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California Mathematics 4

Reteach and Skills Practice Workbook

Contents Include:

- 119 reteach worksheets—one for each lesson
- 119 skills practice worksheets—one for each lesson to reinforce each reteach concept

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California Mathematics 4

Reteach and Skills Practice

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TO THE STUDENT This *Reteach and Skills Practice Workbook* gives you additional examples and problems for the concept exercises in each lesson. The exercises are designed to help you study mathematics by reinforcing important skills needed to succeed in the everyday world. The materials are organized by chapter and lesson, with one Reteach and Skills Practice worksheet for every regular lesson in *California Mathematics, Grade 4.*

Always keep your workbook handy. Along with you textbook, daily homework, and class notes, the completed *Reteach and Skills Practice Workbook* can help you in reviewing for quizzes and tests.

TO THE TEACHER These worksheets are the same ones found in the Chapter Resource Masters for *California Mathematics, Grade 4.* The answers to these worksheets are available at the end of each Chapter Resource Masters booklet.

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Send all inquiries to:
Macmillan/McGraw-Hill
8787 Orion Place
Columbus, OH 43240

ISBN: 978-0-02-106346-8
MHID: 0-02-106346-X

Printed in the United States of America

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Name _____ Date _____

1–1

Reteach

4NS1.1

Place Value Through Hundred Thousands

You can write numbers in different ways using words and digits. The place value chart below shows the value of each digit in the number 237,568. Below the chart, the number appears in standard form, word form, and expanded form.

Thousands Period			Ones Period		
hundreds	tens	ones	hundreds	tens	ones
2	3	7 ,	5	6	8

Standard form Uses digits: 237,568
Word form Uses words to write the number the way you say it: Two hundred thirty-seven thousand, five hundred sixty-eight.
Expanded form Uses the place value of each digit to write the number: 200,000 + 30,000 + 7,000 + 500 + 60 + 8

Complete the expanded form of each number below.

1. 87,562 = 80,000 + _____ + 500 + _____ + 2

2. 431,281 = 400,000 + _____ + 1,000 + _____ + 80 + _____

Complete the chart by filling in the standard form and word form of each number:

Standard Form	Expanded Form	Word Form
3._____	100,000 + 20,000 + 600 + 40 + 9	_____
4._____	300,000 + 30,000 + 8,000 + 200 + 30 + 7	_____ _____
5._____	500,000 + 10,000 + 3,000 + 400 + 60 + 1	_____

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1–1

Name _____ Date _____

Skills Practice

4NS1.1

Place Value Through Hundred Thousands

Write each number in *standard form.*

1. five hundred eighty-two thousand, nine hundred forty-seven.

_____

2. two hundred six thousand, four hundred twenty-nine.

_____

3. eight hundred thirty-four thousand, six hundred seventy-one.

_____

Write each number in *word form* and *expanded form.*

4. 6,829

_____

_____

5. 23,741

_____

_____

6. 119,874

_____

_____

7. 745,293

_____

_____

_____

Complete the *expanded* form.

8. 37,568 = 30,000 + _____ + 500 + _____ + 8

9. 493,236 = 400,000 + _____ + 3,000 + _____ + 30 + __

10. 548,912 = 500,000 + _____ + 8,000 + 900 + _____ + 2

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Name _____ Date _____

Reteach

4NS1.1

Place Value Through Millions

Numbers can be written in different ways using words or digits. The place value chart below shows the value of each digit in the number 14,153,987. Below the chart, the number appears in standard form, word form, and expanded form.

Millions Period			Thousands Period			Ones Period		
hundreds	tens	ones	hundreds	tens	ones	hundreds	tens	ones
	1	4 ,	1	5	3 ,	9	8	7

Standard form Uses digits to write a number: 14,153,987
Word form Uses words to write a number the way you say it: Fourteen million, one hundred fifty-three thousand, nine hundred eighty-seven
Expanded form Uses the place value of each digit to write the number: 10,000,000 + 4,000,000 + 100,000 + 50,000 + 3,000 + 900 + 80 + 7

Complete the chart.

Standard Form	Expanded Form	Word Form
1. _____	7,000,000 + 300,000 + 50,000 + 6,000 + 200 + 30 + 7	_____ _____
2. _____	40,000,000 + 1,000,000 + 600,000 + 50,000 + 9,000 + 700 + 3	_____ _____
3. _____	200,000,000 + 30,000,000 + 5,000,000 + 90,000 + 1,000 + 500 + 60 + 8	_____ _____

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1–2

Name _____ Date _____

Skills Practice

4NS1.1

Place Value Through Millions

Write each number in *standard form*.

1. four million, nine hundred twenty-seven thousand, two hundred fifteen _____
2. ninety-seven million, two hundred fifty-three thousand, eight hundred twenty-five _____

Write each number in *word form* and *expanded form*.

3. 275,364,819

_____

_____

_____

_____

4. 843,720,159

_____

_____

_____

_____

Complete the *expanded form*.

5. 413,089,762 = 400,000,000 + _____ + 3,000,000 + 80,000 + _____ + 700 + _____ + 2
6. 152,387,093 = 100,000,000 + _____ + 2,000,000 + 300,000 + _____ + 7,000 + _____ + 3
7. 9,262,548 = 9,000,000 + _____ + 60,000 + 2,000 + _____ + 40 + _____

Write the value of the underlined digit.

8. 1,2<u>8</u>3,479 _____
9. 50,<u>9</u>07,652 _____
10. 20,<u>7</u>35,823 _____
11. <u>3</u>18,472,008 _____

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Name _____ Date _____

Reteach

4MR1.1, 4NS3.0

Problem-Solving Strategy

The Four-Step Plan

If you want to solve a problem, it is important to have a plan. You can use the four-step plan to solve most problems. Use this exercise to learn more:

Miguel's class is having a picnic. The class will make sandwiches at the picnic. There are 36 students in Miguel's class and 18 slices of bread in a loaf. How many loaves of bread will Miguel's class need for the picnic? (*Hint:* Each sandwich will have 2 slices of bread.)

Step 1

Understand What facts do you know? Miguel's class has 36 students. There are 18 slices of bread in one loaf. What do you need to find? How many loaves of bread the class will need for the picnic.

Step 2

Plan You can divide the total number of slices in a loaf by the number of slices needed for a sandwich. Then divide the number of sandwiches needed by the number of sandwiches in a loaf.

Step 3

Solve 18 slices $\div$ 2 slices of bread for each sandwich $=$ 9 sandwiches in a loaf. Then divide 36 sandwiches by 9 sandwiches in a loaf. $36 \div 9 = 4$. So, Miguel's class will need 4 loaves of bread to make sandwiches for everyone at the picnic.

Step 4

Check Look back at the problem. One way to check the answer to this problem is to work backwards. How many slices of bread are in 4 loaves? $4 \times 18 = 72$. How many sandwiches does 72 slices of bread make? $\frac{72}{2} = 36$. So the answer is correct.

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Name _____ Date _____

1–3

Reteach *(continued)*

4MR1.1, 4NS3.0

Problem-Solving Strategy

Solve. Use the *four-step plan*.

1. There are 30 students who want to play in a basketball tournament. The tournament needs to have 1 game ball for every two teams. If each team will have 5 players, how many basketballs will the tournament need?

_____

_____

_____

2. Josh and Anthony have a lemonade stand. They sell 2 glasses of lemonade for $1. They sell 14 glasses each afternoon. How much money do Josh and Anthony make after 3 days of selling lemonade?

_____

_____

_____

3. Jessica can ride her bike 3 blocks in 1 minute. It takes her twice as long to ride her bike 3 blocks if she carries her backpack. If her school is 12 blocks from her house, how long will it take her to get to school with a full backpack?

_____

_____

_____

4. A group of friends needs to carry a large basket of books to the library. Kevin can carry the basket 5 feet. Rachel can carry it 3 feet farther than Kevin. Daniel can carry the basket half as far as Rachel. If each friend carries the basket 3 times, how far will they move the basket?

_____

_____

_____

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Name _____ Date _____

1–3

Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Strategy

Solve. Use the *four-step plan*.

1. Javier's grandmother lives 120 miles away. It takes 1 hour to go 40 miles by train. How long will it take for Javier to get to his grandmother's home by train?

_____

2. The average fourth-grader at Jones Elementary School can complete 2 math problems in 1 minute. A teacher assigned 24 math problems for homework. How long will it take for each student to complete the homework?

_____

3. Brittany wants to make cookies for the whole fourth grade. Her recipe makes 1 dozen cookies. There are 72 fourth-graders at her school. How many dozens of cookies does Brittany need to make for the whole grade?

_____

4. Justin is paid $2 a week for doing chores around the house. He wants to buy a new football that costs $12. How many weeks will Justin have to save his money to buy the football?

_____

5. Ryan and his four friends are planning to visit a zoo. Admission for children is $8. What is the total cost of admission for everyone to go to the zoo?

_____

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Name _____ Date _____

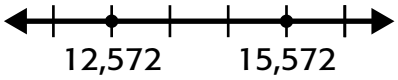
Reteach

4NS1.2, 4NS1.1

Compare Whole Numbers

You compare numbers when you want to know if one number is **less than**, **greater than**, or **equal to** another number. You can use a number line or a place value chart to help you compare numbers. Compare **12,572** and **15,572.**

Lesser numbers are on the left on a number line. Greater numbers are on the right.



12,572 is to the left of 15,572. So 12,572 ◯ 15,572.

In a place value chart, you start at the left. Look for the first place where the digits are different to compare the numbers.

Thousands Period			Ones Period		
hundreds	tens	ones	hundreds	tens	ones
	1	2 ,	5	7	2
	1	5 ,	5	7	2
	same	different	same	same	same

The number 15,572 has more thousands than 12,572.

So 15,572 ◯ 12,572.

Compare. Use >, <, or =.

1. 42,615 ◯ 42,637

2. 13,982 ◯ 13,874

3. 4,765 ◯ 4,219

4. 8,097 ◯ 8,790

5. 7,123 ◯ 7,186

6. 5,835 ◯ 5,083

7. 11,093 ◯ 10,930

8. 13,771 ◯ 13,781

9. 65,987 ◯ 65,987

10. 81,092 ◯ 81,902

11. 124,764 ◯ 124,674

12. 245,718 ◯ 247,518

13. 718,634 ◯ 719,055

14. 3,870,762 ◯ 3,780,763

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1–4

Name _____ Date _____

Skills Practice

4NS1.2, 4NS1.1

Compare Whole Numbers

Compare. Use >, <, or =.

1. 1,276 ◯ 1,267

2. 1,589 ◯ 1,587

3. 2,235 ◯ 2,325

4. 4,672 ◯ 4,670

5. 8,902 ◯ 8,912

6. 10,321 ◯ 10,231

7. 14,832 ◯ 14,872

8. 38,087 ◯ 37,088

9. 67,982 ◯ 67,892

10. 100,542 ◯ 105,042

11. 165,982 ◯ 178,983

12. 239,742 ◯ 289,650

13. 563,218 ◯ 652,985

14. 1,986,034 ◯ 1,896,075

15. two hundred fifty-two thousand, nine hundred eighty-five ◯ 252,895

16. 300,000 + 60,000 + 2,000 + 300 + 10 + 7 ◯ 364,375

17. five hundred thousand, nine hundred twenty-seven ◯ 500,000 + 900 + 20 + 7

18. 621,743 ◯ six hundred twenty thousand, seven hundred fifty-nine

19. 14,210,312 ◯ forty million, two hundred thousand, seventy-five

Solve.

20. Jorge has 1,325 baseball cards in his collection. Sam wants to have more cards than Jorge by the end of summer. Sam collects 1,297 cards. Who has more cards?

_____

21. Andrea read that New York City has 8,008,278 people and that Seoul, South Korea has 10,231,217 people. Andrea wants to live in the city with the most people. Where does Andrea want to live?

_____

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Name _____ Date _____

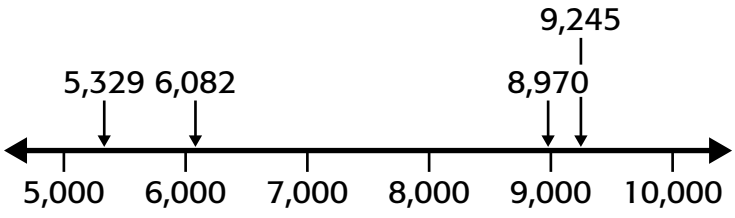
Reteach

4NS1.2, 4NS1.1

Order Whole Numbers

Order the numbers from greatest to least: 9,245; 6,082; 8,970; 5,329. You can use a number line or a place value chart to help you order numbers.

Once you place the numbers where they belong on a number line, you can see their order.



9,245 is farthest to the right. It is the greatest number.
5,329 is the farthest to the left. It is the least number.

In a place value chart, you start at the left. Look for the first place where the digits are different to compare the numbers. Continue through each place value until you have ordered all the numbers.

Thousands Period			Ones Period		
hundreds	tens	ones	hundreds	tens	ones
		9 (greatest),	2	4	5
		6 (third),	0	8	2
		8 (second),	9	7	0
		5 (least),	3	2	9

The number 9,245 has more thousands than all the other numbers. It is the greatest. 5,329 has the least thousands, so it is the least.

Order the numbers from *greatest* to *least*.

1. 1,287; 1,509; 1,487; 1,111

_____

2. 4,278; 5,761; 4,390; 5,104

_____

3. 7,861; 10,865; 9,200; 8,923

_____

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Name _____ Date _____

1–5

Skills Practice

4NS1.2, 4NS1.1

Order Whole Numbers

Order the numbers from *greatest* to *least*.

1. 1,209; 1,078; 1,165; 1,318

_____

2. 5,982; 6,237; 7,892; 4,163

_____

3. 27,982; 32,563; 34,138; 29,238

_____

4. 65,201; 64,827; 66,482; 63,621

_____

Order the numbers from *least* to *greatest*.

5. 8,362; 8,435; 8,920; 8,231

_____

6. 38,271; 37,462; 30,256; 34,247

_____

7. 278,623; 265,023; 281,426; 252,917

_____

8. 4,293,046; 4,308,261; 4,287,460; 4,260,658

_____

9. 57,294,601; 58,925,462; 55,281,473; 56,024,482

_____

Solve.

10. The all-county track meet was Friday. Below are the times for the fastest 1-mile runs. The coaches need help figuring out who gets the second place ribbon. Order these race times from least to greatest.

Brianna: 362 seconds Lauren: 365 seconds

Rachel: 358 seconds Danielle: 370 seconds

Whose time was the second least in seconds?

_____

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Name _____ Date _____

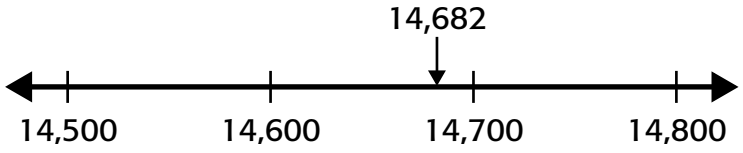
Reteach

4NS1.3

Round Whole Numbers

Round the number 14,682 to the nearest hundred.

A number line helps you round by showing you which number is closer to the number you are rounding. 14,682 is between 14,600 and 14,700. It is closer to 14,700. You round to 14,700.



Place value helps you round by showing you which digit to round.

Thousands Period			Ones Period		
hundreds	tens	ones	hundreds	tens	ones
	1	4	6	8	2
	10,000	4,000	600	80	2

- Find place value to be rounded. (hundreds)
- Look at digit to the right of the place you are rounding. (tens)
- Round up, or add 1 to the place you are rounding, if the digit to the right is 5 or greater. Round down, or add 0 to the place you are rounding, if the digit is less than 5. (digit is 8; round up)
- Replace all digits after the place you are rounding with zeros. (14,700)

Round each number to the given place-value position.

1. 657; hundred _____

2. 843; hundred _____

3. 2,190; thousand _____

4. 7,841; thousand _____

5. 15,834; ten thousand _____

6. 33,512; ten thousand _____

7. 243,713; hundred thousand _____

8. 687,351; hundred thousand _____

9. 537,820; ten thousand _____

10. 274,871; ten thousand _____

11. 2,763,640; thousand _____

12. 6,380,639; thousand _____

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Name _____ Date _____

1–6

Skills Practice

4NS1.3

Round Whole Numbers

Round each number to the given place-value position.

1. 482; ten _____
2. 747; ten _____
3. 261; hundred _____
4. 375; hundred _____
5. 1,278; hundred _____
6. 3,568; hundred _____
7. 4,763; thousand _____
8. 5,432; thousand _____
9. 12,854; thousand _____
10. 35,709; thousand _____
11. 42,981; ten thousand _____
12. 78,651; ten thousand _____
13. 267,430; hundred thousand _____
14. 449,843; hundred thousand _____
15. 1,652,804; hundred thousand _____
16. 2,398,526; hundred thousand _____
17. 4,875,062; ten thousand _____
18. 12,392,604; thousand _____

Solve.

19. The Environmental Protection Agency says the Mississippi River is 2,320 miles long. The U.S. Geological Survey says it is 2,300 miles long. Rounded to the nearest hundred, are these two numbers about the same? Explain. _____

_____

20. The state of California has a land area of 163,692 square miles. Montana has a land area of 147,042 square miles. Rounded to the nearest ten thousand, are the two states' areas the same? Explain.

_____

_____

21. Rounding to the hundreds place, Devin has to score about 200 points to make the traveling basketball team. He has scored 135 points so far. How many more points will he need to score to make the team? Explain. _____

_____

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Name _____ Date _____

Reteach

4MR1.1, 4NS3.0

Problem-Solving Investigation

Sometimes you can solve a problem using more than one strategy. You must choose the strategy that works best for you.

Use this problem to learn more about choosing a strategy:

Sam has 3 shirts to give to his friends. Each friend has one favorite color that is either red, blue, or green. Michelle does not like red or green. Ben does not like blue or red. Lindsey likes red. Who likes green?

Understand

You know there are three friends: Michelle, Ben, and Lindsey.
You know there are three shirts: red, blue, and green.
You need to find out who likes green.

Plan

Choose a strategy.
You have information about three people, but some information is missing for each person.
A table is a good way to show what information you have and what information is missing.
Make a table to solve the problem.

Solve

	Red	Blue	Green
Michelle	**No**	yes	**No**
Ben	**No**	**No**	yes
Lindsey	**Yes**	no	no

Since each friend has only one favorite color, you can fill in the rest of the information for each friend. Ben is the friend who likes green.

Check

Look back at the problem. Does the chart show one favorite color for each friend?

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1–7

Name _____ Date _____

Reteach *(continued)*

4MR1.1, 4NS3.0

Problem-Solving Investigation

Use any strategy shown below to solve. Tell which one you used.

- Use the four-step plan
- Draw a picture
- Look for a pattern
- Make a table

1. Alejandro collected bugs for a science project. He has a painted lady butterfly, a monarch butterfly, a bumble bee, a lime butterfly, a honey bee, a speckled wood butterfly, a carpenter bee, and a plum Judy butterfly. Did he collect more bees or butterflies?

_____

_____

_____

2. Isaiah is growing his dog-walking business. The first week he walked 1 dog. The second week he walked 2 dogs. The third week he walked 3 dogs. If this pattern continues, how many dogs will Isaiah walk the seventh week?

_____

_____

_____

3. Carlos lives 2 blocks west of Kimberly. Elizabeth lives 2 blocks east of Kimberly. How far does Elizabeth live from Carlos?

_____

_____

_____

4. Kelly earns $5 every time she washes her neighbor's car. How many times will she need to wash the car to earn $45?

_____

_____

_____

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Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Investigation

Use any strategy shown below to solve. Tell which one you used.

- Use the four-step plan
- Draw a picture
- Look for a pattern
- Make a table

1. A cheetah can run 70 miles in one hour. A rabbit can run 35 miles in one hour. How many hours would it take a rabbit to run as far as a cheetah can run in 2 hours?

_____

2. Mrs. Jones said the class could decide what game they played this afternoon. The class listed these games: four square, basketball, kickball, four square, kickball, soccer, four square, basketball, four square. Which game should the class play?

_____

3. Cameron says he runs about 4 miles when he plays a soccer game. Last week he ran about 12 miles. How many soccer games did he play?

_____

4. The zoo is 5 miles from Katie's house. Her school is 2 miles farther. Katie's grandmother lives another 3 miles past her school. How far away is Katie's grandmother's house from Katie's house?

_____

5. Courtney can make 5 bracelets a week. She wants to make one for each girl in her class. If there are 17 girls in her class, how many weeks will it take her to make the bracelets?

_____

6. Zack has 4 younger brothers. Zack is 54 inches tall. The next oldest, James, is 52 inches tall. The next oldest, Kyle, is 50 inches tall. The next oldest, Thomas, is 48 inches tall. If the pattern continues, how tall is the youngest brother, Andrew?

_____

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Reteach

4AF1.0

Algebra: Addition Properties and Subtraction Rules

We use addition properties and subtraction rules to add and subtract. These properties and rules help us add numbers mentally. There are three main properties of addition and two subtraction rules to keep in mind as you add and subtract.

Addition Properties

Commutative Property	**Associative Property**	**Identity Property**
The order in which numbers are added does not change the sum.	The way in which numbers are grouped when added does not change the sum.	The sum of any number and 0 is the number.
Example $3 + 1 = 4$ $1 + 3 = 4$	**Example** $(6 + \mathbf{5}) + 2 \quad 6 + (\mathbf{5} + 2)$ $11 \quad + 2 \quad 6 + \quad 7$ $13 \qquad 13$	**Example** $9 + 0 = 9$ $0 + 9 = 9$

Subtraction Rules

When you subtract 0 from any number, the result is the number. **Examples** $7 - 0 = 7 \qquad 5 - 0 = 5$	When you subtract any number from itself, the result is 0. **Examples** $8 - 8 = 0 \qquad 4 - 4 = 0$

Complete each number sentence. Identify the property or rule used.

1. $5 + 3 + 4 = 3 + 4 +$ ☐

_____

2. ☐ $+ 0 = 7$ _____

3. $6 -$ ☐ $= 0$ _____

4. $2 -$ ☐ $= 2$ _____

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2–1

Skills Practice

4AF1.0

Algebra: Addition Properties and Subtraction Rules

Complete each number sentence. Identify the property or rule used.

1. $(9 + 5) + 3 = 9 + (5 + \_\_\_\_\_)$ _____

2. $\_\_\_\_\_ + 0 = 5$ _____

3. $6 + 4 + \_\_\_\_\_ = 4 + 6 + 9$ _____

4. $9 + \_\_\_\_\_ = 9$ _____

5. $(7 + 19) + 3 = \_\_\_\_\_ + (19 + 3)$ _____

6. $8 + 0 = \_\_\_\_\_$ _____

7. $6 - \_\_\_\_\_ = 0$ _____

8. $36 + 12 + 10 = \_\_\_\_\_ + 10 + 36$ _____

9. $\_\_\_\_\_ + 0 = 8$ _____

10. $9 + \_\_\_\_\_ = 4 + 9$ _____

11. $19 - \_\_\_\_\_ = 19$ _____

12. $(8 + 32) + \_\_\_\_\_ = 8 + (32 + 4)$ _____

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Reteach

4NS2.1

Estimate Sums and Differences

An estimate is an answer close to the exact answer. When estimating, you can round to the nearest ten, hundred, or thousand.

Estimate 56 + 82 to the nearest ten.	Estimate 1,762 − 619 to the nearest hundred.	Estimate 12,049 + 8,967 to the nearest thousand.
56 → 60 + 82 → + 80 140	1,762 → 1,800 − 619 → − 600 1,200	12,049 → 12,000 + 8,967 → + 9,000 21,000
So, 56 + 82 is about 140.	So, 1,762 − 619 is about 1,200.	So, 12,049 + 8,967 is about 21,000.

Estimate. Round to the nearest ten.

1. 34 + 59 _____

2. 165 + 426 _____

3. 471 − 234 _____

4. 917 − 123 _____

Estimate. Round to the nearest hundred.

5. 437 + 553 _____

6. 3,721 + 232 _____

7. 682 − 364 _____

8. 7,246 − 2,155 _____

Estimate. Round to the nearest thousand.

9. 4,328 + 3,156 _____

10. 6,520 + 2,189 _____

11. 3,281 − 1,468 _____

12. 14,562 – 3,471 _____

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Name _____ Date _____

2–2

Skills Practice

4NS2.1

Estimate Sums and Differences

Round to the nearest ten.

1. 613 + 187 _____

2. 783 + 321 _____

3. 246 + 351 _____

4. 923 + 118 _____

Round to the nearest hundred.

5. 891 − 134 _____

6. 591 − 214 _____

7. 437 − 256 _____

8. 1,230 − 418 _____

Round to the nearest ten dollars.

9. $17.63 − $12.71 _____

10. $88.24 − $46.68 _____

Round to the nearest thousand.

11. 3,736 + 4,179 _____

12. 63,323 + 47,697 _____

Round to the nearest hundred dollars.

