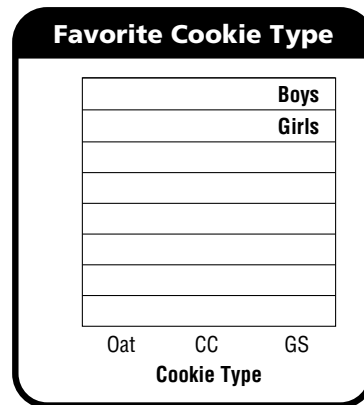
6. 83,001,758; 83,100; 82,100,758

For 9, use the data to make a double-bar graph.

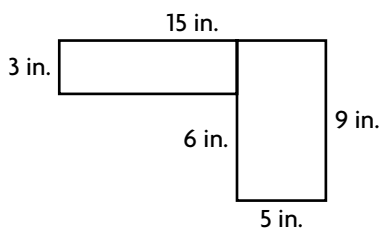


Favorite Cookie Type		
	Boys	Girls
Oatmeal	4	6
Chocolate Chip	12	8
Ginger Snap	2	4

9.



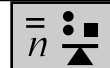
For 7–8, solve a simpler problem.



7. What is the total area of the figure?

8. What is the total perimeter of the figure?

For 10–13, write the value of each expression.



10. $32 + 9 - (9 \times 4)$

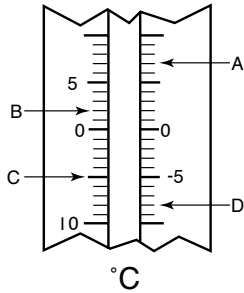
11. $2 \times (5 + 2) \times 2$

12. $(12 \div 3) + (7 \times 2)$

13. $(21 + 4) \div 5$

Spiral Review

For 1–4, use the thermometer to find the temperature shown by each letter.



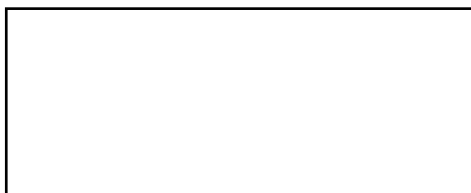
1. A _____
2. B _____
3. C _____
4. D _____

For 5–6, draw two examples of each quadrilateral in the box below.

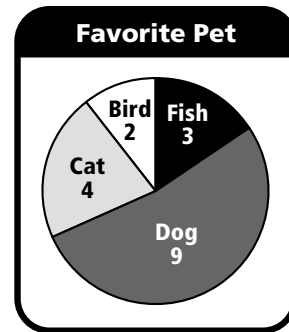
5. It has no parallel sides.



6. It has 4 equal sides.



For 7–9, use the Favorite Pet graph.



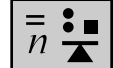
7. Which pet received the most votes?

8. Which pet received 4 votes?

9. How many people voted in all?



For 10–15, find the value of the variable. Then write a related sentence.



10. $9 \times c = 45$

11. $36 \div x = 6$

12. $a \div 3 = 7$

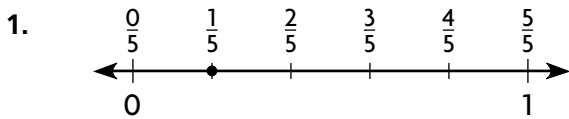
13. $6 \times 6 = n$

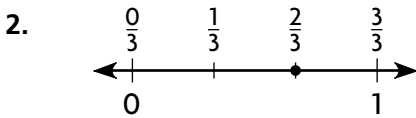
14. $t \div 9 = 9$

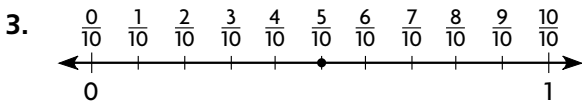
15. $4 \times r = 24$

Spiral Review

For 1–3, write two equivalent fractions for each number line.





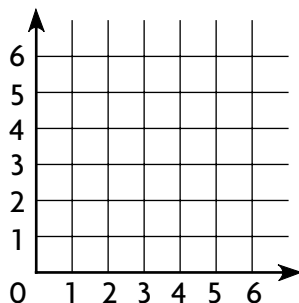


For 4, make a table using values of 1 through 5 for x . Then graph the equation.

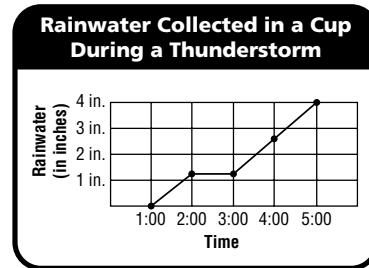


4. $y = x + 1$

x	1	2	3	4	5
y					



For 5–7, use the graph.