13. $116.13 + $278.87 _____

14. $489.88 + $712.03 _____

Round to the nearest thousand dollars.

15. $7,351.12 − $4,887.83 _____

16. $8,958.92 − $6,245.45 _____

17. In 1787 Delaware became the first state of the United States. To the nearest hundred, about how many years ago did Delaware become a state?

_____

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Name _____ Date _____

Reteach

4MR2.5, 4NS3.0

Problem-Solving Skill

You **estimate** an answer when you do not need an exact answer. Find an **exact** answer when you need to find *exactly* how much.

Logan's neighbor hires him to mow his lawn. Logan charges $10.25 an hour to mow a yard. The neighbor asks Logan how much it will cost to mow his yard. Logan thinks it will take about 2 hours to mow his lawn. How much does Logan tell his neighbor it will cost?

Understand

What facts do you know?

- Logan charges $10.25 an hour
- It will take Logan about 2 hours to mow

What do you need to find?

How much it will cost Logan's neighbor to have his lawn mowed.

Plan

Does Logan need an exact answer or an estimate?

Is his neighbor expecting an estimate or exact answer?

Logan will only be able to give an estimate for the cost because there is no way for him to know *exactly* how long it will take to mow the yard. His neighbor should expect an estimate.

Solve

How much does Logan charge if it takes him 2 hours?

$10 + $10 = $20 So, Logan will charge about $20.

Check

When determining how long it will take to mow the lawn, is it better for Logan to estimate higher or lower? Explain.

It is better for Logan to estimate higher. A higher estimate will prevent Logan from charging his neighbor much more than the original estimated cost.

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Name _____ Date _____

2–3

Reteach *(continued)*

4MR2.5, 4NS3.0

Problem-Solving Skills

Tell whether an estimate or an exact answer is needed. Then solve.

1. Marcus, Jon, and Brenda all collect fossils. Marcus has 13 fossils, Jon has 28 fossils, and Brenda has 17 fossils. Do they have more than 70 fossils in all?

_____

2. Ramona went to the store to purchase some fruits. The fruits cost $11.25, and she gives the cashier a $20 bill. About how much change should Ramona get back? _____

3. Raphael needs enough hose to reach his garden, which is 20 feet away from the water spout. He has one section of hose that is 14 feet long and another section that is 7 feet long. Will the hose be long enough if he connects the two sections?

_____

4. Ms. Ramirez wants her students to each have one muffin. She has 27 students in her class. If each box of muffins contains 10, how many boxes will she need?

_____

5. Julie has $20. She wants to buy a box of cereal for $4, a game for $6, and a pair of mittens for $8. Will she have enough money for her purchases? _____

6. Gerald is reading a novel. On Monday he reads 37 pages, on Tuesday he reads 24 pages, and on Wednesday he reads 26 pages. About how many pages has Gerald read?

_____

7. Matthew has two buckets. One of his buckets holds 78 ounces of water, and his other bucket holds 95 ounces of water. If Matthew fills his buckets all the way, exactly how much water can he carry?

_____

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Skills Practice

4MR2.5, 4NS3.0

Problem-Solving Skill

Tell whether an estimate or an exact answer is needed. Then solve.

1. A family drove 184 miles to visit friends and then drove 213 miles to the beach. About how many miles did they drive?

_____

2. A zoo has 2 hippopotamuses that each eats 120 pounds of grass a day. Is 370 pounds of grass enough to feed them for 2 days?

_____

3. While on vacation, Isabel took 124 pictures, Jacob took 96 pictures and Maya took 178 pictures. About how many pictures did they all take?

_____

4. Brian scored a 72 on his first science quiz. On his second science quiz, Brian scored a 98. By about how many points did Brian improve his score?

_____

5. Travis ran the 50-yard dash in 10 seconds. After practicing, Travis ran the 50-yard dash in 8 seconds. How many seconds faster was Travis after practicing?

_____

6. Maria is shopping for school clothes. She buys a sweater for $29.31, a jacket for $41.99, and a skirt for $18.10. How much money does she spend?

_____

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Name _____ Date _____

Reteach

4NS3.1

Add Numbers

The traditional method of adding whole numbers is from right to left. Did you know whole numbers can also be added from left to right?

Adding from left to right is a good method to try when adding in your head.

Example:
$$\begin{array}{r} 358 \\ +\ 968 \\ \hline \end{array}$$

Step 1: Add the hundreds.	**Step 2:** Add the tens.	**Step 3**: Add the ones.
$\begin{array}{r} 300 \\ +\ 900 \\ \hline 1{,}200 \end{array}$	$\begin{array}{r} 50 \\ +\ 60 \\ \hline 110 \end{array}$	$\begin{array}{r} 8 \\ +\ 8 \\ \hline 16 \end{array}$

Step 4: Add the answers.

$$\begin{array}{r} 1{,}200 \\ 110 \\ +\ \ 16 \\ \hline 1{,}326 \end{array}$$

Find each sum.

1. $\begin{array}{r} 574 \\ +\ 361 \\ \hline \end{array}$ _____

2. $\begin{array}{r} 1{,}361 \\ +\ \ 627 \\ \hline \end{array}$ _____

3. $\begin{array}{r} 3{,}254 \\ +\ 4{,}563 \\ \hline \end{array}$ _____

4. $\begin{array}{r} 477 \\ +\ 534 \\ \hline \end{array}$ _____

5. $\begin{array}{r} 2{,}225 \\ +\ \ 384 \\ \hline \end{array}$ _____

6. $\begin{array}{r} 5{,}821 \\ +\ 7{,}338 \\ \hline \end{array}$ _____

7. $\begin{array}{r} 328 \\ +\ 492 \\ \hline \end{array}$ _____

8. $\begin{array}{r} 6{,}578 \\ +\ \ 679 \\ \hline \end{array}$ _____

9. $\begin{array}{r} 8{,}634 \\ +\ 3{,}766 \\ \hline \end{array}$ _____

10. $\begin{array}{r} 853 \\ +\ 625 \\ \hline \end{array}$ _____

11. $\begin{array}{r} 4{,}135 \\ +\ \ 681 \\ \hline \end{array}$ _____

12. $\begin{array}{r} 8{,}563 \\ +\ 2{,}188 \\ \hline \end{array}$ _____

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2–4

Skills Practice

4NS3.1

Add Numbers

Find each sum.

1. 297 + 608 = _____

2. 864 + 391 = _____

3. $520.30 + $73.19 = _____

4. $29.89 + $374.47 = _____

5. 27,429 + 17,302 = _____

6. $627.48 + $257.10 = _____

7. 67,813 + 4,976 = _____

8. $5,183 + $639 = _____

9. $603.81 + $237.09 = _____

10. 57,153 + 12,899 = _____

11. $37.69 + $7.47 = _____

12. 5,897 + 1,379 = _____

The table shows the size of various states in square miles.

State	Total area in square miles
Alaska	656,425
California	163,707
Maine	35,387
New Jersey	8,722
North Dakota	70,704
Texas	268,601

13. What is the combined area of the two largest states?

_____

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Reteach

4NS3.1

Subtract Numbers

Subtraction of whole numbers is similar to addition of whole numbers in that you may need to regroup.

Example:	481 − 292
Step 1: Rewrite the problem.	4 hundreds 8 tens 1 one − 2 hundreds 9 tens 2 ones
Step 2: Regroup 1 of the hundreds into an equivalent 10 tens.	3 hundreds 18 tens 1 one − 2 hundreds 9 tens 2 ones
Step 3: Regroup 1 of the tens into an equivalent 10 ones.	3 hundreds 17 tens 11 ones − 2 hundreds 9 tens 2 ones
Step 4: Subtract	3 hundreds 17 tens 11 ones − 2 hundreds 9 tens 2 ones 1 hundreds 8 tens 9 ones = **189**

Subtract. Use addition to check.

1. 561 − 272 = _____

2. 811 − 428 = _____

3. 785 − 494 = _____

4. 1,261 − 633 = _____

5. 2,536 − 844 = _____

6. 8,831 − 566 = _____

7. 5,619 − 2,828 = _____

8. 9,116 − 5,853 = _____

9. 2,914 − 1,265 = _____

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2–5

Skills Practice

4NS3.1

Subtract Numbers

Subtract. Use addition or estimation to check.

1. 491 − 247 = _____

2. 7,548 − 3,657 = _____

3. $661.13 − $275.19 = _____

4. 631 − 418 = _____

5. $61.39 − $17.42 = _____

6. 71,327 − 34,589 = _____

7. 6,169 − 1,578 _____

8. $35.15 − $28.28 _____

9. $913.45 − $268.98 _____

10. 536,319 − 478,258 _____

This table shows the dates of significant American conflicts.

	Began	Ended
Revolutionary War	1775	1783
War of 1812	1812	1815
Civil War	1861	1865
World War I	1914	1918
World War II	1936	1945
Vietnam War	1954	1975

11. How many years after the Revolutionary War ended did the Civil War begin? _____

12. How long did the Vietnam War last? _____

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Name _____ Date _____

2–6

Reteach

4MR1.1, 4NS3.0

Problem-Solving Investigation

You **estimate** an answer when you do not need an exact answer.
Find an **exact** answer when you need to find *exactly* how much.

Estimate the answer.	**Find the exact answer.**
Sally has 275 stickers, Joan has 403 stickers, and Karen has 377 stickers. Do the girls have more than 1,000 stamps altogether? Estimate 275 + 403 + 377 Round 300 + 400 + 400 = 1,100 Think: Two of the numbers were rounded up. The exact sum is less than the estimate. The girls have more than 1,000 stamps.	Ethan has 275 stickers, Zack has 403 stickers, and Ricky has 377 stickers. How many stickers do the boys have altogether? Find the sum of 275 + 403 + 377. 275 403 +377 1,055 The boys have 1,055 stickers altogether.

Choose the correct answer.

Paco has 129 toy cars. His brother has 167 toy cars. How many toy cars do they have in all?

1. Which plan can help you solve the problem?

A. Estimate the sum of 129 and 167.
B. Add 129 and 167.
C. Compare 129 and 167.

2. How many toy cars do the boys have in all?

F. 300 **G.** 296 **H.** 200

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Reteach *(continued)*

4MR1.1, 4NS3.0

Problem-Solving Investigation

Choose the correct answer.

Hiroshi has 429 football cards, 278 baseball cards, and 97 hockey cards. Does Hiroshi have more than 1,000 cards in all?

3. Which plan can help solve the problem?

A. Find the exact sum for 429 + 278 + 97.
B. Estimate to tell if 429 + 278 is greater than 1,000.
C. Estimate to tell if 429 + 278 + 97 is greater than 1,000.

4. Does Hiroshi have more than 1,000 cards in all?

F. No. **G.** Yes.
H. Hiroshi has exactly 1,000 cards.

Collin traveled 368 miles over spring break. Allison traveled 179 miles. How many more miles did Collin travel than Allison?

5. Which plan can help solve the problem?

A. Estimate 368 + 179
B. Estimate 368 − 179
C. Find the exact difference for 368 − 179

6. How many more miles did Collin travel than Allison?

A. 545 miles
B. 200 miles
C. 189 miles

Write the correct answer.

Darla had $75. She bought a video game. She now has $38. About how much did the game cost?

7. Write a plan to solve the problem. _____

8. About how much did the game cost? _____

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Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Investigation

Solve. Explain why you gave an estimate or exact answer.

1. James, Max, and Melba collect baseball cards. James has 870 cards, Max has 569 cards, and Melba has 812 cards. Do the three friends have more than 2,000 baseball cards?

_____

_____

2. Nicki has a collection of 79 shells and 64 rocks. How many items are in her collection?

_____

_____

3. Kelly has a coin collection. Her quarters are worth $104.50. Her dimes are worth $75.10. Her nickels are worth $27.75. What is the total value of Kelly's coin collection?

_____

_____

4. The Comic Book Show sells 474 tickets on Friday and 396 tickets on Saturday. About how many tickets does the Comic Book Show sell?

_____

_____

_____

5. How many people visited the museum on Saturday and Sunday?

_____

6. About how many people visited the museum on Wednesday, Thursday, and Friday?

_____

Museum Visitors	
Wednesday	377
Thursday	405
Friday	529
Saturday	836
Sunday	915

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Name _____ Date _____

Reteach

4NS3.1

Subtract Across Zeros

Subtraction that involves digits that are zeros use the same steps as subtraction that involves digits that are not zeros.

Example	300 − 157
Step 1: Regroup the hundreds by converting 1 hundred into 10 tens.	2 10 ~~3~~ ~~0~~ 0 − 1 5 7
Step 2: Regroup the tens by converting 1 ten into 10 ones.	9 2 ~~1~~ ~~0~~ 10 ~~3~~ ~~0~~ ~~0~~ − 1 5 7
Step 3: Subtract.	9 2 ~~1~~ ~~0~~ 10 ~~3~~ ~~0~~ ~~0~~ − 1 5 7 1 4 3

Subtract. Use addition to check.

1. 400 − 158 _____

2. 3,900 − 1,853 _____

3. $8.00 − $2.67 _____

4. 6,000 − 4,322 _____

5. 600 − 319 _____

6. 9,000 − 6,866 _____

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2–7

Skills Practice

4NS3.1

Subtract Across Zeros

Subtract. Use addition to check.

1. 700 − 280 _____

2. 9,000 − 3,512 _____

3. 500 − 361 _____

4. $80.00 − $29.87 _____

5. $9.00 − $7.22 _____

6. 5,000 − 3,159 _____

7. 300 − 143 _____

8. $68.00 − $42.11 _____

9. 4,100 − 2,487 _____

10. 8,000 − 2,533 _____

Complete the following tables using the rules.

11.

Rule: Subtract 356		
Input	2,200	
Output		2,844

_____

12.

Rule: Subtract 1,125		
Input	8,000	
Output		8,875

_____

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Reteach

4AF1.1

Addition and Subtraction Expressions

A variable is a letter or symbol that represents an unknown number. In the expression $5 + x$, the unknown number is represented by the variable x.

You can find the value of an expression by substituting different numbers for the variable.

Find the value of $5 + x$ when $x = 2$. $5 + x$ $5 + 2 = 7$ So, the value of $5 + x$ when $x = 2$ is 7.	Find the value of $5 + x$ when $x = 5$. $5 + x$ $5 + 5 = 10$ So, the value of $5 + x$ when $x = 5$ is 10.
Find the value of $m - 3$ when $m = 7$. $m - 3$ $7 - 3 = 4$ So, the value of $m - 3$ when $m = 7$ is 4.	Find the value of $m - 3$ when $m = 10$. $m - 3$ $10 - 3 = 7$ So, the value of $m - 3$ when $m = 10$ is 7.

Find the value of each expression if $m = 7$ and $s = 3$.

1. $m + 1$ _____

2. $s + 2$ _____

3. $5 + s$ _____

4. $3 + m$ _____

5. $7 - m$ _____

6. $19 - s$ _____

Find the value of each expression if $b = 9$ and $e = 4$.

7. $b + 3$ _____

8. $b + 8$ _____

9. $e + 4$ _____

10. $e + 6$ _____

11. $b - e$ _____

12. $(e + 2) - 3$ _____

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3–1

Name _____ Date _____

Skills Practice

4AF1.1

Addition and Subtraction Expressions

Find the value of each expression if $y = 6$ and $z = 2$.

1. $9 - y$ _____

2. $7 - z$ _____

3. $z + 3$ _____

4. $y + 7$ _____

5. $3 + y$ _____

6. $y - 1$ _____

7. $(12 - y) + 4$ _____

8. $18 - (8 + z)$ _____

9. $z + 17$ _____

10. $12 + y$ _____

10. $(5 + y) - 3$ _____

12. $(5 - z) + 9$ _____

Write an expression for each situation.

13. 7 more than x _____

14. 12 and y more _____

15. 5 and p more _____

16. 25 and b more _____

17. 2 and m more _____

18. 15 more than q _____

19. 3 more than g _____

20. 41 and f more _____

Solve.

21. George earns $30 plus tips each day. Write an expression to show his total daily pay. If George received $8 in tips yesterday, how much did he earn in all?

_____

22. Tanesha has 24 marbles. She gives away x number of marbles. Write an expression for the number of marbles she has left.

_____

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Name _____ Date _____

Reteach

4AF1.1

Solve Equations Mentally

You can use mental math to solve equations.

Addition Equations	**Subtraction Equations**
Solve $3 + n = 7$.	**Solve $11 - n = 8$.**
THINK 3 plus what number equals 7? Or 7 minus what number equals 3?	THINK 11 minus what number equals 8? Or 8 plus what number equals 11?
You know that $3 + 4 = 7$ and $7 - 4 = 3$.	You know that $11 - 3 = 8$ and $8 + 3 = 11$.
So, $n = 4$.	So, $n = 3$.

Solve each equation mentally.

1. $5 + n = 8$ _____

2. $7 - n = 5$ _____

3. $2 + n = 10$ _____

4. $n - 4 = 6$ _____

5. $n + 4 = 6$ _____

6. $n - 8 = 1$ _____

7. $n + 6 = 10$ _____

8. $14 - n = 6$ _____

9. $6 + n = 13$ _____

10. $n - 2 = 13$ _____

11. $n + 9 = 12$ _____

12. $17 - n = 11$ _____

13. $8 + n = 14$ _____

14. $15 - n = 4$ _____

15. $11 + n = 18$ _____

16. $19 - n = 13$ _____

17. $n + 12 = 20$ _____

18. $n - 11 = 11$ _____

19. $n + 7 = 16$ _____

20. $20 - n = 13$ _____

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3–2

Skills Practice

4AF1.0

Solve Equations Mentally

Solve each equation mentally.

1. $n + 6 = 12$ _____

2. $n - 6 = 3$ _____

3. $4 + n = 7$ _____

4. $n - 5 = 10$ _____

5. $n + 6 = 15$ _____

6. $12 - n = 1$ _____

7. $n + 9 = 13$ _____

8. $18 - n = 9$ _____

9. $10 + n = 18$ _____

10. $n - 4 = 12$ _____

11. $7 + n = 20$ _____

12. $20 - n = 13$ _____

13. $5 + n = 16$ _____

14. $n - 8 = 4$ _____

15. $n + 11 = 23$ _____

16. $n - 12 = 13$ _____

Write and solve an equation for each situation.

17. A number plus 5 equals 18.

_____

18. The sum of 6 and a number is 21.

_____

19. Nine less than a number equals 7.

_____

20. A number subtracted from 25 equals 14.

_____

Solve.

21. Melinda has $12 in her pocket. She bought a card at the store and now has $8. Write and solve an equation to find how much the card cost.

_____

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Name _____ Date _____

Reteach

4MR1.1, 4AF1.1

Problem-Solving Skill

A problem is **missing information** when you cannot solve it unless you have more information. A problem has **extra information** when it gives more information than needed to solve it.

Missing Information

Problem Jack spent 45 minutes on his homework. Jenny started her homework at 4:00 P.M. Who spent more time doing their homework, Jack or Jenny?

You cannot solve the problem unless you know when Jenny finished her homework.

Extra Information

Problem Sue spent 30 minutes raking leaves after school. She spent 20 minutes raking leaves after dinner. She then practiced her violin for 30 minutes. How long did Sue take to rake the leaves?

To solve the problem, you do not need to know how long it took Sue to practice.

Choose the correct answer.

The music store is having a sale on CDs. The store also sells videos. The cost is $15 for 5 CDs. How many CDs can Tyler buy?

1. Which of the following statements is false?

A. There are more than 20 CDs on clearance.

B. It costs $15 for 5 videos.

C. It costs $30 for 10 CDs.

D. One CD on sale costs $3. **1.** _____

2. What information is missing?

F. the cost of each CD

G. what the store sells

H. how much money Tyler has

J. what Tyler wants to buy **2.** _____

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Name _____ Date _____

Reteach *(continued)*

4MR1.1, 4AF1.1

Problem-Solving Skill

Thirty fourth-grade students are going to a museum. Each van can hold ten students. Five chaperones are going on the trip with the students. How many vans are needed to take the students to the museum?

3. What information is not needed?

A. the number of students

B. the number of chaperones

C. the number of students that can fit in each van

D. none of the above **3.** _____

4. How many vans are needed?

F. 5 vans

G. 4 vans

H. 3 vans

J. 2 vans **4.** _____

Circle the question in each problem. Underline the needed facts. Identify the missing or extra information. Then solve if possible.

5. Sally eats three turkey sandwiches and two ham sandwiches a week. She eats at 12:30 every day. How many turkey sandwiches does she eat in two weeks?

_____

_____

_____

6. Jill is 9 years old and she downloads 10 songs a month. How much does she spend after 3 months?

_____

_____

7. There are a total of 30 students. Twelve of them want chocolate ice cream. How many of them prefer strawberry?

_____

_____

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Name _____ Date _____

Skills Practice

4MR1.1, 4AF1.1

Problem-Solving Skill

Identify any extra or missing information. Then solve if possible.

1. A round-trip first-class ticket from St. Louis to San Diego costs $1,600. A round-trip coach ticket costs $359. The Howards buy 3 tickets. How much do they spend?

_____

_____

2. Marsha and Vicki are selling lemonade. Each pitcher of lemonade can fill 10 cups. Each cup is 25 cents. If they sell 30 cups, how many pitchers of lemonade must they make?

_____

_____

3. The Smith family is going to the zoo on Saturday. Admission for adults is $12. Admission for children is $5 less. How much will admission to the zoo cost the Smith family?

_____

_____

4. Sam runs 2 miles every day after school. He runs 5 miles on Saturday and does not run on Sunday. He also has basketball practice on Saturday. How many miles does Sam run over 2 weeks?

_____

_____

Solve. Use any strategy.

5. Denzel has 3 rows of shelves in his bedroom. Books, games, or CDs occupy each shelf. The middle shelf holds CDs. If the top shelf does not hold books, which shelf holds games? _____

   Strategy: _____

6. Arlene spent $30 for a jacket. She now has $5 left. How much money did Arlene have before she bought the jacket? _____

   Strategy: _____

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Name _____ Date _____

Reteach

4AF1.5

Algebra: Find a Rule

Sometimes math exercises have a pattern to the answers. Once you find the pattern, you can make a rule that will solve the problem for any input.

Use this problem to learn more about finding a pattern and making a rule:

No matter how many cards Emma has, James always has five more cards.

This problem tells you the rule: Emma's cards + 5 = James' cards. If Emma has 15 cards, how many cards will James have? James will have 15 + 5, or 20 cards.

Now see the same problem written a different way.

Emma's Cards Input (x)	James' Cards Output (y)
3	8
5	10
7	?
9	?

1. Identify the pattern: 3 + __ = 8
5 + __ = 10
The pattern is to add 5 to each number.

2. Identify the rule and write it as an equation.
$x + 5 = y$
So the next numbers in the table are 12 and 14.

Practice

Write each rule as an equation to describe the pattern. Then use the equation to find the next three numbers in the pattern.

1.

Rule: _____	
Input (d)	Output (e)
4	8
8	12
12	
16	
20	

2.

Rule: _____	
Input (j)	Output (k)
2	11
5	14
8	
11	
14	

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3–4

Name _____ Date _____

Skills Practice

4AF1.5

Algebra: Find a Rule

Write an equation that describes the pattern. Then use the equation to find the next two numbers in the pattern.

1.

Rule: _____	
Input (a)	Output (b)
0	2
5	7
10	12
15	
20	

2.

Rule: _____	
Input (f)	Output (g)
22	17
26	21
30	25
34	
38	

3.

Rule: _____	
Input (h)	Output (j)
12	19
15	22
18	25
21	
24	

4.

Rule: _____	
Input (t)	Output (u)
25	14
29	18
33	22
37	
41	

This table shows how much a drive-in movie theater charges.

Input (p)	Output (t)
2	9
3	10
4	
5	
6	

5. The drive-in movie theater charges $7 per car plus $1 per person. Use the table to the left to write an equation for this situation.

_____

6. Find the cost for bringing 4, 5, and 6 people to the movies.

_____

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Name _____ Date _____

Reteach

4MR2.3, 4NS3.0

Problem-Solving Investigation

There are many ways to solve most math problems. You will decide which strategy works best for you when you read the problems. Here is a list of problem-solving strategies:

- **Draw a picture:** This strategy can help you look at the information in the problem a different way—useful when the problem is about distance or location.
- **Look for a pattern:** This strategy can help you solve problems when the input changes.
- **Make a table:** This strategy can help you solve problems that have a lot of information to organize.

Use this problem to learn more about choosing a strategy.

When Lilly was 7 years old, she earned an allowance of $0.75. When she was 8 years old, she earned $1.25, and when she was 9 years old, she earned $1.75. Now Lilly is 10 years old. If the pattern continues how much allowance does Lilly earn?

Understand	You know that Lilly earned $0.75 when she was 7, $1.25 when she was 8, and $1.75 when she was 9. You need to find how much allowance Lilly earns as a 10-year-old.
Plan	Choose a strategy. The input (Lilly's age) is changing. Looking for a pattern in the output (Lilly's allowance) will help you find the answer. Look for a pattern to solve this problem.