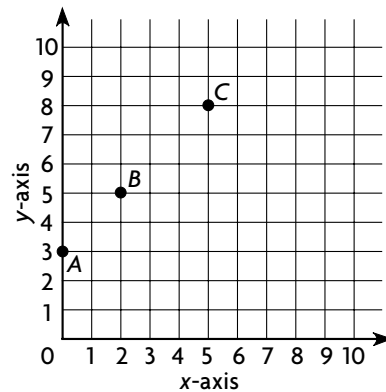
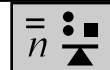


5. How many inches of rain were in the cup at 5:00?

6. At what time did the cup contain 3 inches of rainwater?

7. What can you conclude about the rainfall between 2:00 and 3:00?

For 8–11, use the grid below. Write the ordered pair for each point.



8. A _____

9. B _____

10. C _____

11. What is the rule? _____

Spiral Review

For 1–6, find the sum or difference.



1.
$$\begin{array}{r} 16,733 \\ + 67,001 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 370,400 \\ + 466,989 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 98,532 \\ - 77,226 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 200,000 \\ - 100,060 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 900,040 \\ - 200,020 \\ \hline \end{array}$$

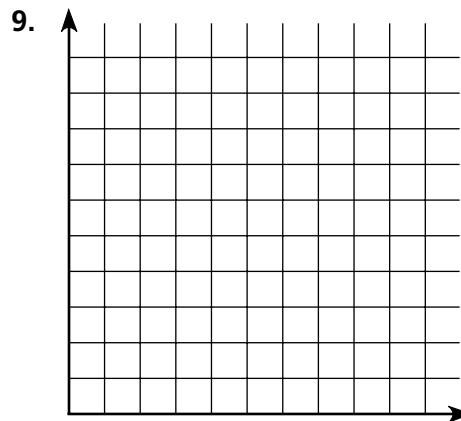
6.
$$\begin{array}{r} 890,000 \\ + 267,600 \\ \hline \end{array}$$

For 9, use the data to make a line graph.

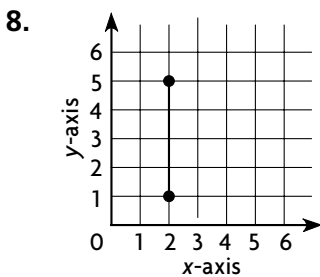
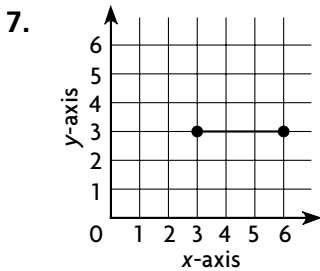


Filling Up Mario's Swimming Pool

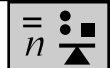
Time	1:00	4:00	6:00	8:00
Water in feet	1	3	5	7



For 7–8, find the length of each line segment.



For 10–14, tell whether each equation is true. If not, explain why.



10. $(11 - 6) \times 3 = 5 \times 3$

11. $(9 - 4) \times 5 = (3 + 2) \times 5$

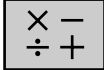
12. $(1 \times 6) \times 6 = (2 + 3) \times 6$

13. $(36 \div 6) \times 2 = (49 \div 7) \times 2$

14. $(64 \div 8) \times 2 = (56 \div 7) \times 2$

Spiral Review

For 1–5, choose a method.
Then find the product.



1. $80 \times 23 =$ _____

2. $67 \times 30 =$ _____

3. $33 \times 90 =$ _____

4. $45 \times 50 =$ _____

5. $11 \times 20 =$ _____

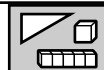


Favorite Fruit	
Fruit	Number of Votes
Apples	16
Bananas	16
Oranges	12

10. Make a bar graph using the information in the table above.

11. What is another type of graph you could use to represent this data?

For 6–9, name a geometric term that best represents the object. Use the terms *line*, *plane*, *point*, and *ray*.

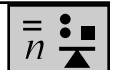


6. highway _____

7. center of a clock _____

8. shooting arrow _____

9. flag _____



For 12–16, find the missing number. Tell which addition property you used.

12. $31 + \square = 31$

13. $35 + \square = 23 + 35$

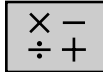
14. $12 + (19 + 9) = (12 + 19) + \square$

15. $\square + 191 = 191$

16. $\square + (19 + 100) = (11 + 19) + 100$

Spiral Review

For 1–5, estimate.
Then find the product.



1.
$$\begin{array}{r} 95 \\ \times 11 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 618 \\ \times 49 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 904 \\ \times 89 \\ \hline \end{array}$$

4. $18 \times \$5.66$

5. 37×292

For 8–10, choose the best type of graph or plot for the data.
Explain your choice.