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Name _____ Date _____

3–5

Reteach *(continued)*

4MR2.3, 4NS3.0

Problem-Solving Investigation

Solve	<table><tr><td>Age</td><td>7</td><td>8</td><td>9</td><td>10</td></tr><tr><td>Allowance</td><td>$0.75</td><td>$1.25</td><td>$1.75</td><td>?</td></tr></table> Look at the three numbers. How do you get from $0.75 to $1.25? How do you get from $1.25 to $1.75? Is there a rule that tells how to get from one number to the next? Since the numbers are getting bigger, an amount is being added to each number. Use subtraction to find the amount being added. $1.25 − $0.75 = $0.50 $1.75 − $1.25 = $0.50 Fifty cents was added to each number. Add $0.50 to $1.75 to find the answer. $1.75 + $0.50 = $2.25 Lilly's allowance is now $2.25.
Check	Look back at the problem. Check that the difference between $2.25 and $1.75 is $0.50. $2.25 − $1.75 = $0.50 Your answer is correct.

Use any strategy on p. 47 to solve. Tell which strategy you used.

1. Each farmer brought 3 animals to the fair. If the fair has space in one barn for 24 animals, how many farmers can bring animals to that barn? _____

Strategy: _____

2. Mackenzie is buying breakfast at school. Pancakes are $1.75, milk is $0.85, and eggs are $2.25. Mackenzie orders all three items. If she pays with a $10.00 bill, how much change will she get back?

_____

Strategy: _____

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Name _____ Date _____

Skills Practice

4MR2.3, 4NS3.0

Problem-Solving Investigation

Use any strategy shown below to solve. Tell which strategy you used.

- Draw a picture
- Look for a pattern
- Make a table

1. When the new apartment building opened, 12 families moved in. If each family averaged 2 children, about how many children live in the new building? _____

Strategy: _____

2. Luis spent $12.50 on groceries for his family. He bought eggs, milk, bananas, and bread. If he paid with a $20-bill, how much change did he get back? _____

Strategy: _____

3. Olivia is making bead bracelets. She places two blue beads, then a green bead and a yellow bead. How many blue beads will she need if she uses 47 beads in all? _____

Strategy: _____

4. Adam is helping his grandmother make a quilt. For every green square she uses, she needs 2 red squares, 3 yellow squares, and 4 white squares. If she uses 4 green squares, how many squares will she need in all? _____

Strategy: _____

5. Madeline wants to download songs that cost $2 each. If she has $15, how many songs can she download? _____

Strategy: _____

6. Erin picks up golf balls at the local golf course. Today she has collected 45 white balls, 17 yellow balls, 12 orange balls, and 5 pink balls. How many golf balls has Erin collected?

_____

_____

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Name _____ Date _____

Reteach

4AF2.1

Balanced Equations

Equations are balanced when both sides are equal (=). They are not balanced when the two sides are **not** equal (≠).

Think about holding a pencil in one hand and something heavier, like your math book, in the other hand. You can tell that they are not the same weight.

pencil ≠ math book

If the two sides have the same totals, they are equal. They are equal even if the numbers on each side are different:

$1 + 7 + 2 = 5 + 5$
$10 = 10$

Sometimes you have to figure out what number to add or subtract from one side to make the two sides equal, or balanced.

$1 + 7 + \_\_\_\_ = 5 + 5$
$8 + \_\_\_\_ = 10$

You need to add 2 to the left side to equal 10.

$1 + 7 + \underline{2} = 5 + 5$

Complete each equation to make a balanced equation.

1. 5 nickels + 3 dimes = 2 quarters + _____

2. 2 dimes + 15 pennies = 3 nickels + _____

3. 5 dimes – _____ = 5 nickels + 15 pennies

4. 4 dimes – 6 pennies – 3 nickels = 6 dimes – 8 nickels – _____

Tell whether each pair of expressions will form a balanced equation.

5. $4 + 5$
$6 + 3$
_____

6. $6 + 12$
$9 + 8$
_____

7. $14 - 8$
$2 + 4$
_____

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3–6

Name _____ Date _____

Skills Practice

4AF2.1

Balanced Equations

Complete each equation to make a balanced equation.

1. $14 + 5 = 14 +$ _____

2. $21 + 8 = 10 + 11 +$ _____

3. $36 + 9 = 15 + 21 +$ _____

4. $44 + 7 = 20 + 24 +$ _____

Tell whether each pair of expressions will form a balanced equation.

5. $12 + 8$
$12 + 4 + 4$ _____

6. $5 + 17$
$3 + 9 + 9$ _____

7. $3 + 11 - 5$
$14 - 5$ _____

8. $6 + 7 + 9$
$15 + 9$ _____

Use the table to help answer these questions.

Family Member	Age
Grandmother	75
Aunt Ilene	48
Ethan	27
Justin	23
Lexi	5
Steve	4

9. The sum of Aunt Ilene's and Ethan's ages equals the age of another family member. Write an equation for this situation.

_____

10. Whose age will balance the equation?

Grandmother = Aunt Ilene + Justin + ☐

_____

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Name _____ Date _____

Reteach

4SDAP1.1

Collect and Organize Data

Marcia counted the number of letters in each word in a story. The data is shown below.

Number of Letters in Words in a Story

3	3	5	6	4	2	1	5	6	3	4	7
3	2	3	5	2	8	4	5	3	3	5	2
5	6	3	5	1	4						

You can **organize** the data in a tally chart.

Example: For the first number, 3, make a tally mark in the table. Cross out the 3 in the data above. Then record and cross out the remaining 3s.

Complete the tally chart.

Number of Letters in Words in a Story		
Number of Letters in Words	**Tally**	**Total Number of Words**
1	//	2
2		
3	𝍸 ///	8
4		
5		
6		
7		
8		

Use the tally chart. How many words had:

1. 3 letters? _____ **2.** 2 letters? _____ **3.** 8 letters? _____

4. more than 3 letters? _____ **5.** less than 3 letters? _____

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Name _____ Date _____

4–1

Skills Practice

4SDAP1.1

Collect and Organize Data

Fernando took note of the types of pants worn by his classmates on a certain day. Below is his recording.

Type of pants: jeans, corduroys, khaki, jeans, athletic pants, jeans, jeans, khaki, corduroys, corduroys, slacks, corduroys, cargo pants, cargo pants, jeans, athletic pants

1. Make a tally chart and frequency table of Fernando's data.

2. What is the most common type of pants worn in Fernando's class? What is the least common?

Most common: _____

Least common: _____

3. Create a tally chart for the following:

Types of pizza preferred by Coach Andretti's soccer team:

pepperoni
sausage
extra cheese
ham & pineapple
pepperoni
pepperoni
sausage
veggie
cheese
ham & pineapple

Types of Pizza Preferred by Coach Andretti's Soccer Team		
Types of Pizza	**Tally**	**Total Number Preferred**
Pepperoni		
Sausage		
Extra Cheese		
Ham & Pineapple		
Veggie		
Cheese		

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Name _____ Date _____

4–2

Reteach

4SDAP1.2

Find Mode, Median, and Outliers

Median, Mode, and Outliers

You can analyze data using the median and mode. Use the table to help you find the outlier, median, and mode.

Outlier: an item of data that lies outside of the data.

The outlier is 12

Median: the middle number when the data is arranged in order from least to greatest

1, 3, 5, 5, 12

↑

The median is 5.

Mode: the number that occurs most often

There are two 5s, so 5 is the mode.

Votes for Class President	
Student	**Number of Votes**
John	5
Carlos	12
Mike	3
Annie	1
Shavaughn	5

Order the data from *least* to *greatest*. Then find the median, mode, and outlier.

1. Data: 6, 4, 3, 3, 0, 5, 18

List in order from least to greatest: ___, ___, ___, ___, ___, ___, ___

Median: ___ Mode: ___ Outlier: ___

2. Data: 83, 96, 91, 83, 78

List in order from least to greatest: ____, ____, ____, ____, ____

Median: ____ Mode: ____ Outlier: _____

3. Data: 56, 88, 100, 30, 96, 56, 92

List in order from least to greatest: ____, ____, ____, ____, ____, ____, _____

Median: _____ Mode: _____ Outlier: ____

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Name _____ Date _____

4–2 Skills Practice

4SDAP1.2

Find Mode, Median, and Outliers

Find the mode.

1. 9, 5, 4, 3, 4, 5, 7, 5 _____

2. 1, 2, 3, 5, 6, 4, 6, 7, 6 _____

3. 6, 4, 2, 1, 2, 4, 8, 4 _____

4. 3, 1, 5, 4, 3, 3, 1, 7, 6 _____

Find the median.

5. 4, 5, 1, 3, 3 _____

6. 8, 5, 4, 3, 6 _____

7. 2, 4, 1, 6, 7, 7, 3 _____

8. 1, 9, 3, 8, 7, 8, 1 _____

Identify the outlier in the data set.

9. 3, 5, 7, 9, 4, 20 _____

10. 9, 10, 3, 12, 11 _____

11. 16, 14, 13, 11, 10, 40 _____

12. 8, 9, 1, 11, 12, 10 _____

Find the mode and median of the data set. Identify any outliers.

13. **Pennies Found on the Sidewalk**

Day	Pennies Found
1	8
2	8
3	12
4	1
5	7

Mode: _____

Median: _____

Outlier(s): _____

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Name _____ Date _____

4–3

Reteach

4MR2.3, 4NS3.0

Problem-Solving Strategy

Which type of fish has the greatest number of varieties listed in the chart?

Varieties of Tetras, Goldfish, and Angelfish		
black neon tetra black moor goldfish gold angel lemon tetra	fantail goldfish white skirt tetra silver dollar tetra marble angel	lionhead goldfish diamond tetra silver angel

Step 1. Understand

Be sure you understand the problem.

Read carefully.

What do you know?

- There are different varieties of _____, _____, and _____.

What do you need to find?

- You need to know how many different varieties of _____, _____, and _____ are listed.

Step 2. Plan

- Make a Table or List
- Work Backward
- Find a Pattern
- Guess and Check
- Solve a Simpler Problem
- Write a Number Sentence
- Act It Out
- Make a Graph
- Use Logical Reasoning
- Draw a Picture

Make a plan.

Choose a strategy.
A table can help you organize what you know.
Make a table to solve the problem.

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Name _____ Date _____

Reteach *(continued)*

4MR2.3, 4NS3.0

Problem-Solving Strategy

Step 3. Solve

Carry out your plan.

Make a table.

Tally the number of _____ for each fish. Write a number for each set of tallies. Compare the numbers.

Complete the table.

Type of Fish	Tally of Different Varieties	Total Tally
Tetras		
Goldfish	///	3
Angelfish		

There are _____ different kinds of tetras.

There are _____different kinds of goldfish.

There are _____ different kinds of angelfish.

There are more varieties of _____ than either of the other two kinds of fish.

Step 4. Check

Is the solution reasonable?

Reread the problem.

Does your answer match the data given in the problem?

_____

Practice

1. Jack lists the fish in his aquarium. He has a fantail goldfish, a lionhead goldfish, a gold angel angelfish, a lemon tetra, and a black neon tetra. Of which type of fish does Jack have the least?

_____

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Name _____ Date _____

Skills Practice

4MR2.3, 4NS3.0

Problem-Solving Strategy

Solve. Use the make a table strategy.

Favorite Kind of Pet			
Elliot—dog Marion—cat Tina—hamster Paula—fish Sam—cat	Howard—dog Noriko—bird Yolanda—dog Barry—cat Juan—dog	Jane—bird Teri—cat Sarah—cat Bruce—dog Mike—cat	Rebecca—bird Melanie—cat Traci—dog Noreen—fish Sylvia—cat

1. Which pet got the most votes? _____

2. Which pet got the fewest votes? _____

3. Marla earns $5 for mowing a lawn. If she mows 5 lawns a week for 4 weeks, how much money will she earn?

_____

4. Devin's parents bought a computer for $1,800. If they pay $180 each month, how many months will it take them to pay for the computer?

_____

5. Shondra invites 15 of her friends over for Yogurt. Nine of them want strawberry, five of them want vanilla. How many of Shondra's friends want a flavor other than strawberry or vanilla?

_____

6. Aaron is having a birthday party and he wants to make gift bags for his friends. If he invites 10 friends and includes 4 items in each bag, how many total items does he need?

_____

7. If James earns $6 per hour, how many hours per week does he work if he makes $360 every 2 weeks?

_____

8. Write a problem where make a table would help you to solve it.

_____

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Name _____ Date _____

Reteach

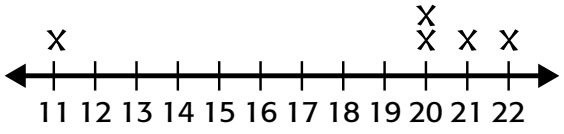
4SDAP1.3, 4SDAP1.2

Line Plots

A line plot is another way to organize data. Line plots are a lot like tally charts. In line plots, you use Xs above a number line instead of tally marks next to a category. Line plots are used when you want to chart how often a certain number occurs in your data.

Students riding afterschool bus:

Day	Students
Monday	11
Tuesday	20
Wednesday	22
Thursday	20
Friday	21



Mode: 20
Median: 20
Outlier: 11

Organize the set of data in a line plot.

1. Number of students in each classroom:

Teacher	Students
Mrs. Connolly	27
Mr. Martinez	32
Mrs. Jones	29
Mr. Washington	30
Mrs. Gematti	31
Mrs. Norris	29
Mr. Calderone	29
Mrs. Abalon	31
Mr. Selfani	36

Identify the mode, median, and outliers for the data set.

2. Number of students in classroom.

Mode: _____ Median: _____

Outlier: _____

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Name _____ Date _____

4–4

Skills Practice

4SDAP1.3, 4SDAP1.2

Line Plots

Organize each set of data in a line plot.

1. Number of fans at the football game:

Game	Fans
1	49,000
2	47,000
3	52,000
4	50,000
5	51,000
6	52,000
7	52,000
8	48,000
9	36,000

2. Points scored by the home team at each football game:

Game	Points
1	24
2	21
3	27
4	21
5	28
6	10
7	31
8	21
9	35

Identify the mode, median, and outliers for the data set.

3. Number of fans at the football game.

Mode: _____

Median: _____

Outlier: _____

4. Number of points scored by the home team at each football game.

Mode: _____

Median: _____

Outlier: _____

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Name _____ Date _____

4–5 Reteach

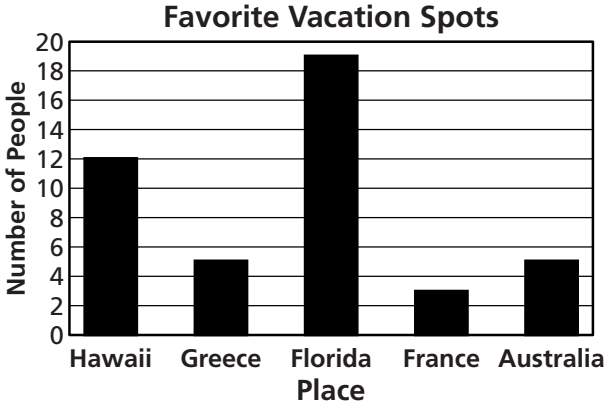
4SDAP1.3

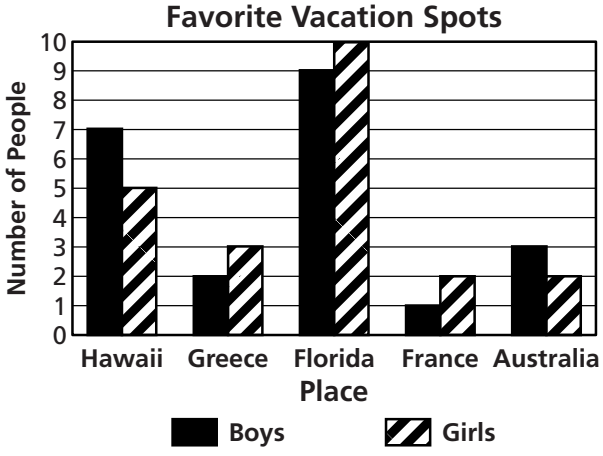
Bar and Double Bar Graphs

You can use single bar graphs or double bar graphs to show data. A single bar graph presents one set of data. A double bar graph presents two sets of data.

When you create a double bar graph, you need to make a key to represent each set of data. Write a title and headings for the vertical and horizontal sides. Select a scale just as you would for a single bar graph. Remember to include different headings for both sets of data.

For Exercises 1–4, use the graphs shown.





1. What is the favorite vacation spot? How many people chose it?

_____

2. Did more people choose France, Hawaii, or Greece as their favorite vacation spot? _____

3. How many more boys than girls chose Hawaii as their favorite vacation spot? _____

4. Which vacation spot shows the greatest difference between boys and girls? _____

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Name _____ Date _____

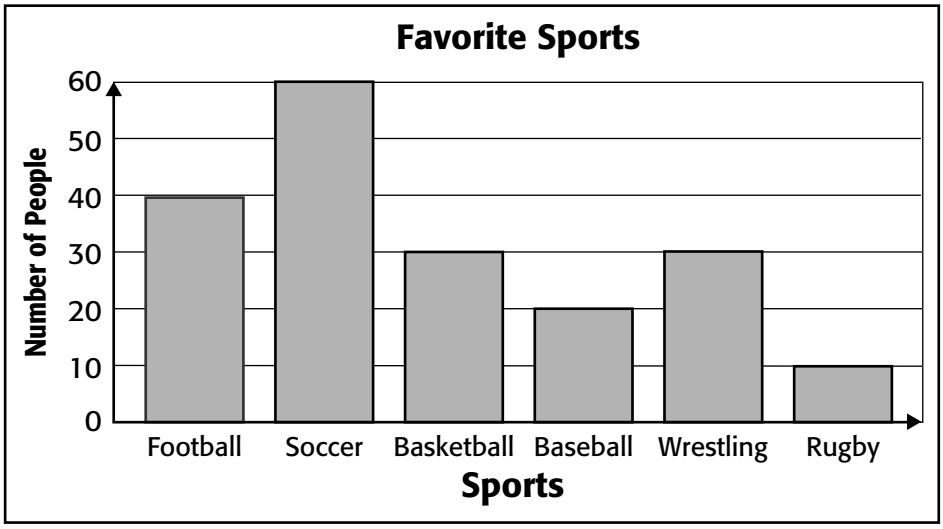
4–5

Skills Practice

4SDAP1.3

Bar and Double Bar Graphs

For Exercises 1–3, use the bar graph below.

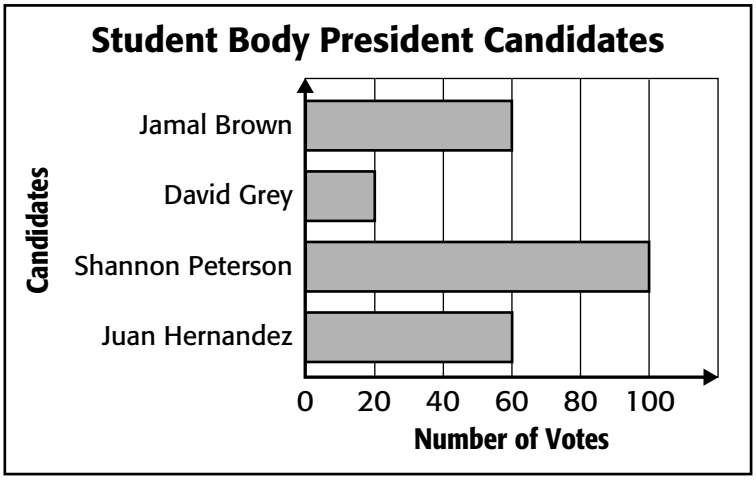


1. What is the favorite sport? _____

2. What is the least favorite sport? _____

3. How many more people prefer soccer to football? _____

For Exercises 4–6, use the bar graph below.



4. How many total students have voted for student body president? _____

5. Which candidate is the winner of the election?

_____

6. How many more votes did David need to win the election? _____

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Name _____ Date _____

Reteach

4MR2.3, 4NS2.1

Problem-Solving Investigation

Choose a Strategy

There are many ways to solve most math problems. You will decide which strategy works best for you when you read the problems. Here are problem-solving strategies and tips on when to use them.

Draw a picture: This strategy can help you look at the information in the problem a different way—useful when the problem is about distance or location.

Look for a pattern: This strategy can help you solve problems when the input changes.

Make a table: This strategy can help you solve problems that have a lot of information to organize.

Use this problem to learn more about choosing a strategy: Erin wants to buy bracelets for each of her friends. Each bracelet costs $3.50. If she has $25, how many bracelets can she buy?

<table>
<tr><td>Understand</td><td>You know that 1 bracelet costs $3.50. You know she has $25. You need to find out how many bracelets she can buy.</td></tr>
<tr><td>Plan</td><td>Choose a strategy.
This problem has a lot of information that you must use to solve it.
A table is a good way to organize information you have.
Make a table to solve the problem.</td></tr>
<tr><td>Solve</td><td>
<table>
<tr><th>Bracelets</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th></tr>
<tr><td>Cost of Bracelets</td><td>$3.50</td><td>$7</td><td>$10.50</td><td>$14</td><td>$17.50</td><td>$21</td><td>$24.50</td><td>$28</td></tr>
</table>
You know how much 1 bracelet costs. You can fill in the chart to find out how many bracelets $25 can buy.
Erin can buy 7 bracelets.
</td></tr>
</table>

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Name _____ Date _____

Reteach *(continued)*

4MR2.3, 4NS2.1

Problem-Solving Investigation

Check	Look back at the problem. Check to see if you are correct: 7 bracelets cost $24.50. 8 bracelets cost $28.00. $28 is more than $25. $25 is more than $24.50. Your answer is correct.

Use any strategy shown below to solve. Tell what strategy you used.

- Draw a picture
- Look for a pattern
- Make a table

1. Notebooks come with 50 pieces of paper. There are 32 students in class. If each student uses 5 pieces of paper, how many notebooks does the class need? _____

Strategy: _____

2. Each batch of dough makes 6 rolls. If Sam wants to make 32 rolls, how many batches of dough will he need? _____

Strategy: _____

3. Gabrielle is decorating cubes for her room. If she puts four cubes together against a wall and wants a different color on each visible side, how many different colors will she need? _____

Strategy: _____

4. Laura is making a picnic. For every person coming to the picnic, she must have 2 sandwiches, 4 drinks, and 10 pretzels. If 4 people come to the picnic, how many food items will she need?

_____

Strategy: _____

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Name _____ Date _____

4–6

Skills Practice

4MR2.3, 4NS2.1

Problem-Solving Investigation

Use any strategy shown below to solve. Tell what strategy you used.

- Draw a picture
- Look for a pattern
- Make a table

1. Admission to the skate park is $4 per child and $10 per adult. If Kristen's father brings Kristen and her friends to the skate park, how many friends can Kristen bring if they have $40 to spend?

_____

Strategy: _____

2. At the class party, each student brings two guests. If there are 45 people at the party, how many are students? _____

Strategy: _____

3. Connor is making squares out of toothpicks. Each square is formed from 4 toothpicks. If he has 13 toothpicks, how many squares can he build? _____

Strategy: _____

4. Richard's class was collecting clothes to donate to the shelter. Richard brought 4 pieces. Jackie and Kelly each brought 6 pieces. Hunter brought 7 pieces, and Tim brought 5 pieces. How many pieces of clothing did Richard's class collect?

_____

Strategy: _____

5. Marissa is making a necklace. She uses these beads: blue, blue, purple, green, blue, blue… What color bead is next if this pattern continues? _____

Strategy: _____

6. Copy and complete the number pattern.

6, 9, 11, 14, 16, ____, ____, ____, ____

Strategy: _____

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Name _____ Date _____

Reteach

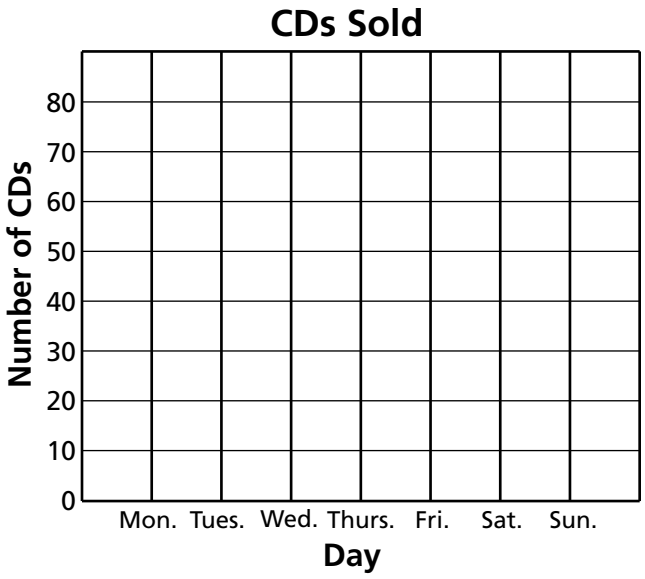
4SDAP1.3

Interpret Line Graphs

A line graph can be used to explain information.

The table below shows the number of CDs sold last week. You can make a line graph to show the number of CDs sold each day.

CD Sales	
Day	Number
Monday	15
Tuesday	10
Wednesday	30
Thursday	50
Friday	45
Saturday	70
Sunday	60



Show the data from the table in the line graph.

- On Monday, 15 CDs were sold. Place a point above Monday and across from 15.
- Place a point for the sales for each of the other days.
- Connect the points with straight lines.

For Exercises 1–4, use the line graph above.

1. On which day were the most CDs sold? _____

2. What is the difference between the highest number sold and the lowest number sold? _____ − _____ = _____

3. Did sales increase or decrease from Friday to Saturday?

_____

4. Did sales increase or decrease from Thursday to Friday?

_____

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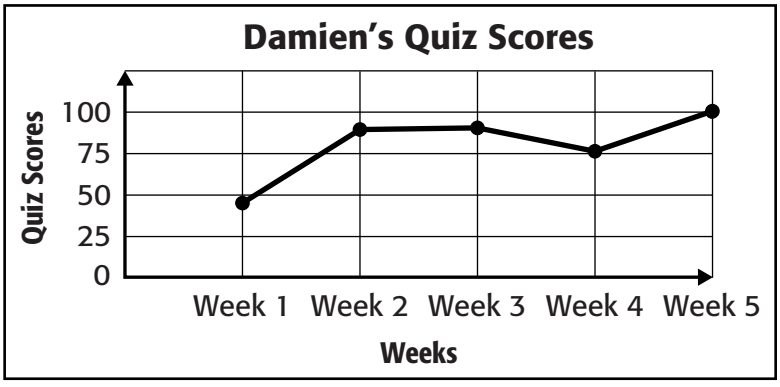
4–7 Skills Practice

4SDAP1.3

Interpret Line Graphs

For Exercises 1–3, use the line graph.



1. In what week did Damien receive the lowest score on a quiz?

_____

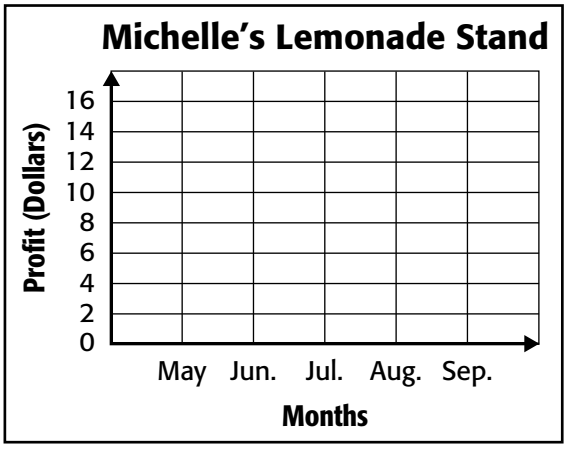
2. In what weeks did Damien receive the second highest score on a quiz? _____

3. In what week did Damien most improve his quiz score?

_____

Make a line graph that displays the data. Then answer the questions.

4. Michelle wants to see how much of a profit her lemonade stand has made between the months of May and September. In May, she made $5, in June $13, in July $12, $14 in August, and $7 in September.



5. How much of a gain did Michelle see from May to July? _____

6. In what month did Michelle see the sharpest drop in profit?

_____

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Name _____ Date _____

Reteach

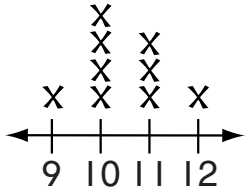
4SDAP1.3, 4SDAP1.1

Analyze Graphs

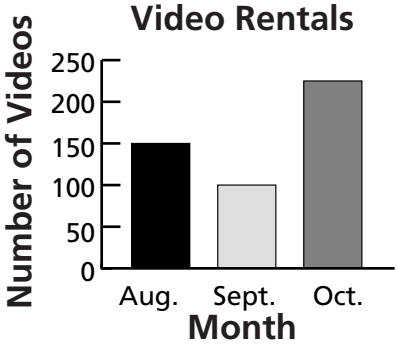
Different types of graphs are used to show different types of data.

A line plot is used to display a single set of data.

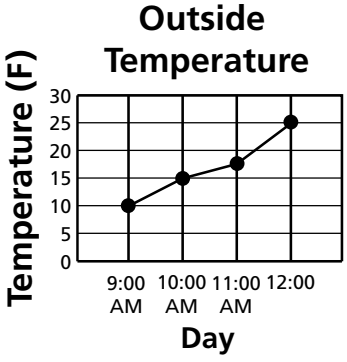
Ages of chess club Members



A bar graph can also be used to display a single set of data.



A line graph is the best way to display change over time.



For Exercises 1–2, use the bar graph above.

1. In which month was the greatest number of videos rented?

_____

2. About how many more videos were rented in August than September? _____

For Exercises 3–4, use the line graph above.

3. What was the temperature outside at 9:00 A.M.? _____

4. How many degrees warmer was it at 12:00 than it was at 10:00?

_____

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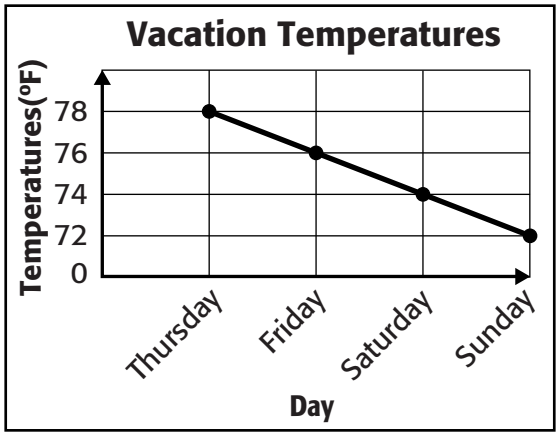
4–8 Skills Practice

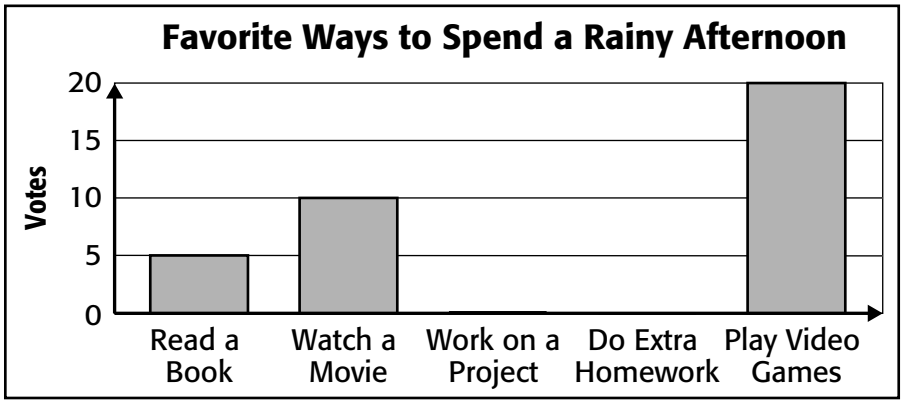
4SDAP1.3, 4SDAP1.1

Analyze Graphs



For Exercises 1–2, use the line graph.

1. Which day was warmest? _____
2. If the pattern continues, what will be the temperature on Monday? _____



For Exercises 3–5, use the bar graph.

3. How many total votes are there? _____
4. How many more people prefer to read a book than do extra homework? _____
5. What is the second most popular way to spend a rainy afternoon? _____

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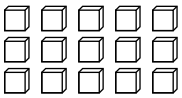
Reteach

4MR2.3, 4NS3.0

Relate Multiplication and Division

Use a related fact to find 15 ÷ 5.



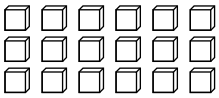
Think: How many groups of 5 are in 15?

? × 5 = 15 → 3 × 5 = 15

There are 3 groups of 5 in 15. So, 15 ÷ 5 = 3.

Write a related multiplication fact and complete the division equation.

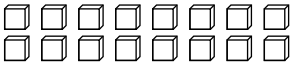
1. 18 ÷ 6



3 × ☐ = 18

18 ÷ 6 = ☐

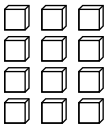
2. 16 ÷ 8



2 × ☐ = 16

16 ÷ 8 = ☐

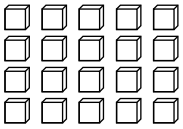
3. 12 ÷ 3



4 × ☐ = 12

12 ÷ 3 = ☐

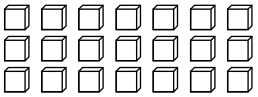
4. 20 ÷ 5



_____

20 ÷ 5 = ☐

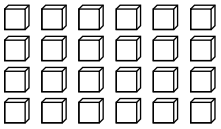
5. 21 ÷ 7



_____

21 ÷ 7 = ☐

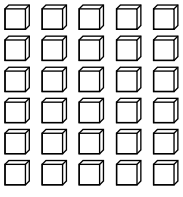
6. 24 ÷ 6



_____

24 ÷ 6 = ☐

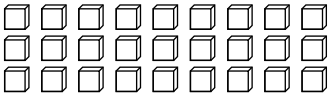
7. 30 ÷ 5



_____

30 ÷ 5 = ☐

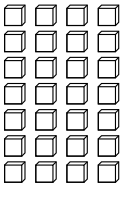
8. 27 ÷ 9



_____

27 ÷ 9 = ☐

9. 28 ÷ 4



_____

28 ÷ 4 = ☐

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5–1

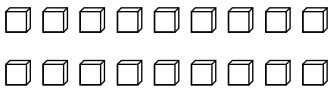
Name _____ Date _____

Skills Practice

4MR2.3, 4NS3.0

Relate Multiplication and Division

Write a fact family for each array.

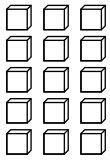
1. 

$2 \times \square = 18$

$\square \times 2 = 18$

$18 \div \square = 9$

$18 \div 9 = \square$

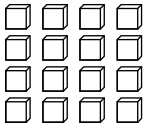
2. 

$5 \times \square = 15$

$3 \times \square = 15$

$15 \div 5 = \square$

$15 \div 3 = \square$

3. 

$4 \times \square = 16$

$\square \times 4 = 16$

$16 \div 4 = \square$

$16 \div \square = 4$

Divide. Use a related multiplication fact.

4. $6 \div 2 =$ ___	**5.** $42 \div 7 =$ ___	**6.** $8\overline{)56}$ ___
7. $18 \div 2 =$ ___	**8.** $3\overline{)21}$ ___	**9.** $9\overline{)45}$ ___
10. $15 \div 5 =$ ___	**11.** $7\overline{)21}$ ___	**12.** $9\overline{)81}$ ___
13. $8 \div 4 =$ ___	**14.** $2\overline{)16}$ ___	**15.** $9\overline{)36}$ ___
16. $27 \div 3 =$ ___	**17.** $3\overline{)18}$ ___	**18.** $8\overline{)64}$ ___
19. $14 \div 2 =$ ___	**20.** $5\overline{)25}$ ___	**21.** $9\overline{)72}$ ___
22. $28 \div 7 =$ ___	**23.** $5\overline{)45}$ ___	**24.** $6\overline{)54}$ ___
25. $36 \div 6 =$ ___	**26.** $7\overline{)56}$ ___	**27.** $4\overline{)24}$ ___

Solve.

28. It takes 4 horses to pull a coach. How many coaches can 20 horses pull? _____

29. Groups of 6 visitors can take tours of an old western town. How many groups can 24 people make? _____

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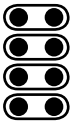
Name _____ Date _____

Reteach

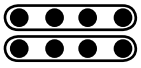
4AF1.0

Algebra: Multiplication and Division Properties

Commutative Property
The order of the factors does not change the answer.



$4 \times 2 = 8$



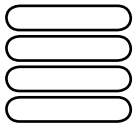
$2 \times 4 = 8$

Identity Property
The product of 1 and any number is that number.

$3 \times 1 = 3$

$1 \times 6 = 6$

Zero Property
The product of any number and zero is zero.



Think: 4 rows of 0 counters.

$4 \times 0 = 0$

Think: 0 rows of 7 counters.

$0 \times 7 = 0$

Identify the property shown by each number sentence.

1. $3 \times 9 = 9 \times 3$	**3.** $4 \times 0 = 0$	**5.** $5 \div 1 = 5$
2. $5 \div 5 = 1$	**4.** $0 \div 6 = 0$	**6.** $3 \times 5 = 5 \times 3$

ALGEBRA Complete each number sentence.

7. $8 \div 1 =$ ☐

8. $0 \div 7 =$ ☐

9. $2 \times 3 =$ ☐ $\times 2$

10. $6 \div$ ☐ $= 6$

11. $5 \div 1 =$ ☐

12. $9 \div 1 =$ ☐

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5–2

Name _____ Date _____

Skills Practice

4AF1.0

Algebra: Multiplication and Division Properties

Multiply. Then use the Commutative Property to write a different multiplication equation.

1. $9 \times 8 =$ _____ _____

2. $9 \times 4 =$ _____ _____

3. $6 \times 9 =$ _____ _____

4. $8 \times 7 =$ _____ _____

5. $3 \times 4 =$ _____ _____

6. $2 \times 3 =$ ___ _____

Identify the property shown by each number sentence.

7. $5 \times (2 \times 4) = (5 \times 2) \times 4$

_____

8. $8 \div 8 = 1$ _____

9. $5 \times 4 = 4 \times 5$

_____

10. $1 \times 3 = 3$ _____

11. $4 \times 0 = 0$ _____

Write × or ÷ to make each equation true.

12. $6 \bigcirc 6 = 36$

13. $8 \bigcirc 1 = 8$

14. $0 \bigcirc 9 = 0$

15. $7 \bigcirc 7 = 1$

16. $9 \bigcirc 9 = 81$

17. $3 \bigcirc 9 = 27$

Solve.

18. Joe plants pine seedlings in 7 rows. He puts 6 seedlings in each row. How many seedlings does Joe plant?

_____

19. Tanya has 54 pencils altogether. She has 6 packages. How many pencils are in each package?

_____

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Name _____ Date _____

Reteach

4NS3.0

Multiply and Divide Facts Through 5

You can double a fact you know to multiply by 4.

Double a fact you already know to multiply by 4.

$4 \times 5 = (2 \times 5) + (2 \times 5)$

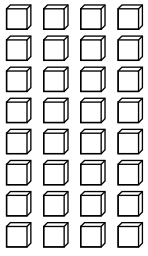
$10 + 10 = 20$

Double a fact you already know to multiply by 4.

$4 \times 7 = (2 \times 7) + (2 \times 7)$

$14 + 14 = 28$

Find 32 ÷ 4. Think: How many groups of 4 are in 32?



$4 \times ? = 32 \rightarrow 4 \times 8 = 32$

There are 8 groups of 4 in 32. So, $32 \div 4 = 8$.

Double a known fact to find the answer.
You can use counters to help you.

1. $6 \times 4 = (6 \times 2) + (6 \times \square) = \square + \square = \square$

2. $4 \times 7 = (2 \times \square) + (2 \times \square) = \square + \square = \square$

3. $9 \times 4 = (9 \times \square) + (9 \times \square) = \square + \square = \square$

4. $8 \times 4 = (8 \times \square) + (8 \times \square) = \square + \square = \square$

Divide. Draw models if you wish.

5. $12 \div 2 =$ _____

6. $21 \div 3 =$ _____

7. $20 \div 5 =$ _____

8. $14 \div 2 =$ _____

9. $24 \div 3 =$ _____

10. $16 \div 2 =$ _____

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Name _____ Date _____

5–3

Skills Practice

4NS3.0

Multiply and Divide Facts Through 5

Multiply or divide.

1. 2×8 _____

2. 5×4 _____

3. 4×1 _____

4. 0×9 _____

5. 10×5 _____

6. 3×3 _____

7. 5×2 _____

8. 4×4 _____

9. $5 \div 1$ _____

10. $12 \div 3$ _____

11. $6 \div 2$ _____

12. $15 \div 3$ _____

ALGEBRA Complete each number sentence.

13. $\square \times 4 = 20$

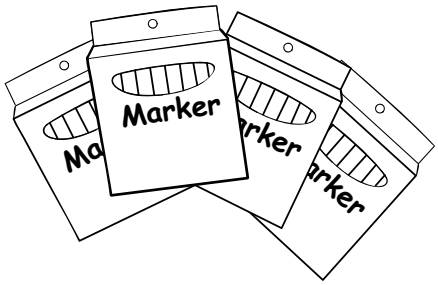
14. $\square \div 5 = 10$

15. $2 \times 5 = \square$

16. $44 \div \square = 4$

ALGEBRA Solve.

17.



There are 4 boxes of markers in a class. There are 20 students in the class. How many students share each box of markers?

_____

18. Sam is having a party with 17 of his friends. If 3 people can swing on the swing set at one time, how many groups will have to take turns?

_____

19. Brian has 4 packs of seeds to plant. If he uses one pack in a row, how many rows will he fill? _____

20. A clown has two bunches of flowers. Each bunch has 7 flowers in it. How many total flowers does the clown have? _____

21. Rosita has 40 stickers. If each pack of stickers has 5, how many packs of stickers does she have? _____

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Name _____ Date _____

Reteach

4MR1.1, 4NS3.0

Problem-Solving Skill

Choose an Operation

Nadia collects souvenir flags. She puts the flags in her bookcase. The flags take up three rows. There are 7 flags in each row. How many flags does Nadia have?

Step 1. Understand
Be sure you understand the problem.

What do you know?

- Nadia has ☐ rows of flags.
- There are ☐ flags in each row.

What do you need to find?

- Total number of flags.

Step 2. Plan
Choose an operation.

To find the total of 3 equal groups of flags, you can use repeated addition or multiplication. Use multiplication because it is faster.

Step 3. Solve
Follow your plan.

Find how many flags Nadia has.

Nadia puts the flags in 3 rows. There are 7 flags in each row.
$3 \times 7 = 21$
Nadia has 21 flags.

Step 4. Check
Look back at the Problem.

Use repeated addition.
$7 + 7 + 7 = 21$

Solve.

1. Janell has 472 baseball cards. Lou has 397 baseball cards. How many more baseball cards does Janell have than Lou?

_____

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Name _____ Date _____

5–4

Reteach *(continued)*

4MR1.1, 4NS3.0

Problem-Solving Skill

2. Kevin buys 7 packs of football cards. There are 4 football cards in each pack. How many football cards does Kevin buy?

_____

3. Brian displays his trophies in his bedroom. He puts his trophies in 3 rows. There are 6 trophies in each row. How many trophies does Brian have?

_____

4. Barbara puts photos of France in a photo album. The photo album can hold 94 photos. Barbara has 78 photos. How many more photos can she put in the album?

_____

5. Amad has 4 rows of sock pairs in his drawer. Each row has 8 pairs. How many pairs does Amad have in all?

_____

6. Li Cheng puts his comic books into 3 airtight bins. If each bin holds 8 comic books, how many comic books does Li Cheng have?

_____

7. Teresa has 900 stickers. Her sister Maria has 727. How many more stickers does Teresa have than her sister?

_____

8. Ms. Hernandez has 40 roses to share equally with each girl in her class. If each girl gets 5 roses, how many girls are in the class?

_____

9. If you have 30 points, but need 179 in order to win a prize, how many more points do you need?

_____

10. Sheryl has 4 apples. If she gives none of them away, how many does she have left?

_____

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Name _____ Date _____

Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Skill

Choose an Operation

Solve. Tell how you chose the operation.

1. Georgia puts coins in an album. There are 8 pages in the album. Each page has slots for 4 coins. How many coins can Georgia put in the album? _____

_____

_____

2. Dina has 37 international dolls. Maxine has 26 international dolls. Who has more dolls? How many more does she have?

_____

_____

_____

3. Ben buys 9 packs of dinosaur stickers. There are 5 stickers in each pack. How many stickers does Ben buy? _____

_____

_____

_____

4. Melanie has a collection of 242 stamps. At a stamp convention, she buys 19 more stamps. How many stamps does Melanie have now? _____

_____

5. James collects model cars. He has 48 model cars. On his birthday, James gets 7 more cars. How many model cars does James have in all?

_____

_____

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Name _____ Date _____

Reteach

4MR3.2, 4NS3.0

Multiply and Divide Facts Through 10

Multiply

Skip-count with nickels to multiply by 5.

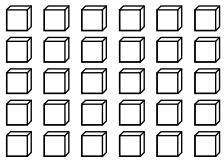
Find 4 × 5. Think: Skip-count by 5s four times.

5 10 15 20

4 × 5 = 20

Divide

Find 30 ÷ 6.
Think: How many groups of 6 are in 30?



? × 6 = 30 → 5 × 6 = 30
There are 5 groups of 6 in 30. So, 30 ÷ 6 = 5.

Multiply or divide.

1. 7 × 5 = _____ **2.** 21 ÷ 3 = _____ **3.** $10\overline{)30}$ _____

4. 8 × 6 = _____ **5.** 20 ÷ 5 = _____ **6.** $7\overline{)35}$ _____

7. 9 × 8 = _____ **8.** 12 ÷ 2 = _____ **9.** $6\overline{)36}$ _____

10. $\begin{array}{r} 5 \\ \times\ 8 \\ \hline \end{array}$ **11.** $\begin{array}{r} 10 \\ \times\ 9 \\ \hline \end{array}$ **12.** $\begin{array}{r} 6 \\ \times\ 6 \\ \hline \end{array}$

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5–5

Name _____ Date _____

Skills Practice

4MR3.2, 4NS3.0

Multiply and Divide Facts Through 10

Multiply or divide.

1. 6×8 _____

2. $8 \div 2$ _____

3. $8\overline{)80}$ _____

4. 7×4 _____

5. $15 \div 3$ _____

6. $7\overline{)56}$ _____

7. 4×10 _____

8. $80 \div 8$ _____

9. $6\overline{)42}$ _____

10. 0×7 _____

11. $21 \div 3$ _____

12. $5\overline{)45}$ _____

13. $\begin{array}{r} 9 \\ \times\ 6 \\ \hline \end{array}$

14. $\begin{array}{r} 8 \\ \times\ 3 \\ \hline \end{array}$

15. $\begin{array}{r} 6 \\ \times\ 2 \\ \hline \end{array}$

16. $\begin{array}{r} 3 \\ \times\ 9 \\ \hline \end{array}$

ALGEBRA Solve.

17.

Kia has 48 apples to split evenly into 4 gift baskets. How many apples will fit into each basket?

_____

18. Jan is making bracelets for her friends. She is using 10 beads for each bracelet. How many beads will she use if she makes 7 bracelets?

_____

19. Amy scored 8 points in her basketball game. If she scored the same number of points in the next 3 games, how many points did she score altogether?

_____

20. Laura bought 2 grapefruits for each of her 3 friends. If each grapefruit has 10 pieces, how many pieces will there be in all?

_____

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Name _____ Date _____

Reteach

4MR3.3, 4NS3.0

Multiply with 11 and 12

You can use a related multiplication fact to find the quotient to a division problem.

Elliot and 6 of his friends go to Happy Land Park. The total for all of their tickets was $77. How much did each person pay for his ticket?

Use a related multiplication fact to help you find $77 ÷ 7.

THINK 7 × $ ___ = $77
7 × $11 = $77

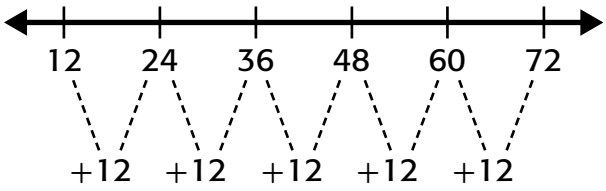
$77 ÷ 7 = $11 So, the cost of each ticket was $11.

You can use either repeated addition or arrays to multiply.

At the store, how many dozen muffins are in a tray of 72?
Find how many dozens of muffins there are in 72 by finding

_____ × 12 = 72.

Skip count by 12s.



So, 6 × 12 = 72

Multiply or divide.

1. 12 × 7 _____

2. 110 ÷ 11 _____

3. 3 × 12 _____

4. 11 × 11 _____

5. 88 ÷ 11 _____

6. 12 × 6 _____

7. Art students were making frames out of craft sticks. Each frame uses 11 sticks. If there are 44 total sticks, how many frames can they make?

_____

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5–6

Name _____ Date _____

Skills Practice

4MR3.3, 4NS3.0

Multiply with 11 and 12

Multiply or divide.