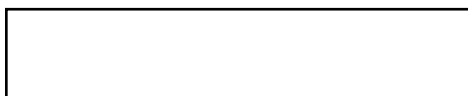
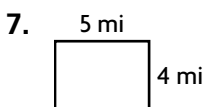
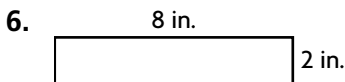
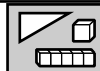


8. How long it took Marie to fill up her pool

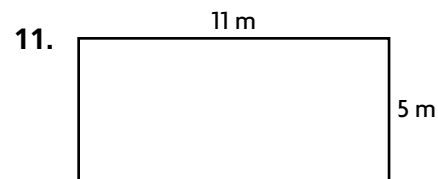
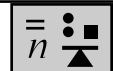
9. How Mikela spent \$20 at the mall

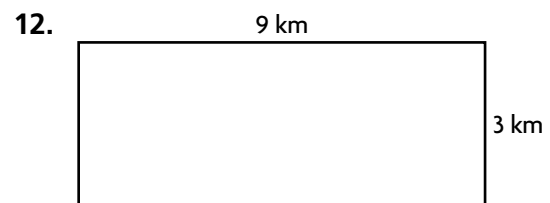
10. The average inches of snow in Ben's backyard each month

For 6–7, find the area and perimeter of each figure. Then draw another figure that has the same perimeter but a different area.



For 11–12, use $A = lw$ to find the area.





Spiral Review

For 1–5, divide. You may wish to use counters or draw a picture to help.



1. $16 \div 3$

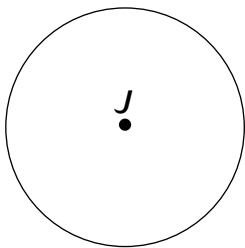
2. $95 \div 2$

3. $6 \overline{)38}$

4. $7 \overline{)52}$

5. $9 \overline{)84}$

For 6–7, label each of the following on circle J .



6. radius JP

7. diameter LM

For 8–10, list all the possible outcomes of each experiment.

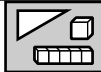


8. tossing a quarter

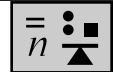
9. spinning the pointer of a spinner with a red, yellow, green, and blue section

10. tossing a quarter and spinning the same pointer

For 6–7, label each of the following on circle J .



For 11–16, find the value of each expression if $x = 6$ and $y = 3$.



11. $y + 9$

12. $11 + (x - 5)$

13. $(y + 8) - 2$

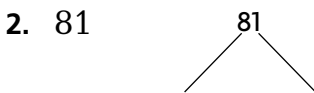
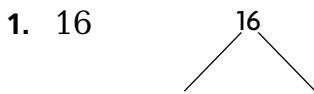
14. $(x - y) + 10$

15. $(x + 15) - y$

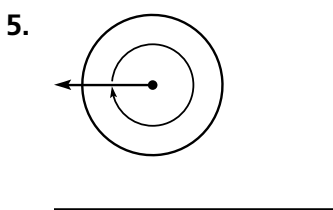
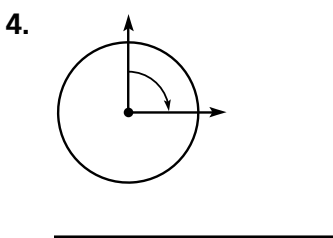
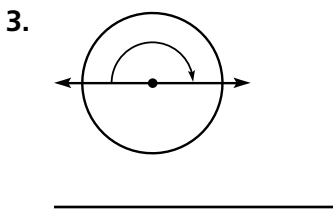
16. $36 - (x + y)$

Spiral Review

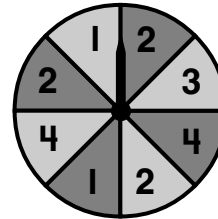
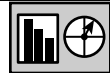
For 1–2, complete the factor tree to find the prime factors.



For 3–5, tell whether the rays on the circle show a $\frac{1}{4}$, $\frac{1}{2}$, or full turn. Then identify the number of degrees the rays have been turned.



For 6–8, use the spinner to find the probability of each event. Write the answers as fractions.

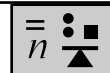


6. spinning a 2

7. spinning a 3

8. spinning a 4

For 9–10, write an equation. Then work backward to solve.



9. The Lion Preserve has many lions. This month, 3 were transferred to a local zoo. Later in the month, 4 were added, making 10 lions in all. How many lions were there at the beginning of the month?

10. Tina received 4 toy cars for her birthday. She gave away 5. She now has 9 toy cars. How many cars did Tina have before her birthday?