1. 11×8 _____

2. $12 \div 2$ _____

3. 7×12 _____

4. $33 \div 3$ _____

5. 4×11 _____

6. $88 \div 8$ _____

7. 12×9 _____

8. $72 \div 12$ _____

9. $5\overline{)55}$ _____

10. $12\overline{)96}$ _____

11. $11\overline{)44}$ _____

12. $5\overline{)60}$ _____

13. $\begin{array}{r} 12 \\ \times\ 5 \\ \hline \end{array}$

14. $\begin{array}{r} 11 \\ \times\ 3 \\ \hline \end{array}$

15. $\begin{array}{r} 12 \\ \times\ 2 \\ \hline \end{array}$

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

ALGEBRA Solve.

17. Kim has 11 people over for a party. Each table can seat 4 people. How many tables will she need? _____

18. Jennifer is making key chains for her family. She is using 11 beads for each key chain. How many beads will she use if she makes 6 key chains? _____

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Name _____ Date _____

Reteach

4MR1.1, 4NS3.0

Problem-Solving Investigation

To practice making sharper turns, Camille sets up an obstacle course. She places cones 7 feet apart over a distance of 42 feet. She places the first cone 7 feet from the starting line. How many cones does Camille use?

Step 1. Understand

Be sure you understand the problem.
Read carefully.

What do you know?

- The cones are spread over a distance of _____ feet.
- Camille begins 7 feet from the starting line and places cones _____ feet apart.

What do you need to find?

- You need to find how many _____.

Step 2. Plan

- Logical Reasoning
- Make a Graph
- Make a Table or List
- Guess and Check
- Work Backward
- Draw a Picture or Diagram
- Act It Out
- Find a Pattern
- Write an Equation
- Solve a Simpler Problem

Make a plan.

Choose a strategy.
To find the answer, you can draw a diagram.
Show a distance that is 42 feet long.
Count by 7s to see how many cones Camille uses if they are placed 7 feet apart.

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5–7

Name _____ Date _____

Reteach *(continued)*

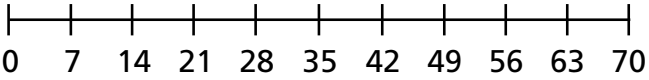
4MR1.1, 4NS3.0

Problem-Solving Investigation

Step 3. Solve

Carry out your plan.

Draw a diagram. Show a 42-foot distance. Count by 7s, adding tick marks as shown.



Count the tick marks from 7 to 42. Camille uses _____ cones.

OR: Write an equation.

The distance is _____ feet. There will be 1 cone every _____ feet.

Write a division equation. _____ ÷ _____ = _____

Camille uses _____ cones.

Step 4. Check

Is the solution reasonable?

Reread the problem.

Does your answer make sense? Yes No
Which method do you prefer? Explain.

_____

_____

Practice

1. The parks department builds 5 rows of stands next to a baseball field. Each row is 20 feet long. How many 10-foot-long boards did they need to build the stands? _____

2. Ed has 4 packs of sports stickers. There are 24 stickers in each pack. He divides the stickers among 3 friends. How many stickers does each friend get? _____

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Name _____ Date _____

Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Investigation

Choose a strategy. Use it to solve the problem.

1. The Sports Committee buys 30 feet of material. The material is cut into banners that are 5 feet long. How many banners are made? _____

2. The Sand Trap Golf Shop has 72 golf balls in stock. The golf balls are packed in tubes of 6. How many tubes of golf balls does the store have? _____

3. Liam is building a fence around his entire backyard. The backyard is 24 feet wide and 60 feet long. If Liam uses sections of fencing that are 12 feet long, how many sections does he use?

   _____

4. Tina makes a display of 36 autographed baseballs. She puts 12 baseballs in a large display case. Tina also has 4 smaller display cases. How can she arrange the baseballs in the smaller cases so that each smaller case has an equal number of baseballs?

   _____

   _____

5. Francine uses a pattern to make a window display for a sneaker store. The first row has 2 sneakers, the second row has 6 sneakers, the third row has 10, and the fourth row has 14. How many sneakers are in the fifth row? _____

6. The Stadium Store sells 450 team photos and 369 individual photos. How many photos does it sell in all? _____

7. Write a problem that you could solve by drawing a diagram or by writing a division sentence. Share it with others.

   _____

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Name _____ Date _____

5–8

Reteach

4AF1.0

Multiply Three Numbers

You can use the Associative Property of Multiplication to multiply more than two numbers.

If you have 3 cats and they each eat 2 cans of food per day, how many cans do they eat in 1 week?

You need to find $3 \times 2 \times 7$.

You will multiply two of the facts together at a time.

$(3 \times 2) \times 7$
6×7
42

So, they will eat 42 cans of food in 1 week.

Multiply.

1. $4 \times 6 \times 2$ _____

2. $12 \times 3 \times 3$ _____

3. $9 \times 1 \times 3$ _____

4. $8 \times 1 \times 5$ _____

5. $7 \times 3 \times 1$ _____

6. $11 \times 4 \times 2$ _____

ALGEBRA Copy and complete each number sentence.

7. $3 \times \square \times 3 = 63$

8. $8 \times 2 \times \square = 16$

9. $4 \times 3 \times 4 = \square$

10. $2 \times \square \times 6 = 120$

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Name _____ Date _____

5–8

Skills Practice

4AF1.0

Multiply Three Numbers

Multiply.

1. $3 \times 1 \times 6 =$ _____

2. $8 \times 4 \times 2 =$ _____

3. $4 \times 2 \times 7 =$ _____

4. $7 \times 3 \times 3 =$ _____

5. $9 \times 2 \times 4 =$ _____

6. $11 \times 12 \times 1 =$ _____

ALGEBRA Copy and complete each number sentence.

7. $2 \times \square \times 4 = 64$ _____

8. $3 \times 3 \times \square = 90$ _____

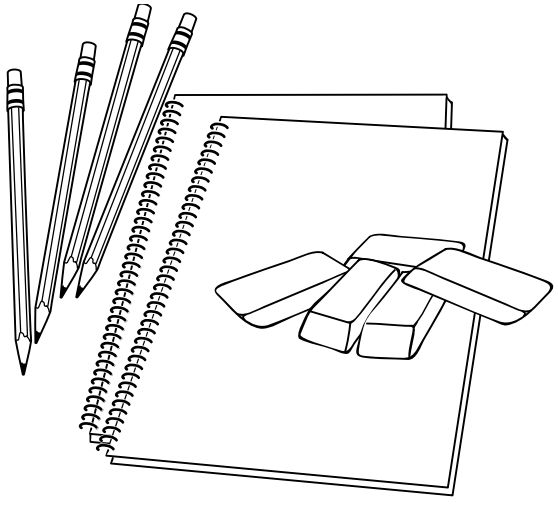
9. $3 \times 4 \times 6 = \square$ _____

10. $10 \times 11 \times \square = 110$ _____

11. If you own 2 birds and they each eat 1 cup of seeds per week, how many cups of seeds do they eat in 6 weeks?

_____

12.



You buy 2 notebooks, 4 pencils, and 5 erasers. For 25¢ each, how much would you pay for all the items? _____

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Name _____ Date _____

Reteach

4MR2.3, 4NS4.1

Factors and Multiples

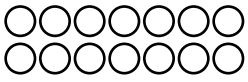
Laura is arranging her photos. She has 14 photos to arrange in a frame. How many ways can she arrange them?

You need to find all the factors of 14 to find out how many ways Laura can arrange her pictures.

Factors are numbers that divide into a whole number evenly. You will find number pairs that make a product of 14.

$1 \times 14 = 14$

$2 \times 7 = 14$

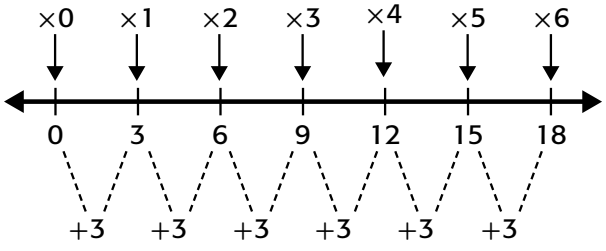


So, the factors of 14 are 1, 2, 7, and 14. The different arrays show two ways that the pictures can be arranged.

A **multiple** is the product of that number and a whole number. For example, 10 is a multiple of 2 because $5 \times 2 = 10$.

Find the first 7 multiples of 3.

On a multiplication table, look across the row for 3 or down the column for 3. All of the numbers listed in the row or column are multiples of 3.



So, the first 7 multiples of 3 are 0, 3, 6, 9, 12, 15 and 18.

Find all of the **factors** of each number.

1. 5 _____ **2.** 8_____ **3.** 13 _____

Identify the first five multiples for each number.

4. 2 ___, ___, ___, ___, _____

5. 4 ___, ___, _____, _____, _____

6. 6 ___, _____, _____, _____, _____

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Name _____ Date _____

Skills Practice

4MR2.3, 4NS4.1

Factors and Multiples

Find all of the **factors** of each number.

1. 3 _____

2. 5 _____

3. 12 _____

4. 18 _____

5. 22 _____

6. 34 _____

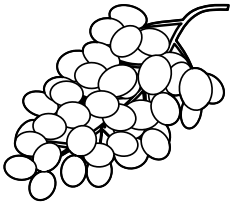
Identify the first five **multiples** for each number.

7. 4 ___, ___, _____, _____, _____

8. 5 ___, _____, _____, _____, _____

9. 8 ___, _____, _____, _____, _____

10. 11 _____, _____, _____, _____, _____

11. 

If you eat 10 grapes each day, how many grapes will you eat in 9 days? In 10, 11, and 12 days?_____, _____, _____, _____

12. Each music class sings 8 songs each week. How many songs does each class sing in 5 weeks? 8 weeks? 10 weeks?

_____, _____, _____

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Name _____ Date _____

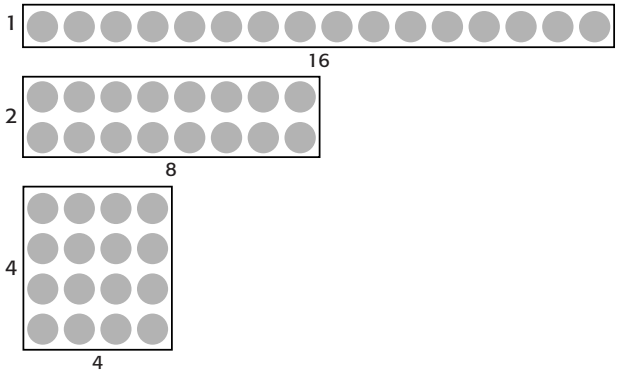
Reteach

4NS4.2

Prime and Composite Numbers

Jeanne is organizing her shoes in a shoe rack. There are the same number of shoes in each row and column. If Jeanne has 16 pairs of shoes, how many ways can she arrange the shoes?

You need to find all the factors of 16 to find out how many ways Jeanne can arrange her shoes.



$1 \times 16 = 16$

$2 \times 8 = 16$

$4 \times 4 = 16$

So, the factors of 16 are 1, 2, 4, 8, and 16. The shoes can be arranged in three ways, 1×16, 2×8, or 4×4.

A number like 16 that has *more than two factors* is a **composite number**.

A number that *has only two factors* is a **prime number**.

The factors of 2 are 1 and 2.

2 has exactly two factors, 1 and 2, so it is a prime number.

Find the factors of each number. Then tell whether the number is *composite* or *prime*.

1. 4 _____

_____

2. 9 _____

_____

3. 7 _____

_____

4. 27 _____

_____

Solve.

5. Arrange a bulletin board with equal rows and columns for 32 drawings. Decide if 32 is a prime or composite number. List all the ways to present the bulletin board.

_____

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5–10

Name _____ Date _____

Skills Practice

4NS4.2

Prime and Composite Numbers

Tell whether each number is *prime, composite,* or *neither.*

1. 2 _____

2. 4 _____

3. 6 _____

4. 13 _____

5. 27 _____

6. Find the factors of 16. _____

Solve.

7. Arrange your bookshelf with equal books in each row for a stack of 49 books. Decide if 49 is a prime or composite number. List all the ways to present the books. _____

_____

8. Arrange 4 bed pillows. You want to order them in equal rows and columns. How many ways can you arrange them? _____

_____

9. List 2 prime numbers and their factors. _____

10. List the factors for 5, 25, and 50. _____

_____

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Name _____ Date _____

Reteach

4AF1.0

Multiplication and Division Expressions

A variable is used in an expression to represent an unknown number. In the expression $5 \times x$, the unknown number is represented by the variable x.

You can find the value of an expression by substituting different numbers for the variable.

Find the value of $5 \times x$ when $x = 2$. $5 \times x$ $5 \times 2 = 10$ So, the value of $5 \times x$ when $x = 2$ is 10.	Find the value of $5 \times x$ when $x = 5$. $5 \times x$ $5 \times 5 = 25$ So, the value of $5 \times x$ when $x = 5$ is 25.
Find the value of $m \div 3$ when $m = 21$. $m \div 3$ $21 \div 3 = 7$ So, the value of $m \div 3$ when $m = 21$ is 7.	Find the value of $m \div 3$ when $m = 15$. $m \div 3$ $15 \div 3 = 5$ So, the value of $m \div 3$ when $m = 15$ is 5.

Find the value of the expression.

1. $m \times 1$ when $m = 1$ _____

2. $5 \times s$ when $s = 3$ _____

3. $16 \div y$ when $y = 2$ _____

4. $b \times 3$ when $b = 2$ _____

5. $c \times 4$ when $c = 5$ _____

6. $f \div 1$ when $f = 6$ _____

7. $a \div 2$ when $a = 8$ _____

8. $8 \times d$ when $d = 0$ _____

9. $3 \times x$ when $x = 4$ _____

10. $10 \div w$ when $w = 5$ _____

11. $z \times 4$ when $z = 10$ _____

12. $6 \times p$ when $p = 2$ _____

13. $30 \div l$ when $l = 6$ _____

14. $k \times 8$ when $k = 4$ _____

15. $r \div 6$ when $r = 48$ _____

16. $p \times 7$ when $p = 6$ _____

17. $g \div 3$ when $g = 21$ _____

18. $s \times 5$ when $s = 5$ _____

19. $n \times 9$ when $n = 3$ _____

20. $72 \div t$ when $t = 8$ _____

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6–1

Name _____ Date _____

Skills Practice

4AF1.0

Multiplication and Division Expressions

Find the value of each expression.

1. $3 \times (5 \div 1)$ _____

2. $(8 \times 3) \div 2$ _____

3. $12 \times (6 \div 2)$ _____

Circle the best expression.

4. Each week Mark spends 10 minutes a day cleaning his room for 3 days. Mark does this for 3 weeks.

A. $(10 \times 3) + 15$
B. $10 \times (3 \times 3)$

5. Jennifer had 3 packs of 10 stickers. She gave half of her stickers to Melanie.

A. $3 \times (10 \times 2)$
B. $(3 \times 10) \div 2$

Find the value of each expression for the value given.

6. $(d \times 6) \div 2$ for $d = 2$ _____

7. $8 \times (5 \times z)$ for $z = 2$ _____

8. $(14 \div n) \times 3$ for $n = 7$ _____

9. $(x \times 2) \times 2$ for $x = 3$ _____

10. $x \times (4 \times 3)$ for $x = 10$ _____

11. $8 \times (15 \div x)$ for $x = 5$ _____

Solve. Use data from the chart for problems 12 and 13.

12. Last week, Karla bought 3 pens. How much did she spend?

_____

13. This week, all items are half price. How much will Karla pay for a ruler and a notebook? _____

Item	Cost
pen	$3
ruler	$2
notebook	$4

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Name _____ Date _____

6–2 Reteach

4MR1.1, 4NS3.0

Problem-Solving Strategy

Work Backward

Tim had $5 more yesterday than he does today. Yesterday he had $10. How much does Tim have today?

Step 1. Understand	**Be sure you understand the problem. Read carefully.** • What do you know? Tim had _____ more yesterday than he does today. Yesterday Tim had _____. • What do you need to find? You need to find how much _____.
Step 2. Plan • Use Logical Reasoning • Draw a Picture or Diagram • Make a Graph • Act It Out • Make a Table or List • Find a Pattern • Guess and Check • Write an Equation • Work Backward • Solve a Simpler Problem	**Make a plan.** Choose a strategy. You can work backward to solve the problem. Start with how much Tim had yesterday. Then work backward to find how much he has today.

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Name _____ Date _____

6–2

Reteach *(continued)*

4MR1.1, 4NS3.0

Problem-Solving Strategy

Step 3. Solve	**Carry out your plan.** You know Tim had _____ yesterday. You know Tim had _____ more yesterday than he does today. Think: Tim had $10 yesterday, which is $5 more than he has today. Subtract to find how much Tim has today. $10 − $5 = $5 Tim has _____ today.
Step 4. Check	**Is the solution reasonable?** Reread the problem. Work forward to check your answer. Start with your answer. Add $5. Did you end with $10? _____ What other strategies could you use to solve the problem? _____

Practice

1. Patti had $10 less yesterday than she does today. Yesterday she had $1. How much does Patti have today? _____

2. Fred and Ed walk to the library. Fred walks twice as far as Ed. Ed walks 2 miles. How far does Fred walk? _____

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Name _____ Date _____

Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Strategy

Solve. Use the *work backward* strategy.

1. Carol had $10 less yesterday than she does today. Yesterday she had $15. How much does Carol have today? _____

2. J.R. had 5 baseball cards. Then he bought some more baseball cards at the store. Now J.R. has 9 baseball cards. How many cards did J.R. buy? _____

3. Mr. Robinson and Ms. Alvirez drive to the same movie theater. Mr. Robinson drives twice as far as Ms. Alvirez. Ms. Alvirez drives 15 miles. How far does Mr. Robinson drive? _____

4. Suki has 4 times as many New York quarters as Georgia quarters. She has 24 New York quarters. How many Georgia quarters does Suki have? _____

Mixed Strategy Review

Solve. Use any strategy.

5. Barry spent $6 on a book, $9 on snacks, and $2 on bus fare. He gave $3 to a friend. How much money did Barry start with?

   _____

6. Mr. Carlson has $424. He spends $29 on gasoline. How much money does Mr. Carlson have left? _____

7. Walking a mile burns about 110 calories. About how many calories would you burn if you walked 2 miles?

   _____

8. Write a problem that can be solved by working backward. Share it with others.

   _____

   _____

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Name _____ Date _____

Reteach

4AF1.3

Order of Operations

Always use the order of operations to simplify expressions. The rules for the order in which you should perform operations are given below.

Simplify $(20 + 8) \div 4 - 2$.

Step 1:	**Step 2:**	**Step 3:**
Do the operations in parentheses first.	Multiply and divide from left to right.	Add and subtract from left to right.
$(20 + 8) \div 4 - 2$ $28 \div 4 - 2$	$28 \div 4 - 2$ $7 - 2$	$7 - 2$ 5

Write which operation should be done first.

1. $12 + 4 \div 2$ _____

2. $4 + (10 - 2)$ _____

3. $2 \times 8 \div 4$ _____

4. $(3 + 7) \div 2$ _____

5. $9 + 3 \times 2$ _____

6. $8 + 2 - 4$ _____

7. $6 \times (8 - 5)$ _____

8. $8 - 4 \times 2$ _____

9. $12 \div (2 + 2)$ _____

Find the value of each expression.

10. $3 \times (2 + 5) =$ _____

11. $14 \div 7 + 2 =$ _____

12. $9 + (6 - 2) =$ _____

13. $4 + 2 \times 5 =$ _____

14. $8 \div 2 - 2 =$ _____

15. $10 - 8 \div 4 =$ _____

16. $12 \div 3 - 2 =$ _____

17. $(1 + 5) \times 4 =$ _____

18. $8 - 8 \div 4 =$ _____

19. $(5 + 5) \div 2 =$ _____

20. $14 - 10 + 2 =$ _____

21. $16 \div 4 \div 2 =$ _____

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6–3

Name _____ Date _____

Skills Practice

4AF1.3

Order of Operations

Write which operation should be done first.

1. $2 \times 8 + 7$ _____

2. $2 + 3 \times 9$ _____

3. $4 + 10 \div 2$ _____

4. $9 - 2 + 3$ _____

5. $(3 + 2) \times 9$ _____

6. $8 \div (2 + 2)$ _____

7. $6 \div 2 - 1$ _____

8. $1 + 3 \times 5$ _____

9. $10 \div 5 \times 2$ _____

10. $7 - 8 \div 2$ _____

11. $(12 - 4) \div 2$ _____

12. $9 + 2 - 6$ _____

Find the value of each expression.

13. $3 + 2 \times 7 =$ _____

14. $10 \div 2 - 1 =$ _____

15. $9 - 6 \div 2 =$ _____

16. $24 \div 2 - 8 =$ _____

17. $(2 + 6) \times 7 =$ _____

18. $12 - 12 \div 3 =$ _____

19. $(4 + 6) \div 5 =$ _____

20. $12 - 3 + 9 =$ _____

21. $20 \div 5 \div 2 =$ _____

22. $18 \div 9 \times 6 =$ _____

23. $2 \times 8 \div 4 =$ _____

24. $20 - 5 \times 4 =$ _____

25. $2 \times 6 + 4 \times 3 =$ _____

26. $20 \div 2 \times 3 - 6 =$ _____

27. $(2 + 9) \times (7 - 3) =$ _____

28. $4 + (14 - 6) \times 2 + 5 =$ _____

29. $2 \times 9 + 10 \div 5 \times (3 + 2) =$ _____

30. $16 \div 4 \times 2 - 5 =$ _____

Solve.

31. Tamara buys 6 toys for $2 each. She has a $1-off coupon. How much does Tamara spend? Write an expression and simplify.

_____

32. Steven has 126 photos in an album. He adds 18 more photos to the album. Each page holds 12 photos. Write an expression and simplify to find out how many pages Steven fills.

_____

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Name _____ Date _____

6–4

Reteach

4AF1.0

Solve Equations Mentally

Sometimes in math it helps to think about what the problem is asking you to do. $7 \times c = 28$

In $7 \times c = 28$, you can ask, "7 times **what number** equals 28?" You might know that $7 \times 4 = 28$, so you know that 4 is the correct answer.

If you do not know the answer right away, you can try a few answers that you do know: "I know $7 \times 2 = 14$. 14 is less than 28, so I need to try something bigger." You can try this a few times to find the correct answer.

You can think about division problems the same way. In $35 \div f = 5$, "35 divided by **what number** equals 5?" You might know that $35 \div 7 = 5$, so you know that 7 is the correct answer.

If you do not know the answer right away, you can try a few answers that you do know: "I know that $35 \div 5 = 7$. 7 is greater than 5, so I need to try something bigger."

Write out each equation in words. The first problem has been done for you.

1. $2 \times v = 18$ 2 times what number equals 18?

2. $x \times 7 = 42$ _____

3. $8 \times p = 64$ _____

4. $9 \times y = 63$ _____

5. $g \div 6 = 9$ _____

6. $35 \div j = 7$ _____

7. $45 \div h = 9$ _____

8. $s \div 12 = 8$ _____

Write the missing number.

9. _____ $\times$ 8 = 48

10. 60 $\div$ _____ = 12

11. _____ $\times$ 6 = 54

12. 5 $\times$ _____ = 15

13. _____ $\div$ 5 = 10

14. 77 $\div$ _____ = 11

15. _____ $\times$ 3 = 27

16. 2 $\times$ _____ = 22

17. 81 $\div$ _____ = 9

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6–4

Name _____ Date _____

Skills Practice

4AF1.0

Solve Equations Mentally

Solve each equation mentally.

1. $2 \times a = 8$ _____

2. $b \times 7 = 42$ _____

3. $5 \times c = 40$ _____

4. $d \times 10 = 120$ _____

5. $9 \times e = 99$ _____

6. $f \times 4 = 36$ _____

7. $8 \div g = 4$ _____

8. $42 \div h = 6$ _____

9. $56 \div i = 7$ _____

10. $j \div 12 = 8$ _____

11. $24 \div k = 2$ _____

12. $72 \div l = 8$ _____

Write an equation for each situation. Then solve.

13. A number multiplied by 6 is 48. What is the number?

_____

14. 3 times a number is 21. What is the number?

_____

15. A number divided by 5 equals 8. What is the number?

_____

16. 64 divided by a number equals 8. What is the number?

_____

17. The product of a number and 4 is 48. What is the number?

_____

18. 120 divided by a number equals 10. What is the number?

_____

19. Kelly and her family rode bikes for x hours yesterday. They rode 36 miles at a speed of 12 miles per hour. Write and solve an equation to find how many hours they rode yesterday.

_____

20. Each of Caleb's y friends brings 8 snacks to his house. They have 32 snacks. Write and solve an equation to find out how many friends came to Caleb's house. _____

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Name _____ Date _____

Reteach

4MR1.1, 4NS3.0

Problem-Solving Investigation

Choose a Strategy

Fernando picked 18 apples to make applesauce. It will take 9 apples for each batch of sauce. How many batches of sauce can Fernando make?

Step 1 **Understand**	**Be sure you understand the problem.** Read carefully. What do you know? • Fernando picked _____ apples. • It will take _____ apples to make a batch of applesauce. What do you need to find? • You need to find how many batches of _____ Fernando can make.
Step 2. **Plan** • Logical Reasoning • Draw a Picture or Diagram • Act It Out • Make a Table • Find a Pattern • Write an Equation • Work Backward	**Make a plan.** Choose a strategy. To find the answer, you can draw a picture. Draw a picture of 18 apples. Circle groups of 9 apples to see how many batches Fernando can make. Then, check your solution to make sure it is reasonable.

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6–5

Name _____ Date _____

Reteach *(continued)*

4MR1.1, 4NS3.0

Problem-Solving Investigation

Step 3. Solve

Carry out your plan.

You know that you need to find out how many batches of applesauce Fernando can make with 18 apples.

Draw 18 circles to represent the apples. Circle groups of 9.

OR: You can also write a division equation.

Fernando has _____ apples. He will use _____ apples in each batch.

Write a division equation. _____ ÷ _____ = _____

Step 4. Check

Is the solution reasonable?

Reread the problem.

Does your answer make sense? Yes No

Which method do you prefer? Explain.

_____

_____

Practice

1. Stanley has 25 marbles, and he wants to share them with 5 friends. If each friend gets the same number of marbles, how many will each friend get?

_____

2. Robin spent 15 minutes reading on Monday. She spent 25 minutes reading on Tuesday and 35 minutes on Wednesday. If the pattern continues, how many minutes will she read on Friday?

_____

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Name _____ Date _____

6–5

Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Investigation

Choose a strategy. Use it to solve the problem.

1. Laura went to the playground with 7 friends. Three of them left early and one got hurt. How many are left to play with Laura?

   _____

2. There are 10 puppies at the puppy daycare. The puppies are fed 3 times a day. If they are given 1 cup of food each time, how much food will the puppy daycare use in one day?

   _____

3. There are 25 students going to a volleyball tournament. Each van carries 10 students. How many vans are needed? _____

4. Mr. Smith has 36 golf balls. He puts 18 golf balls in a large display case. Mr. Smith has 3 smaller display cases. If he puts the same number of golf balls in each of the smaller display cases, how many golf balls will be in each case? _____

Tell what strategy you used to solve the problem.

5. Caroline swims for 1 hour each day after school and 3 hours each day on the weekend. How many hours does Caroline swim in 2 weeks? _____

   Strategy: _____

6. Jonathan has 4 snakes in an aquarium. The second snake is twice as long as the first. The third snake is 2 inches shorter than the second and the fourth snake is 5 inches longer than the third. The first snake is 6 inches long. How long is the longest snake? Which snake is it? _____

   Strategy: _____

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Name _____ Date _____

Reteach

4AF1.5

Algebra: Find a Rule

Sometimes in math there is a pattern to the answers. Once you find the pattern, you can make a rule that will solve the problem for any input.

Use this problem to learn more about finding a pattern and making a rule.

No matter how many hats Vanessa has, Holly always has 4 times as many.

This problem tells you the rule: Vanessa's hats $\times$ 4 = Holly's hats. If Vanessa has 5 hats, how many hats does Holly have? Holly will have 5 $\times$ 4, or 20 hats.

Now see the same problem written a different way.

Rule: _____	
Vanessa's Hats Input (*v*)	**Holly's Hats Output (*h*)**
3	12
5	20
7	?
9	?

1. Identify the pattern: 3 $\times$ __ = 12
5 $\times$ __ = 20
The pattern is to multiply each number by 4.

2. Identify the rule and write it as an equation.
$v \times 4 = h$
So the next numbers in the table are 28 and 36.

Write an equation that describes the pattern. Then use the equation to find the next two numbers.

3.

Rule: _____	
Input (*d*)	**Output (*e*)**
1	3
2	6
3	9
4	
5	

4.

Rule: _____	
Input (*j*)	**Output (*k*)**
20	5
24	6
28	7
32	
36	

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6–6

Name _____ Date _____

Skills Practice

4AF1.5

Algebra: Find a Rule

Write an equation that describes the pattern. Then use the equation to find the next two numbers.

1.

Rule: _____	
Input (f)	Output (g)
3	18
4	24
5	30
6	
7	

2.

Rule: _____	
Input (h)	Output (i)
5	40
6	48
7	56
8	
9	

3.

Rule: _____	
Input (n)	Output (o)
27	3
36	4
45	5
54	
63	

4.

Rule: _____	
Input (t)	Output (u)
7	1
14	2
21	3
28	
35	

5. My class has to form teams of five. Make a table to find how many teams we can make if there are 15, 20, 25, and 30 of us.

_____

Rule: _____	
Input (k)	Output (t)
15	
20	
25	
30	

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Name _____ Date _____

Reteach

4AF2.2

Balanced Equations

Equations are balanced when both sides are equal (=). They are not balanced when the two sides are not equal (≠).

Think about holding a T-shirt in one hand and something heavier, like a pair of boots, in the other hand. You can tell that they are not the same weight.

T-shirt ≠ boots

If the two sides have the same totals, they are equal. They are equal even if the numbers on each side are different:

$2 \times 8 = 4 \times 4$
$(16) = (16)$

Sometimes you have to figure out what number to add or subtract from one side to make the two sides equal, or balanced.

$(1 + 2) \times \_\_ = 5 \times 6$

First, simplify.

$3 \times \_\_ = 30$

You need to multiply 3 by 10 to balance the equation.

$(1 + 2) \times \underline{10} = 5 \times 6$

Write = or ≠.

1. $1 + 5$ _____ $5 + 1$

2. 5×3 _____ $10 + 5$

3. $5 + 2 \times 4$ _____ 28

4. $18 \div 6$ _____ $18 \div 3$

Explain what you need to do to balance each equation. The first problem has been done for you.

5. $4 \times (3 + 6) = 6 \times$ _____
Multiply the right side by 6.

6. _____ $+ 3 = 5 \times 2$

---

7. $(6 + 2) \times 8 = 4 \times 2 \times$ _____

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6–7

Skills Practice

4AF2.2

Balanced Equations

Complete each equation to make it balanced.

1. $2 \times (9 - 6) = (8 - 6) \times$ _____

2. $15 - 4 \times$ _____ $= 27 \div 9$

3. _____ $\div (4 + 5) = 9 - 1$

4. $4 + 6 \times 3 =$ _____ $- 3 \times 4$

5. Colin walks 4 miles 3 days each week. Ana walks 12 miles each week for 5 weeks. How many weeks does Colin walk in order to go the same distance as Ana? _____

6. Ann earns \$10 per hour delivering newspapers. Dominique earns \$8 per hour delivering newspapers. Ann delivered newspapers for 4 hours. Use the equation $\$10 \times 4 = \$8 \times h$ to find how many hours Dominique must deliver papers to earn the same amount of money. _____

Tell whether each equation is balanced. Explain.

7. $8 \times 6 = 2 \times 4 \times 6$ _____

8. $3 \times 10 \div 5 = 28 \div 4$ _____

9. $3 \times 6 \div 2 = 2 \times 9 \div 2$ _____

10. $3 \times 3 \times 3 = 2 \times 6 \times 2$ _____

11. $10 \times 4 = 5 \times 2 \times 2 \times 2$ _____

12. $4 \times 5 = 2 \times 3 \times 4$ _____

13. $36 \div 3 = (12 \times 3) \div 3$ _____

14. $(8 \times 7) \div 8 = 42 \div 7$ _____

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Name _____ Date _____

Reteach

4NS3.0, 4MR2.2

Multiples of 10, 100, and 1,000

Multiply each number below by 10 by adding a zero to the end of the number.

1. $2 \times 10 =$ _____

2. $3 \times 10 =$ _____

Multiply each number below by 100 by adding two zeros to the end of the number.

3. $7 \times 100 =$ _____

4. $1 \times 100 =$ _____

Multiply each number below by 1,000 by adding three zeros to the end of the number.

5. $6 \times 1{,}000 =$ _____

6. $9 \times 1{,}000 =$ _____

Multiply. Use basic facts and patterns.

7. $3 \times 5 = 15$

$3 \times 5\underline{0} = 15\underline{0}$

$3 \times 5\underline{00} =$ _____

$3 \times 5{,}\underline{000} = 15{,}\underline{000}$

8. $5 \times 2 =$ _____

$5 \times 2\underline{0} = 1\underline{00}$

$5 \times 2\underline{00} = 1{,}\underline{000}$

$5 \times 2{,}\underline{000} =$ _____

9. $4 \times 2 = 8$

$4 \times 2\underline{0} = 8\underline{0}$

$4 \times 2\underline{00} =$ _____

$4 \times 2{,}\underline{000} =$ _____

10. $6 \times 5 = 30$

$6 \times 5\underline{0} = 30\underline{0}$

$6 \times 5\underline{00} =$ _____

$6 \times 5{,}\underline{000} =$ _____

Multiply. Use basic facts and patterns.

11. $1 \times 1{,}000 =$ _____

12. $6 \times 400 =$ _____

13. $9 \times 200 =$ _____

14. $8 \times 90 =$ _____

15. $3 \times 9{,}000 =$ _____

16. $2 \times 700 =$ _____

17. $5 \times 50 =$ _____

18. $4 \times 8{,}000 =$ _____

19. $8 \times 6{,}000 =$ _____

20. $7 \times 500 =$ _____

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7–1

Skills Practice

4NS3.0, 4MR2.2

Multiples of 10, 100, and 1,000

Multiply. Use basic facts and patterns.

1. $6 \times 30 =$ _____

2. $5 \times 300 =$ _____

3. $4 \times 3{,}000 =$ _____

4. $5 \times 40 =$ _____

5. $7 \times 300 =$ _____

6. $9 \times 1{,}000 =$ _____

7. $8 \times 20 =$ _____

8. $7 \times 500 =$ _____

9. $2 \times 9{,}000 =$ _____

10. $9 \times 80 =$ _____

11. $600 \times 5 =$ _____

12. $7{,}000 \times 4 =$ _____

13. $30 \times 2 =$ _____

14. $7 \times 200 =$ _____

15. $8 \times 700 =$ _____

16. $9 \times 700 =$ _____

17. $8 \times 50 =$ _____

18. $700 \times 6 =$ _____

19. $4{,}000 \times 9 =$ _____

20. $5 \times 60 =$ _____

Find the value of each variable.

21. $5 \times n = 2{,}500$ _____

22. $8 \times n = 32{,}000$ _____

23. $1 \times n = 10$ _____

24. $60 \times n = 120$ _____

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Name _____ Date _____

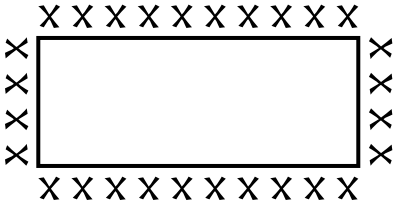
7–2

Reteach

4MR3.1, 4NS3.0

Problem–Solving Skill: Reasonable Answers

Jeff wants to invite some friends over for dinner. He has a large rectangular table and knows there is room to seat 10 people on each of the long sides and 4 on the two ends of his table.



If Jeff wants everyone seated at the table, how many friends can he invite? Is it reasonable for him to invite 40 people?

Step 1: Understand. What facts do you know? Jeff can seat 10 people on each of the long sides of his table. Jeff can seat 4 people on each of the ends of his table. Jeff wants everyone seated at the table.
Step 2: Plan. What you need to know? How many friends is it reasonable for Jeff to invite?
Step 3: Solve. What math do you need to do? You need to figure out the number of people that can sit at the table, based on all of the amounts that you have. 2 long sides, 10 people each: $10 \times 2 = 20$ 2 ends, 4 people each: $4 \times 2 = 8$ Add the amounts: $20 + 8 = 28$ people can sit at the table.
Step 4: Check. See if your answer makes sense. When you compare the amount that can sit at the table, 28, to the amount of people that Jeff wants to invite, 40, you can see that it is not reasonable for him to invite 40 guests. If Jeff only has seats for 28, how many friends should he invite? (Remember, Jeff needs a seat too!)

Use the steps above to solve the following problem.

Brittany was given 3 movies to watch in her free time. Each movie is 100 minutes long. Brittany has 70 minutes to relax before she goes to work every day, Monday through Friday. Is it reasonable for her to expect to watch all three movies, starting Monday and ending on Friday?

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7–2

Name _____ Date _____

Reteach *(continued)*

4MR3.1, 4NS3.0

Problem–Solving Skill: Reasonable Answers

Step 1: Understand. What facts do you know?

_____

_____

_____

Step 2: Plan. What you need to know?

_____

_____

Step 3: Solve. What math do you need to do?

_____

_____

_____

Figure out the total minutes it will take to watch all three movies.

_____

Step 4: Check. See if your answer makes sense.

_____

_____

_____

Decide whether each answer is reasonable. Explain your reasoning.

1. Sandy owns her own pizza restaurant. Her profit is about $2,000 a week. She needs to put aside $400 a week for taxes. Is it reasonable for her to spend $1,900 a week? _____

2. Sandy works 5 days a week. Her total number of hours each week is 50. Is it reasonable to say that Sandy works 7 hours a day?

_____

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Name _____ Date _____

7–2

Skills Practice

4MR3.1, 4NS3.0

Problem–Solving Skill: Reasonable Answers

Decide whether each answer is reasonable. Explain your reasoning.

1. Jill is in charge of the school fair that will go on for a week. There will be 10 different volunteers helping each day. Is 70 a reasonable estimate of the number of people who are expected to volunteer? _____

2. Jill will have to walk home from the fair each day for the week. The fair is 1 mile from her home. Is it reasonable to say that she will walk more than 10 miles before the week is over? _____

3. Jill expects that the sale of donated soda will bring in about $50 a day for the week. Is it reasonable for her to expect at least $500 from soda sales by the end of the week? _____

4. Jill was able to collect donations of about $60 a month for the 10 months that she was planning the fair. She saved all of the money. In addition, she was given $350 that had been put aside from the previous fair. She needs $1,000 to rent a ferris wheel. Is it reasonable to say that she can pay for the ferris wheel rental in full? _____

Types of Prizes	Number Collected
stuffed animals	98
plastic models	54
yo-yos	96
stopwatches	49

5. The table above shows the numbers of different prizes Jill collected for the fair. Is it reasonable for her to say that she has close to 300 prizes to give to those who win games?

_____

6. Jill has spent a total of 6,000 minutes organizing the fair. Is it reasonable for her to claim that she organized the fair in under 10 hours? _____

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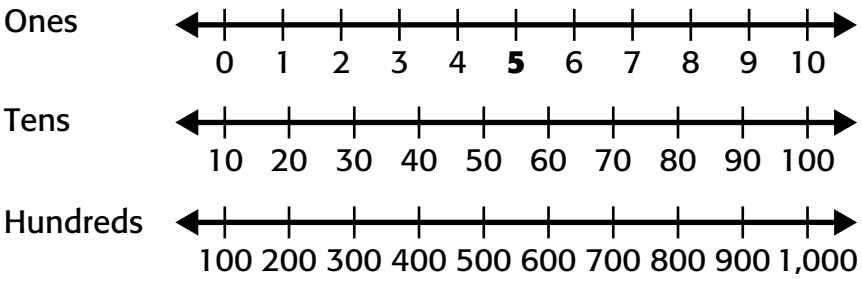
Name _____ Date _____

Reteach

4NS3.0, 4NS1.3

Use Rounding to Estimate Products

To estimate products, round numbers. Then use basic facts and multiply. Look at the number lines below.



Remember to round the greater factor to its greatest place.

When a number is halfway between two numbers, round up.

	Round the greater factor to its greatest place.	Use basic facts and multiply.
1. 59 × 5	_____	_____
2. 579 × 4	_____	_____
3. 788 × 3	_____	_____
4. 6,222 × 6	_____	_____
5. 8,951 × 4	_____	_____
6. 42 × 7	_____	_____
7. 6,450 × 8	_____	_____
8. 683 × 4	_____	_____
9. 7,395 × 3	_____	_____

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Name _____ Date _____

7–3

Skills Practice

4NS3.0, 4NS1.3

Use Rounding to Estimate Products

Estimate each product.

1. $5 \times 21 =$ _____

2. $3 \times 39 =$ _____

3. $7 \times \$46 =$ _____

4. $85 \times 6 =$ _____

5. $17 \times 9 =$ _____

6. $81 \times 3 =$ _____

7. $2 \times \$298 =$ _____

8. $4 \times 305 =$ _____

9. $478 \times 6 =$ _____

10. $5 \times 784 =$ _____

11. $612 \times 9 =$ _____

12. $6 \times 556 =$ _____

13. $2 \times 1{,}987 =$ _____

14. $3 \times \$2{,}126 =$ _____

15. $7 \times 1{,}905 =$ _____

16. $8 \times 3{,}495 =$ _____

17. $4{,}723 \times 4 =$ _____

18. $5 \times \$7{,}118 =$ _____

19. $41 \times 6 =$ _____

20. $28 \times 7 =$ _____

21. $96 \times 2 =$ _____

22. $17 \times 8 =$ _____

23. $31 \times 9 =$ _____

24. $255 \times 4 =$ _____

25. $488 \times 3 =$ _____

26. $563 \times 5 =$ _____

27. $2{,}307 \times 5 =$ _____

28. $7{,}596 \times 6 =$ _____

Solve.

29. The ambulance workers order 6 first aid kits. Each kit costs $39. About how much does it cost for 6 kits?

_____

30. An ambulance travels about 386 miles a day. About how many miles does it travel in a week?

_____

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Name _____ Date _____

7–4 Reteach

4NS3.0, 4MR2.1

Multiply Two-Digit Numbers

Find 13 × 3.
First, think in terms of tens and ones. 13 has 1 ten and 3 ones.
Second, set up the problem with the greater number on top.

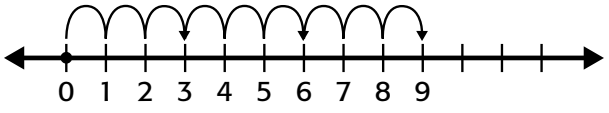
$$\begin{array}{r} 13 \\ \times 3 \\ \hline \end{array}$$

Solve the problem.

Step 1
Multiply the ones.

$$\begin{array}{r} 13 \\ \times 3 \\ \hline \mathbf{9} \end{array}$$

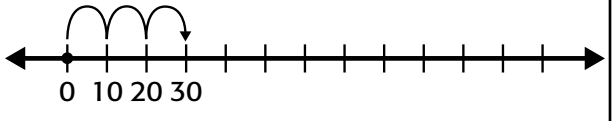
$3 \times 3 = \mathbf{9}$



Step 2
Multiply the tens.

$$\begin{array}{r} 13 \\ \times 3 \\ \hline \mathbf{39} \end{array}$$

$10 \times 3 = \mathbf{30}$



The tens (**30**) added to the ones (**9**) = **39**

Find 13 × 5.
First, think in terms of tens and ones. 13 has 1 ten and 3 ones.
Second, set up the problem with the greater number on top.

$$\begin{array}{r} 13 \\ \times 5 \\ \hline \end{array}$$

Solve the problem.

Step 1
Multiply the ones.

$$\begin{array}{r} 13 \\ \times 5 \\ \hline \mathbf{5} \end{array}$$

$3 \times 5 = \mathbf{15}$

This time the product of the ones is larger. You need to regroup. You have 1 ten and 5 ones. **You need to add that ten to the other tens.**

Step 2
Multiply the tens. Add the new ten.

$$\begin{array}{r} {\scriptstyle 1} \\ 13 \\ \times 5 \\ \hline \mathbf{65} \end{array}$$

$10 \times 5 = \mathbf{50} + \mathbf{10}$

The tens (**50** + **10**) added to the ones (**5**) = **65**

Multiply. Check for reasonableness.

1. 26 × 5 = _____ **2.** 22 × 7 = _____ **3.** 45 × 3 = _____

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7–4

Name _____ Date _____

Skills Practice

4NS3.0, 4MR2.1

Multiply Two-Digit Numbers

Multiply.

1. $21 \times 7 =$ _____

2. $38 \times 5 =$ _____

3. $54 \times 2 =$ _____

4. $49 \times 6 =$ _____

5. $17 \times 4 =$ _____

6. $25 \times 9 =$ _____

7. $53 \times 4 =$ _____

8. $28 \times 7 =$ _____

9. $61 \times 8 =$ _____

10. $39 \times 2 =$ _____

11. $62 \times 2 =$ _____

12. $38 \times 4 =$ _____

13. $91 \times 3 =$ _____

14. $46 \times 5 =$ _____

15. $78 \times 6 =$ _____

16. $98 \times 5 =$ _____

17. $76 \times 6 =$ _____

18. $24 \times 9 =$ _____

19. $56 \times 7 =$ _____

20. $48 \times 8 =$ _____

21. $66 \times 6 =$ _____

22. $77 \times 7 =$ _____

23. $94 \times 3 =$ _____

24. $59 \times 4 =$ _____

25. $44 \times 9 =$ _____

26. $24 \times 7 =$ _____

27. $19 \times 8 =$ _____

28. $67 \times 5 =$ _____

29. $84 \times 4 =$ _____

30. $91 \times 2 =$ _____

31. Look back over this page and circle every product greater than 300.

_____

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Name _____ Date _____

7–5

Reteach

4MR1.0, 4NS3.0

Problem-Solving Investigation

Choose the Best Strategy

Here are five problem-solving strategies and tips on how to use them.

Strategy	How to Use It
Use the four-step plan	Understand the facts. Plan your strategy. Solve the problem using the strategy. Check your work.
Draw a picture	Create a picture from the words in the problem to help you find the answer.
Look for a pattern	Spot whether there is something in the problem that repeats or looks the same.
Make a table	Organize data by making a table with columns for each category and rows for each number. Fill in the numbers to solve the problem.
Work backward	Start with the information given in the problem. Then use subtraction to find the answer to the problem.

Use any strategy shown below to solve. Tell what strategy you used.

- Use the four-step plan
- Draw a picture
- Look for a pattern
- Make a table
- Work backward

1. Bob wants to treat his 3 friends to rides at an amusement park. All-day passes cost $10. What will Bob have to pay for himself and his friends to go on the rides all day?

_____

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7–5

Name _____ Date _____

Reteach *(continued)*

4MR1.0, 4NS3.0

Problem-Solving Investigation

2. Russ is setting up his science project about the seashore at the fair. He has several rocks at the edge of the water, on the right side of the display. He has sand on the left side. Five starfish are on the right side of the rocks, touching the water. Are the starfish next to the sand?

_____

_____

_____

3. Fill in the missing number. 3, 6, 12, 24, _____, 96, 192

_____

4. There are 5 marbles in each bag. How many marbles do you have if you are given 10 bags of red marbles, 12 bags of yellow marbles, and 8 bags of blue marbles?

_____

5. Mary now has 5 pairs of sneakers. Her friend gave her 1 white pair yesterday. Her mom bought her new pink ones this morning. How many pairs did she have originally?

_____

6. Hank is planting pepper plants. In the first row, he plants 1 pepper. In the second row, he plants 2. In the third row, he plants 4. In the fourth row he plants 8. How many peppers will he plant in the *sixth* row?

_____

7. Now, Jay has a collection of 20 baseball hats. He just got a new one on a school trip. Last week, his father's friend gave him 6 hats. How many hats did he have originally?

_____

8. Jerry was late to school all week. On Monday, Tuesday, and Wednesday; Jerry was 30 minutes late. On Thursday and Friday he was 50 minutes late. The principal told him that he would have to stay after school and make up all of the time before the end of the year. How many minutes will Jerry have to stay after school?

_____

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Name _____ Date _____

Skills Practice

4MR1.0, 4NS3.0

Problem-Solving Investigation

Problem-Solving Strategies

- Draw a picture
- Look for a pattern
- Make a table
- Work backward

Use any strategy shown above to solve. Tell what strategy you used.

1. Fred is buying soda and snacks for a school event. He has to walk to the store and can only carry a limited amount at one time. He walked to the store 4 times. The first time he brought back 10 items, the second time 32, the third time 12, and the last time 15. How many items did he purchase?

_____

2. Joe is building a storage shed. He needs 200 nails for each one of the 4 sides, 500 nails for the roof, 100 nails for the door, and 200 nails for the steps. How many nails will he need in all?

_____

3. Andy is creating a design using colored shapes. He is starting with a triangle and ending with another triangle. In between the triangles, he has a circle to the left of a square. What does the design look like?

_____

_____

4. Gary rakes leaves. The first day, he fills 6 bags. The second day, he fills 8 bags. The third day, he fills 10 bags of leaves. If this pattern continues, how many bags will he fill on the fourth day?

_____

5. Sherri now has 25 pairs of earrings. Last week she was given 2 pairs for her birthday. Just yesterday, her older sister gave her 2 sets of earrings. How many sets of earrings did she have originally?

_____

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7–6

Name _____ Date _____

Reteach

4NS3.0, 4MR2.1

Multiply Multi–Digit Numbers

Multiply by following steps.

Find 22 × 6.

Step 1

Think in terms of tens and ones.
22 is 2 tens and 2 ones.

Tens	Ones
2	2

Step 2

Multiply the ones.

Tens	Ones
2	2
	6

$$\begin{array}{r} {\scriptstyle 1} \\ 22 \\ \times\ \ 6 \\ \hline \end{array} \qquad \begin{array}{r} 6 \\ \times\ 2 \\ \hline 12 \end{array}$$

Regroup 12 ones as 1 ten + 2 ones. Be sure to put the 1 in the tens column above the two.

Step 3

Multiply the tens.

Tens	Ones
2	2
	6

$$\begin{array}{r} {\scriptstyle 1} \\ 22 \\ \times\ \ 6 \\ \hline 132 \end{array}$$

6 × 2 tens = 12 tens. Add the regrouped ten.
12 tens + 1 ten = 13 tens.
Regroup 13 tens as 1 hundred and 3 tens.

Multiply.

1.

Tens	Ones
3	1
	↑
	7

_____

2.

Tens	Ones
3	5
	↑
	6

_____

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Name _____ Date _____

7–6

Skills Practice

4NS3.0, 4MR2.1

Multiply Multi–Digit Numbers

Multiply. Check for reasonableness.

1. 114 × 6 = _____

2. 261 × 4 = _____

3. 628 × 8 = _____

4. 739 × 5 = _____

5. 295 × 3 = _____

6. 375 × 5 = _____

7. 648 × 7 = _____

8. 1,525 × 6 = _____

9. 1,313 × 9 = _____

10. 4,512 × 5 = _____

11. 6,421 × 3 = _____

12. $1,225 × 9 = _____

ALGEBRA Find the value of each expression if $t = 7$.

13. t × 385 = _____

14. t × 7,441 = _____

15. t × 1,123 = _____

Compare. Use >, <, or =.

16. 396 × 4 _____ 5 × 423

17. 4 × 712 _____ 3 × 412

18. 3 × 656 _____ 7 × 366

19. 6 × 523 _____ 2 × 379

20. 2 × 961 _____ 8 × 612

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Name _____ Date _____

7–7

Reteach

4NS3.0, 4MR2.1

Multiply Across Zeros

You can use the same steps to multiply numbers that contain zeros that you use to multiply any multidigit number.

Find 305 × 4.

Step 1	**Step 2**
Think in terms of hundreds, tens, and ones. 305 is 3 hundreds + 0 tens and 4 ones.	Multiply the **ones.** 2 305 × 4 4 × 5 = 20 Regroup 20 ones as 2 tens + 0 ones. Be sure to put the 2 in the tens column above the 0. 0
Step 3	**Step 4**
Multiply the **tens.** 2 305 × 4 4 × 0 tens = 0 tens 20 Add the regrouped 2 tens. 0 tens + 2 tens = 2 tens	Multiply the **hundreds.** 2 305 × 4 4 × 3 hundreds = 1 thousand + 2 hundreds. 0 ones + 2 tens + 1220 2 hundreds + 1 thousand = 1220

Multiply.

1. 402 × 8 = _____

2. 7,009 × 3 = _____

3. 5 × 301 = _____

4. 6 × 9,020 = _____

5. 2 × 1,099 = _____

6. 7 × 8,107 = _____

7. 806 × 9 = _____

8. 5,007 × 4 = _____

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7–7

Skills Practice

4NS3.0, 4MR2.1

Multiply Across Zeros

Multiply.

1. 709 × 6 = _____

2. 450 × 3 = _____

3. 805 × 5 _____

4. 6,058 × 8 = _____

5. 5,608 × 4 = _____

6. 5,079 × 8 = _____

7. 1,047 × 7 = _____

8. 2,009 × 2 = _____

9. 4,010 × 3 = _____

10. 7,028 × 4 = _____

11. 5,001 × 9 = _____

12. 7,084 × 9 = _____

13. 4,807 × 7 = _____

14. 3,009 × 4 = _____

15. 9,012 × 6 = _____

16. 7,040 × 8 = _____

17. 1,027 × 5 = _____

18. 5,405 × 5 = _____

19. 3,004 × 3 = _____

20. 4,303 × 2 = _____

21. 1,009 × 3 = _____

22. 9,300 × 1 = _____

23. 9,099 × 9 = _____

Solve.

24. Tamara has 5 tall trees in her back yard. Each tree is 108 feet tall.

How tall are all the trees put together?_____

25. Look back over the page and circle every product that has a 3 in the tens place. Draw a box around every product that has

a 2 in the thousands place.

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Reteach

4NS3.3, 4NS3.2

Multiply by Tens

Find 355 × 40.

Step 1

Think in terms of hundreds, tens, and ones. 355 = 3 hundreds + 5 tens + 5 ones.

355
× 40

	Tens	Ones
	5	5

Step 2

Multiply the ones.

355
↑
× 40 0 × (any number) 355 = 0
0

Step 3

Multiply the tens × the ones.

2
355
↑
× 40 4 × 5 ones = 20 tens
00 Add the regrouped 2 tens.

Step 4

Multiply the tens × the tens.

22
355
↑
× 40 4 × 5 tens = 20 tens + 2 tens
200 Add the regrouped 200.

Step 5

Multiply the tens × the hundreds.

22
355
↖
× 40 4 × 3 hundreds = 120 hundreds + 2 hundreds
14,200

Multiply.

1. 44 × 20 = _____

2. 658 × 30 = _____

3. 57 × 10 = _____

4. 369 × 50 = _____

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8–1

Name _____ Date _____

Skills Practice

4NS3.3, 4NS3.2

Multiply by Tens

Multiply.

1. $12 \times 30 =$ _____

2. $21 \times 40 =$ _____

3. $14 \times 60 =$ _____

4. $31 \times 70 =$ _____

5. $25 \times 50 =$ _____

6. $24 \times 40 =$ _____

7. $61 \times 30 =$ _____

8. $48 \times 20 =$ _____

9. $19 \times 30 =$ _____

10. $65 \times 40 =$ _____

11. $48 \times 40 =$ _____

12. $14 \times 50 =$ _____

13. $49 \times 70 =$ _____

14. $42 \times 90 =$ _____

15. $80 \times 70 =$ _____

16. $26 \times 40 =$ _____

17. $17 \times 80 =$ _____

18. $135 \times 50 =$ _____

19. $207 \times 60 =$ _____

20. $399 \times 50 =$ _____

21. $756 \times 30 =$ _____

22. $375 \times 20 =$ _____

23. $409 \times 40 =$ _____

24. $490 \times 70 =$ _____

25. $967 \times 10 =$ _____

26. $975 \times 80 =$ _____

27. $549 \times 50 =$ _____

28. $105 \times 30 =$ _____

Solve.

29. Classroom chairs cost $39. How much will it cost to buy 30 chairs?

_____

30. A computer costs $986. How much will it cost to buy 20 computers?

_____

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Reteach

4NS3.3, 4NS1.3

Estimate Products

You can round to estimate products. Round each factor to its greatest place. Then multiply using patterns with zeros.

Estimate 42×59.

$42 \rightarrow$	40	1 zero
$\times\ 59 \rightarrow$	$\times$ 60	$\times$ 1 zero
	2,400	2 zeros

Estimate 74×229.

$229 \rightarrow$	200	2 zeros
$\times\ 74 \rightarrow$	$\times$ 70	$\times$ 1 zero
	14,000	3 zeros

Estimate each product by rounding.

1. $54 \rightarrow$
$\times\ 19 \rightarrow$ _____

2. $\$29 \rightarrow$
$\times\ 32 \rightarrow$ _____

3. $788 \rightarrow$
$\times\ 51 \rightarrow$ _____

Estimate each product.

4. 37×49 _____

5. 23×51 _____

6. 69×19 _____

7. $26 \times \$72$ _____

8. 19×315 _____

9. 85×263 _____

10. 72×803 _____

11. 48×156 _____

12. 92×228 _____

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8–2

Name _____ Date _____

Skills Practice

4NS3.3, 4NS1.3

Estimate Products

Estimate each product.

1. 49 × 59 _____

2. 85 × 211 _____

3. 55 × 65 _____

4. 71 × 218 _____

5. 41 × 52 _____

6. 19 × 602 _____

7. 18 × 29 _____

8. 29 × 907 _____

9. 98 × 402 _____

10. 82 × 310 _____

11. 71 × 874 _____

12. 37 × 196 _____

13. 61 × $216 _____

14. 42 × 284 _____

15. 81 × 350 _____

16. 480 × 16 _____

17. 42 × 605 _____

18. 230 × 21 _____

19. 23 × 999 _____

20. 890 × 36 _____

Solve by estimating each product.

21. The price of a bus ticket is $58. About how much will tickets cost for a group of 62 passengers? _____

22. An airline ticket costs $375. About how much will tickets cost for a group of 25 people? _____

23. Michael averages 12 points in each football game. About how many points will he score in 12 games? _____

24. Rachel creates 14 paintings a month. About how many paintings will she create in 2 years? _____

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Name _____ Date _____

Reteach

4MR1.0, 4NS3.0

Problem-Solving Strategy

Yolan has 3 bills equaling $20. What combination of $1, $5, $10, $20, or $50 bills does he have?

Understand	**Be sure you understand the problem.** What do you know? • Yolan has 3 bills. • The value of those bills is $20. What do you need to find? • You need to find what bills Yolan has.
Plan	**Make a plan.** You can act out the problem using play money.
Solve	Use play money to act out different combinations of $20. Cut out pieces of paper to represent different amounts of money. Try out different possibilities with the bills. He could have two $5 bills and one $10 bill.
Check	**Is the solution reasonable?** Reread the problem. Check your answer.

Solve. Use the *act it out* strategy.

1. Rod has 20 coins having the value of $6. What coins does he have?

_____

2. List 3 combinations to create a value of 64 cents.

_____

_____

3. Angie is 8 years old. She is one-fifth her father's age. How old is her father?

_____

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Name _____ Date _____

Reteach *(continued)*

4MR1.0, 4NS3.0

Problem-Solving Strategy

4. You decide to start a business making T-shirts with Joe, Frank, and Eddie. In one day Joe created 6 more than Frank. Frank created 4 less than Eddie. On that day, the total number of T-shirts the boys created was 22. How many shirts did each boy create?

_____

5. The boys have $100 to spend. They have a total of four bills. They are either $5, $10, $20, or $50 bills. What combination of bills do they have?

_____

6. There are 10 people interested in buying shirts. All 10 people unfold and inspect the 22 shirts. After each person unfolds a shirt, Frank folded it again. How many times did Frank refold shirts?

_____

7. After selling shirts, the boys had $500 in cash. They had a total of 19 bills. What combination of bills do they have?

_____

8. Eddie figured out that he could cut a large square of fabric into 4 small squares, and each small square was enough for 1 T-shirt. In the end, the boys ruined 2 shirts and had 22 good ones. How many large squares of fabric did they start with?

_____

9. Leah is 13 years older than Jillian. Jillian is 2 years younger than Steve. If Steve is 11, how old is Leah?

_____

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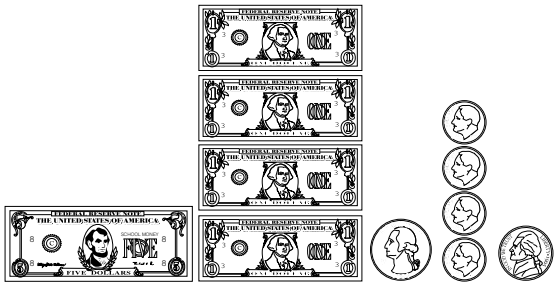
Name _____ Date _____

8–3

Skills Practice

4MR1.0, 4NS3.0

Problem-Solving Strategy



Solve. Use the *act it out* strategy.

1. Ann is 50. Ann is twice the age of her daughter, Cindy. Cindy's daughter is 20 years younger than her mother. How old is Cindy's daughter?

_____

2. Jane is 64 years old and 4 years older than 3 times Linda's age. How old is Linda?

_____

3. Jerry has 12 bills equaling $100. ($5, $10, $20, $50) What combination of bills does he have?

_____

4. Fred has 34 coins equaling $3. What combination of coins does he have?

_____

5. The Gomez family goes to a symphony concert. They buy 1 adult ticket at $15.75 and 3 youth tickets at $9.98. How much does the Gomez family spend for tickets?

_____

6. There are 30 students in the lunch line. On the shelf there are an equal number of 5 different kinds of drinks. If there are 30 drinks on the shelf, how many people will have the same kind of drink?

_____

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Name _____ Date _____

Reteach

4NS3.2, 4NS3.3

Multiply Two-Digit Numbers

Find 36 × 26.
Estimate: 40 × 30 = 1,200

Step 1 Multiply the ones. Regroup if necessary. Cross out the amount you regroup when you add it.

	3		
	3	6	
×	2	6	
2	1	6	

Step 2 Multiply the tens. Regroup if necessary. Cross out the amount you regroup when you add it. Remember, a zero is in the ones place when you multiply the tens.

1	~~3~~							
	3	6						
×	2	6						
2	1	6		6	×	3	6	
7	**2**	**0**		**20**	×	**3**	**6**	

Step 3 Add.

1	~~3~~							
	3	6						
×	2	6						
2	1	6		6	×	3	6	
7	**2**	**0**		**20**	×	**3**	**6**	
9	3	6						

Multiply.

1. 14 × 22 _____ **2.** 30 × 13 _____

3. 42 × 17 _____ **4.** 30 × 24 _____

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8–4

Name _____ Date _____

Skills Practice

4NS3.2, 4NS3.3

Multiply Two-Digit Numbers

Multiply.

1. 36 × 12

2. 45 × 35

3. 31 × 25

4. 27 × 41

5. 48 × 20

6. 12 × 46

7. 38 × 14

8. 38 × 27

9. 36 × 36

10. 23 × 22

11. 32 × 15

12. 28 × 44

13. 49 × 13

14. 45 × 25

15. 16 × 40

16. 47 × 34

17. 14 × 15

18. 17 × 17

19. 46 × 14

20. 26 × 34

21. 37 × 26

22. 17 × 25

23. 32 × 18

24. 19 × 27

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Name _____ Date _____

Reteach

4NS3.2, 4NS3.3

Multiply Three-Digit Numbers by Two-Digit Numbers

Find 411 × 12. Estimate: 400 × 10 = 4,000

Step 1 Multiply the ones. 411 × 2

$$\begin{array}{r} 411 \\ \times 12 \\ \hline 822 \end{array}$$

Step 2 Multiply the tens. 411 × 10

Remember, a zero is in the ones place when you multiply the tens.

$$\begin{array}{r} 411 \\ \times 12 \\ \hline 822 \\ \mathbf{4110} \end{array}$$

Step 3 Add the products. 822 + 4110

$$\begin{array}{r} 411 \\ \times 12 \\ \hline 822 \\ 4110 \\ \hline \mathbf{4,932} \end{array}$$

Solve.

1. 419 × 24 _____

2. 553 × 36 _____

3. 245 × 26 _____

4. 339 × 74 _____

5. 153 × 75 _____

6. 414 × 48 _____

7. 463 × 22 _____

8. 202 × 23 _____

9. 218 × 90 _____

10. 186 × 80 _____

11. 350 × 61 _____

12. 727 × 31 _____

13. 247 × 35 _____

14. 643 × 57 _____

15. 668 × 44 _____

16. 915 × 29 _____

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Name _____ Date _____

8–5

Skills Practice

4NS3.2, 4NS3.3

Multiply Three-Digit Numbers by Two-Digit Numbers

Multiply.

1. 869 × 59 _____

2. 357 × 16 _____

3. 359 × 10 _____

4. 981 × 53 _____

5. 456 × 38 _____

6. 523 × 26 _____

7. 309 × 19 _____

8. 500 × 20 _____

9. 296 × 33 _____

10. 198 × 41 _____

11. 302 × 11 _____

12. 517 × 68 _____

13. 775 × 19 _____

14. 120 × 42 _____

15. 343 × 59 _____

16. 118 × 13 _____

17. 296 × 21 _____

18. 178 × 12 _____

19. 373 × 14 _____

20. 385 × 15 _____

Solve.

21. Ali's mom said for every 20 hours Ali worked, she would earn $150. After Ali worked 40 hours, how much did she earn? _____

22. Patti's heart beats 125 times in a minute. How many times does her heart beat in an hour? _____

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Reteach

4MR1.0, 4NS3.0

Problem-Solving Investigation

Mandy went shopping. Her mother gave her a bank card to use and told her that she could not spend more than $200. Mandy spent $56 in the first store, $87 in the next, then $95, and finally $103. When she got home, Mandy told her mother that she wasn't sure but thought she stayed under $200. Does this make mathematical sense?

Understand	**Be sure you understand the problem.** What do you know? • Mandy has a limit of $200. • She spent $56, $87, $95, and $103. What do you need to find? • You need to find if Mandy stayed within her limit.
Plan	**Make a plan.** You can use the make a table strategy to find how much Mandy spent. You can estimate the amount Mandy spent at each store and place the amounts in the table.
Solve	$56 + $87 + $95 + $103 = $341 $341 − $200 = $141 So, Mandy spent $141 over her $200 limit.
Check	**Is the solution reasonable?** Reread the problem. Check your answer.

Store #1	Store #2	Store #3	Store #4
$56	$87	$95	$103

Solve and tell what strategies you used.

1. Sandy spent $459 on gifts. She spent about $50 on each person. How many people did she buy gifts for?

_____

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Name _____ Date _____

Reteach *(continued)*

4MR1.0, 4NS3.0

Problem-Solving Investigation

2. Caitlin, Erin, and Jeannie are on the track team. Over the season, Caitlin won 2 times and came in second 2 times. Erin won 1 time and came in second 5 times. Jeannie did not win at all, but came in second 8 times. The runners earn 10 points for winning and 5 points for coming in second. Who got the most points this season?

_____

_____

3. Kyle is 4,000 days old. About how many years old is he?

_____

4. Hao solved the following problem. $42 \times 37 = 1{,}554$
Explain how Hao could check his answer.

_____

_____

_____

5. At a store, jeans are on sale for $32 and sweaters are on sale for $28. How much will it cost Mrs. Jackson to buy 3 pairs of jeans and 4 sweaters for her children?

_____

6. Carmen bought 5 dozen muffins for her class. Each student got 2 muffins. Estimate how many people are in Carmen's class and explain your answer.

_____

7. Every teacher at Mountain Elementary is provided 800 sheets of paper. How many sheets of paper do the 50 teachers have altogether?

_____

8. Isra is thinking of two numbers that have a sum of 7 and a product of 10. What are the two numbers? _____

_____

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Name _____ Date _____

Skills Practice

4MR1.0, 4NS3.0

Problem-Solving Investigation

Use any strategy to solve. Tell what strategy you used.

1. Beth bought 4 boxes of beads. Each box held 305 beads. How many beads did she buy in all? _____ beads
Tell which method you used.

_____

2. Each box of beads cost $2. Beth bought 6 boxes. How much did she spend on all of the beads? $ _____
Tell which method you used.

_____

3. Brian and Gaby are decorating boxes with beads for the craft fair. Each box uses 705 beads. How many beads do they need to decorate 4 boxes? _____ beads
Tell which method you used.

_____

4. Brian and Gaby sell each decorated box for $15. If they sell 3 boxes, how much money will they make? $ _____
Tell which method you used.

_____

5. For the 10-kilometer race, there were 698 runners. Each runner was given 3 passes for friends and family to be at the finish line. How many passes were given out? _____ passes
Tell which method you used.

_____

6. Runners paid $6 to enter the race. How much money was collected from 437 runners? $ _____
Tell which method you used.

_____

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Name _____ Date _____

Reteach

4NS3.3, 4MR2.1

Multiply Greater Numbers

Find 4,263 × 43.
Estimate: 4,000 × 40 = 160,000

Step 1 Multiply the ones. Regroup if necessary. Cross out the amount you regroup when you add it.

```
  1
 4,263
 × 43
 12,789      4,263 × 3
```

Step 2 Multiply the tens. Remember, a zero is in the ones place when you multiply the tens.

```
  1 2 1
    1
  4,263
  × 43
 12,789      4,263 × 3
170,520      4,263 × 40
```

Step 3 Add.

```
    1 2 1
      1
    4,263
    × 43
   12,789      4,263 × 3
+ 170,520      4,263 × 40
  183,309
```

Multiply.

1. 1,435 × 45 _____

2. 6,901 × 38 _____

3. 7,468 × 31 _____

4. 5,297 × 12 _____

5. 5,852 × 52 _____

6. 8,448 × 24 _____

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8–7

Name _____ Date _____

Skills Practice

4NS3.3, 4MR2.1

Multiply Greater Numbers

Multiply.

1. 693 × 24 = _____

2. $601 × 33 = _____

3. 8,072 × 58 = _____

4. 907 × 25 = _____

5. 2,901 × 42 = _____

6. $3,888 × 64 = _____

7. 16 × 2,369 = _____

8. 39 × $1,288 = _____

9. 65 × 19,091 = _____

10. 78 × 12,967 = _____

ALGEBRA Complete the table.

11.

Input	12	15	18	21	24
Output	48	60	_____	_____	_____

Solve.

12. Maria and Natalie made 12 trips between New York City and Los Angeles. Each trip cost $598 per person. How much did the 12 trips cost? _____

13. A company buys 18 computers. Each computer costs $2,245. How much does the company spend on the 18 computers?

_____

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Name _____ Date _____

Reteach

4NS3.4

Division with Remainders

Interpret the Remainder

There are 26 people seated at tables. Each table seats 8 people. How many full tables are there? How many people are sitting at a table that is not full? How many tables are needed for all 26 people?

There are 3 different ways to interpret the remainder.

1. Use only the quotient. How many full tables will there be?	Divide to find the number of full tables. $26 \div 8 = \mathbf{3}$ R2 There will be 3 full tables.
2. The remainder is the answer. How many people will sit at a table that is not full?	Look at the remainder. $26 \div 8 = 3$ **R2** So, 2 people will sit at a table that is not full.
3. Add 1 to the quotient. How many tables will be needed for all 26 people?	Since there are 3 full tables and 1 table that is not full, there are 4 tables in all.

Choose the correct answer.

There are 94 people who volunteer to clean the park. They will form into groups of 4. How many groups of 4 can they make?

1. Which of the following statements is true?

A They will make 24 groups.
B Everyone can be in a group of 4.
C There are 98 volunteers.

Divide. Check each answer.

2. $17 \div 4 =$ _____ **3.** $43 \div 5 =$ _____ **4.** $9 \div 2 =$ _____

5. $27 \div 5 =$ _____ **6.** $57 \div 9 =$ _____ **7.** $21 \div 4 =$ _____

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9–1

Name _____ Date _____

Skills Practice

4NS3.4

Division with Remainders

Divide. Check each answer.

1. $8\overline{)91}$ _____

2. $3\overline{)54}$ _____

3. $9\overline{)16}$ _____

4. $5\overline{)86}$ _____

5. $7\overline{)12}$ _____

6. $7\overline{)21}$ _____

7. $3\overline{)24}$ _____

8. $4\overline{)36}$ _____

9. $7\overline{)43}$ _____

10. $5\overline{)26}$ _____

11. $6\overline{)89}$ _____

12. $4\overline{)17}$ _____

13. $3\overline{)94}$ _____

14. $4\overline{)21}$ _____

15. $23 \div 2 =$ _____

16. $35 \div 7 =$ _____

17. $27 \div 3 =$ _____

18. $19 \div 9 =$ _____

19. $24 \div 7 =$ _____

20. $38 \div 6 =$ _____

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Name _____ Date _____

9–2

Reteach

4NS3.0

Divide Multiples of 10, 100, and 1,000

You can use patterns or basic facts to help you divide multiples of 10, 100, and 1,000.

You need to find 1,800 ÷ 6.

Use a Multiplication Pattern	**Use a Basic Fact**
Think $6 \times ? = 1{,}800$ $6 \times 3 = 18 \rightarrow 18 \div 6 = 3$ $6 \times 30 = 180 \rightarrow 180 \div 6 = 30$ $6 \times 300 = 1{,}800 \rightarrow 1{,}800 \div 6 = 300$	Think. What is the basic fact? The basic fact for $1{,}800 \div 6$ is $18 \div 6$. $18 \div 6 = 3$ $180 \div 6 = 30$ $1{,}800 \div 6 = 300$

Complete each set of patterns.

1. $15 \div 3 =$ _____
$150 \div 3 =$ _____
$1{,}500 \div 3 =$ _____

2. $63 \div 9 =$ _____
$630 \div 9 =$ _____
$6{,}300 \div 9 =$ _____

3. $30 \div 5 =$ _____
$300 \div 5 =$ _____
$3{,}000 \div 5 =$ _____

4. $32 \div 8 =$ _____
$320 \div 8 =$ _____
$3{,}200 \div 8 =$ _____

Divide. Use patterns.

5. $800 \div 2 =$ _____

6. $4{,}200 \div 7 =$ _____

7. $270 \div 9 =$ _____

8. $600 \div 3 =$ _____

9. $150 \div 5 =$ _____

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Name _____ Date _____

9–2

Skills Practice

4NS3.0

Divide Multiples of 10, 100, and 1,000

Divide. Use Patterns.

1. 200 ÷ 5 = _____

2. 4,500 ÷ 9 = _____

3. 5,400 ÷ 9 = _____

4. $3,500 ÷ 7 = _____

5. $8,100 ÷ 9 = _____

6. 900 ÷ 3 = _____

7. 54 ÷ 9 = _____

8. 6,400 ÷ 8 = _____

9. 6,400 ÷ 8 = _____

10. 4,200 ÷ 6 = _____

Complete each set of patterns.

11. 18 ÷ 3 = _____
180 ÷ 3 = _____
1,800 ÷ 3 = _____

12. 63 ÷ 7 = _____
630 ÷ 7 = _____
6,300 ÷ 7 = _____

13. 30 ÷ 6 = _____
300 ÷ 6 = _____
3,000 ÷ 6 = _____

14. 42 ÷ 7 = _____
420 ÷ 7 = _____
4,200 ÷ 7 = _____

15. 25 ÷ 5 = _____
250 ÷ 5 = _____
2,500 ÷ 5 = _____

16. 21 ÷ 3 = _____
210 ÷ 3 = _____
2,100 ÷ 3 = _____

Problem Solving.

17. A store has 720 toy cars in packages. Each package has 9 toy cars. How many packages of toy cars does the store have?

_____

18. The Harris family went on a vacation. They traveled 630 miles in 7 days. How many miles did they travel each day?

_____

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Name _____ Date _____

Reteach

4MR1.1, 4NS3.0

Problem-Solving Strategy

Solve problems using the *guess and check* strategy.

Jenny fills a bottle with 8 inches of colored sand. She has 2 inches more of red sand than of blue sand. How many inches of each color does she use?

Step 1. Understand	**Be sure you understand the problem.** Read carefully. What do you know? • Jenny's bottle holds ___ inches of sand. • There are _____ of red sand than of blue sand What do you need to find? • You need to find how many _____ _____
Step 2. Plan	**Make a plan.** • Use the guess and check strategy. • List the information you know. • Use what you know to make a guess. • Guess how many inches of each color sand are needed to make a total of 8 inches. • Check your guess. • Revise the guess and try again if it is wrong. • Guess, check, and revise until you find the answer that makes sense.

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Name _____ Date _____

Reteach *(Continued)*

4MR1.1, 4NS3.0

Step 3. Solve	**Carry out your plan.** You know that the bottle holds _____ inches of sand. You know that Jenny has _____ more inches of _____ sand than of _____ sand. **Guess** Start with two numbers that have a sum of 8. Try 6 and 2. **Check** $6 + 2 = 8$ _____ inches of red sand, _____ inches of blue sand There are _____ more inches of red sand. Does that answer fit the problem? _____ **Revise** $5 + 3 = 8$ _____ inches of red sand, _____ inches of blue sand There are _____ more inches of red sand. Does that answer fit the problem? _____
Step 4. Check	**Is the solution reasonable?** Reread the problem. Does your answer make all of the statements true? _____

Practice

1. A group of friends share 30 stickers equally, with 3 stickers left over. There are more than 5 friends. How many friends are there? How many stickers does each friend get?

   _____

2. Erica invites 8 friends to her party. She wants each friend to have 3 balloons. She has 27 balloons. How many balloons will she have left over? _____

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Name _____ Date _____

Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Strategy

Solve. Use the *guess and check* strategy.

1. Teri puts 57 dolls in a display case. She puts the same number on each shelf and has 3 dolls left. The case has more than 7 shelves. How many shelves does the case have? How many dolls does each shelf hold? _____

2. A group of friends choose cards equally from a deck of 52 cards. There are more than 6 friends. After they have chosen, 4 cards are left. How many friends are there? How many cards does each friend have? _____

3. Jamal buys 59 stickers. Stickers come in packs of 5 or 8. How many packs of 5 stickers does Jamal buy? 8 stickers?

   _____

4. There are 36 students in an auditorium. There are twice as many girls as boys. How many girls are there? How many boys are there?

   _____

5. Chou makes a display. He puts 1 photo in the first row, 4 photos in the second row, 7 in the third row, and 10 in the fourth row. If the pattern continues, how many photos does Chou put in the fifth row? _____

6. Each of the 50 states in the United States has a state flag. Evelyn wants to make a drawing of each state flag. She has 3 more flags to draw. How many flags has Evelyn drawn? _____

7. Create a problem that can be solved by using the guess-and-check strategy. Share it with others. _____

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Name _____ Date _____

Reteach

4NS3.4

Estimate Quotients

Compatible numbers are numbers you can divide easily.
You can use compatible numbers to estimate quotients.

Estimate 3,463 ÷ 7.
3,**4**63 ÷ **7** Think: A basic fact that is close is 35 ÷ 7.
3,500 ÷ 7 = 500
So, 3,463 ÷ 7 is about 500.

Complete.

1. Estimate 1,785 ÷ 3.

Division fact: 18 ÷ 3 = ___

Estimate: 1,800 ÷ 3 = _____

2. Estimate 2,880 ÷ 3.

Division fact: 27 ÷ 3 = ___

Estimate: 2,700 ÷ 3 = _____

3. Estimate 5,726 ÷ 7.

Division fact: _____

Estimate: _____

4. Estimate 3,952 ÷ 8.

Division fact: _____

Estimate: _____

Estimate. Check your estimate.

5. 1,482 ÷ 3 _____

6. 6,512 ÷ 8 _____

7. 7,164 ÷ 8 _____

8. 2,207 ÷ 7 _____

9. 3,512 ÷ 5 _____

10. 2,587 ÷ 5 _____

11. 3,123 ÷ 6 _____

12. 4,132 ÷ 7 _____

13. 2,712 ÷ 3 _____

14. 1,789 ÷ 2 _____

15. 2,797 ÷ 4 _____

16. 6,432 ÷ 9 _____

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9–4

Skills Practice

4NS3.4

Estimate Quotients

Estimate. Check your estimate.

1. $2\overline{)43}$

2. $2\overline{)71}$

3. $6\overline{)521}$

4. $7\overline{)501}$

5. $2\overline{)131}$

6. $9\overline{)286}$

7. $8\overline{)650}$

8. $5\overline{)209}$

9. $6\overline{)3{,}124}$

10. $4\overline{)3{,}105}$

11. $8\overline{)5{,}896}$

12. $9\overline{)4{,}699}$

13. 65 ÷ 3 _____

14. 4,124 ÷ 6 _____

15. 98 ÷ 5 _____

16. 1,912 ÷ 9 _____

17. 22 ÷ 3 _____

18. 1,714 ÷ 2 _____

19. 381 ÷ 8 _____

20. 2,186 ÷ 4 _____

21. 555 ÷ 6 _____

22. 2,904 ÷ 7 _____

23. 640 ÷ 7 _____

24. 4,711 ÷ 8 _____

Solve.

25. Marta travels a total of 850 miles every month to San Francisco on business. If she goes 3 times a month, about how many miles is each round trip?

_____

26. Jeff goes on a 173-mile bike trip. It takes him 9 days from start to finish. About how many miles does he travel each day?

_____

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Name _____ Date _____

Reteach

4NS3.4, 4MR2.1

Two-Digit Quotients

Tens	Ones
5	3

53 ÷ 2 is 53 divided in 2 parts.

Step 1 **Set up the problem with the number being divided on the inside and the divisor on the outside.**

$2\overline{)53}$

Step 2 **Divide the tens and write the amount in the tens box. Then, subtract.**

$$\begin{array}{r} \mathbf{2} \\ 2\overline{)\mathbf{5}3} \\ \underline{-\mathbf{4}} \\ \mathbf{1} \end{array}$$

Divide the 5 (50) by 2.

Think: What times 2 is close to, but not more than 50? $2 \times 20 = 40$

Put the 2 tens in the quotient.

Multiply the divisor by the quotient.

Subtract.

Think: You have 1 ten left over.

Step 3 **Bring down, divide the ones, and write in the amount. Then, subtract.**

$$\begin{array}{r} \mathbf{2\,6} \\ 2\overline{)\mathbf{5}\,3} \\ \underline{-4} \\ \mathbf{1\,3} \\ \underline{-\mathbf{1\,2}} \\ \mathbf{1} \end{array}$$

Divide the 13 by 2.

Think: What times 2 is close to, but not more than 13? $2 \times 6 = 12$

Put the 6 ones in the quotient.

Multiply the divisor by the quotient.

Subtract.

Think: You have 1 one left over.

53 ÷ 2 = 26 R 1

Divide.

1. 41 ÷ 2 _____

2. 67 ÷ 3 _____

3. 54 ÷ 4 _____

4. 89 ÷ 5 _____

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Name _____ Date _____

9–5

Skills Practice

4NS3.4, 4MR2.1

Two-Digit Quotients

Divide.

1. $3\overline{)272}$ _____

2. $4\overline{)230}$ _____

3. $5\overline{)351}$ _____

4. $9\overline{)180}$ ____

5. $3\overline{)150}$ ____

6. $7\overline{)496}$ _____

7. $9\overline{)685}$ _____

8. $6\overline{)283}$ _____

9. $5\overline{)454}$ _____

10. $8\overline{)260}$ _____

11. $9\overline{)643}$ _____

12. $3\overline{)103}$ _____

13. $6\overline{)457}$ _____

14. $7\overline{)143}$ _____

15. $4\overline{)165}$ _____

16. 642 ÷ 7 _____

17. 250 ÷ 4 _____

18. 435 ÷ 8 _____

19. 187 ÷ 5 _____

20. 567 ÷ 8 _____

21. Janice and her 3 sisters earned $364 this summer doing yard work for a neighbor. They plan on splitting the money equally. How much will each girl get?

_____

22. A school was given 50 athletic balls to be split evenly between its sports teams. If there are 5 sports teams, how many balls will each team get?

_____

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Name _____ Date _____

9–6

Reteach

4MR1.0, 4NS3.0

Problem-Solving Investigation

Choose the best strategy.

Using each of the SIX PROBLEM-SOLVING STRATEGIES:

- Use a four-step plan
- Work backward
- Make a table
- Look for a pattern
- Guess and check
- Act it out

1. A four-step plan - The four steps are understand, plan, solve, and check.

If you are given several facts, list what you already know and what you need to find out. To find this out, think about what you have to do mathematically.

Practice

Jill wants to buy jeans that cost $50, a shirt that costs $20, and a belt that costs $10. She has $100. Does she have enough money?

_____

2. Work backward

If you are given facts about the present and asked for information about the past, you need to work backward. Again, you'll have to think about what you have to do mathematically.

Practice

Jill bought the jeans for $40 and a shirt on sale for $5. She has $55 left. How much money did she start with? _____

3. Make a table

If you are given a list of things and there are different numbers for each thing, make a chart. Use the categories that you are given to make the rows and columns on your chart.
Think about what you have to do mathematically to the numbers in the chart.

Practice

Jill bought jeans for $40 and a belt for $5. Carol bought jeans for $10 and 3 belts for $5 each. Who spent more money?

_____

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Name _____ Date _____

Reteach *(continued)*

4MR1.0, 4NS3.0

Problem Solving Investigation

4. A pattern

If you are given a row or list of numbers, colors, or objects, look for what repeats. Ask yourself what was done to the first thing in the list that was also done to the second and so on.

Practice

What is the next number in the pattern of 3, 12, 48, 192, _____?

5. Guess and check

Make a guess, then check to see if your guess is the solution to the problem. Keep guessing and checking until you find the solution.

Practice

What is the next number in the pattern of 5, 16, 49, 148, _____?

6. Act it out

If you are given information, and it would help to see what you are being told; act it out.

Practice

Fred has 3 bills that total $40. What bills does he have?

_____

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Name _____ Date _____

Skills Practice

4MR1.0, 4NS3.0

Problem-Solving Investigation

Use any strategy to solve.

1. Russ bought 8 tubes of different color paint. Then, he traded 3 of his tubes for 10 of his friend's smaller tubes. How many does he have now?

_____

2. Russ spent 45 minutes walking to a museum. The museum is 1 mile away from his home. He walked the first half mile in half the time that he walked the second half. How long did it take Russ to walk the second half of the mile?

_____

3. What is the next number in the pattern 2, 10, 50, 250, ____ ? What is the pattern?

_____

4. Rod bought the following items for the party: 3 cakes, 2 vegetable trays, 4 bowls of vegetable dip, and 3 boxes of crackers.

Cakes	-	$5
Vegetable Tray	-	$3
Vegetable Dip	-	$1
Crackers	-	$2

How much did he spend? _____

5. Jerry has 10 bills that equal $140. What are the bills?

_____

6. Each day, Alex, a Husky dog, eats 4 cups of dog food, 2 treats that he is given, and 1 treat that he steals from Lily, a small Bicheon. Each day, Lily eats 1 cup for every 4 that Alex eats and only 1 of the treats that she gets. How much does Lily eat in a week?

_____

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Name _____ Date _____

Reteach

4NS3.4, 4NS3.2

Three-Digit Quotients

$2\overline{)532}$

hundreds	tens	ones
5	3	2

Step 1 Divide the hundreds and write the amount in the hundreds box. Then, subtract.

2
$2\overline{)\mathbf{5}32}$ Divide the 5 (500) by 2.
$-\underline{\mathbf{4}}$
1 Put the 2 hundreds in the quotient. Multiply the divisor by the quotient. Subtract.

Think: What times 2 is close to, but not more than 500. $2 \times 200 = 400$

Think: You have 1 hundred left over.

Step 2 Bring down. Divide the tens and write in the amount. Then, subtract.

26
$2\overline{)532}$ Divide the 130 by 2.
$-\underline{4}$
13
$-\underline{\mathbf{12}}$ Put the 6 tens in the quotient.
1 Multiply the divisor by the quotient. Subtract.

Think: What times 2 is close to, but not more than 130. $2 \times 60 = 120$

Think: You have 1 ten left over.

Step 3 Bring down. Divide the tens and write in the amount. Then, subtract.

266
$2\overline{)532}$ Divide the 12 by 2.
$-\underline{4}$
13
$-\underline{12}$ Put the 6 ones in the quotient.
12 Multiply the divisor by the quotient.
$-\underline{\mathbf{12}}$ Subtract.

Think: What times 2 is close to, but not more than 12. $2 \times 6 = 12$

Think: You have no remainder.

$2\overline{)532} = 266$

Divide.

1. $2\overline{)856}$ _____ **2.** $3\overline{)562}$ _____

3. $5\overline{)767}$ _____ **4.** $6\overline{)821}$ _____

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9–7

Name _____ Date _____

Skills Practice

4NS3.4, 4NS3.2

Three-Digit Quotients

Divide.

1. $6\overline{)689}$ _____

2. $4\overline{)470}$ _____

3. $9\overline{)999}$ _____

4. $5\overline{)942}$ _____

5. $3\overline{)545}$ _____

6. $7\overline{)868}$ _____

7. $5\overline{)681}$ _____

8. $3\overline{)498}$ _____

9. $2\overline{)642}$ _____

10. $4\overline{)868}$ _____

11. $3\overline{)765}$ _____

12. $8\overline{)912}$ _____

13. $3\overline{)946}$ _____

14. $4\overline{)523}$ _____

15. 868 ÷ 5 _____

16. 874 ÷ 7 _____

17. 672 ÷ 6 _____

18. 347 ÷ 3 _____

19. 591 ÷ 4 _____

20. 671 ÷ 3 _____

21. Ben and his 2 friends are planning to make box cars. They have collected 369 pieces of scraps from the junk yard. If they divide the pieces, how many will each boy get?

_____

22. Over the last 6 days, the boys have worked for 930 minutes trying to assemble their junk pieces. They worked for the same amount of time each day, from the time school got out to dark. How many minutes did they work each day?

_____

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Name _____ Date _____

Reteach

4NS3.4, 4NS3.2

Quotients with Zeros

Find $3\overline{)629}$. Follow the steps below.

Step 1. **Divide the hundreds.**	**Step 2.** **Divide the tens.**	**Step 3.** **Divide the ones.**
Think: $3 \times 2 = 600$ The first digit is in the hundreds place. $\begin{array}{r} 2 \\ 3\overline{)629} \\ -6 \\ \hline 0 \end{array}$ Multiply: $3 \times 2 = 6$ Subtract: $6 - 6 = 0$ Compare: $0 < 6$	Bring down the tens. There are not enough tens to divide. Trade 2 tens for 20 ones. $\begin{array}{r} 20 \\ 3\overline{)629} \\ -6 \\ \hline 02 \end{array}$ There are not enough tens to divide. Write a 0 in the quotient. Compare: $0 < 4$	Bring down the ones. Divide the ones. $\begin{array}{r} 209\text{ R}2 \\ 3\overline{)629} \\ -6 \\ \hline 029 \\ -27 \\ \hline 2 \end{array}$ Multiply: $3 \times 9 = 27$ Subtract: $29 - 27 = 2$

Check your answer: $209 \times 3 = 627 \quad 627 + 2 = 629$

Divide.

1. $\begin{array}{r} 3\ 0\ \square\ \text{R}\ \square \\ 3\overline{)9\ 2\ 6} \\ -9 \\ \hline \square\ \square \\ -\ \square\ \square \\ \hline \square \end{array}$

2. $\begin{array}{r} 1\ \square\ \square \\ 6\overline{)6\ 4\ 2} \\ -6 \\ \hline \square\ \square \\ -\ \square\ \square \\ \hline \square \end{array}$

3. $\begin{array}{r} \square\ \square\ \text{R}\ \square \\ 7\overline{)1\ 4\ 3} \\ -1\ 4 \\ \hline \square \end{array}$

4. $4\overline{)\$816}$

5. $4\overline{)438}$

6. $3\overline{)316}$

7. $7\overline{)765}$

8. $2\overline{)615}$

9. $2\overline{)361}$

10. $3\overline{)628}$

11. $3\overline{)\$210}$

12. $912 \div 9 =$ _____

13. $452 \div 9 =$ _____

14. $662 \div 3 =$ _____

15. $965 \div 6 =$ _____

16. $905 \div 3 =$ _____

17. $734 \div 7 =$ _____

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9–8

Name _____ Date _____

Skills Practice

4NS3.4, 4NS3.2

Quotients with Zeros

Divide.

1. $3\overline{)620}$

2. $5\overline{)549}$

3. $5\overline{)544}$

4. $9\overline{)92}$

5. $8\overline{)812}$

6. $6\overline{)657}$

7. $6\overline{)\$630}$

8. $6\overline{)620}$

9. $2\overline{)617}$

10. $7\overline{)\$763}$

11. $3\overline{)211}$

12. $7\overline{)727}$

13. $823 \div 4 =$ _____

14. $920 \div 3 =$ _____

15. $885 \div 8 =$ _____

Solve.

16. Jenna earns $636 in 6 months by babysitting. If divided evenly, how much is that a month? _____

17. A family of 4 spends $824 when vacationing. If divided evenly, how much is that per person? _____

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Name _____ Date _____

Reteach

4NS3.4, 4NS3.2

Divide Greater Numbers

When you divide greater numbers, begin by deciding where to place the first digit in the quotient.

Divide 3,154 ÷ 6.

Think: You cannot divide 3 by 6. Divide 31 by 6. Write 5 in the quotient above the 1.

You can see the quotient will have 3 digits.

$$6\overline{)3{,}154} \quad 5\_\_$$

Divide.

1. ☐☐☐ R☐

3)1, 5 4 9

−1 5

−

−

2. ☐☐☐☐ R☐

4)7, 6 5 3

− 4

−

−

−

3. ☐☐☐☐ R☐

2)9, 5 6 3

−

−

−

−

4. $5\overline{)3{,}472}$

5. $4\overline{)\$2{,}624}$

6. $8\overline{)9{,}275}$

7. $2\overline{)5{,}117}$

8. $7\overline{)4{,}986}$

9. $3\overline{)1{,}373}$

10. $6\overline{)44{,}738}$

11. $9\overline{)9{,}818}$

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9–9

Name _____ Date _____

Skills Practice

4NS3.4, 4NS3.2

Divide Greater Numbers

Divide.

1. $5\overline{)65{,}840}$

2. $8\overline{)33{,}767}$

3. $2\overline{)14{,}147}$

4. $2\overline{)53{,}988}$

5. $3\overline{)6{,}083}$

6. $5\overline{)23{,}079}$

7. \$19,328 ÷ 4 _____

8. 1,841 ÷ 2 = _____

9. 54,620 ÷ 5 = _____

10. 37,986 ÷ 8 = _____

ALGEBRA Find each missing number.

11. \$26,480 ÷ n = \$5,296 _____

12. 7,240 ÷ v = 1,810 _____

13. 44,356 ÷ r = 11,089 _____

Solve.

14. The King School holds Junior Olympic games in its sports stadium for 3 days. Each day, every seat in the stadium is full. A total of 17,748 people come to the games. How many seats does the stadium have?

_____

15. The King School raises \$75,288 by selling Junior Olympic banners. Each banner costs \$6. How many banners does the school sell?

_____

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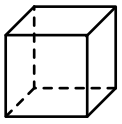
Name _____ Date _____

Reteach

4MG3.6

Solid Figures

Solid figures are 3-dimensional. This means they are not flat. For example, a square is flat, but a cube is a solid figure.



To describe the shape of a solid figure, you use:

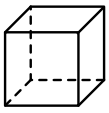
- **face**: a flat side
- **edge**: where 2 **faces** meet
- **vertex**: where 3 or more faces meet, like a corner

To describe this solid figure, you would say it is a cube. It has:

- 6 faces
- 12 edges
- 8 vertices

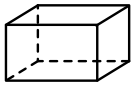
Key Concept **Solid Figures**

cube



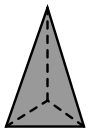
triangular prism

rectangular prism

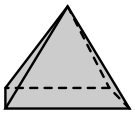


cone

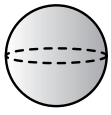
triangular pyramid



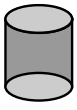
square pyramid



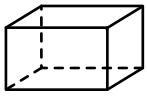
sphere



cylinder



Identify each figure. Then tell the number of faces, edges, and vertices.

1. 

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2.

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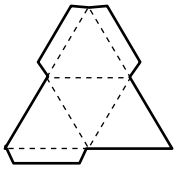
Identify the solid figure each net would make.

3. 

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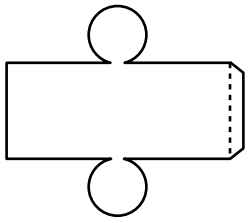
4. 

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10–1

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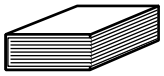
Skills Practice

4MG3.6

Solid Figures

Identify each figure. Then tell the number of faces, edges, and vertices.

1. 

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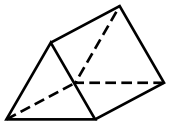
2. 

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3.

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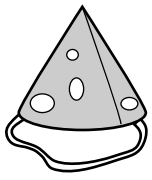
4. 

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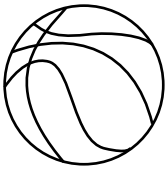
5. 

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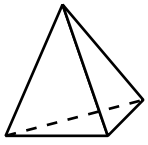
6. 

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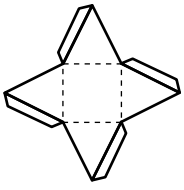
Identify the solid figure each net makes.

7. 

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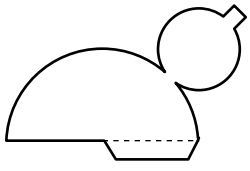
8. 

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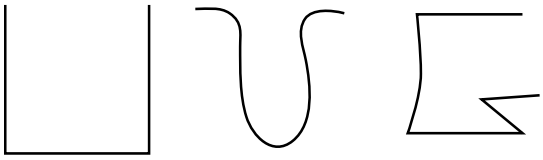
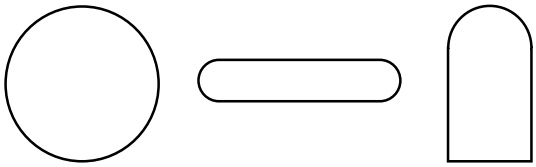
Name _____ Date _____

Reteach

4MG3.0

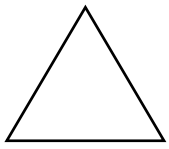
Plane Figures

A polygon is a closed 2-dimensional figure that has straight sides. These figures are not polygons.

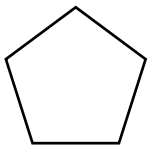
Open Figures	Closed Figures
	

These figures are polygons.

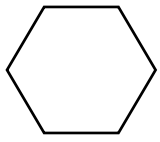
quadrilateral
4 straight sides



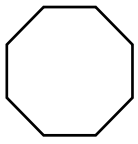
triangle
3 straight sides



pentagon
5 straight sides

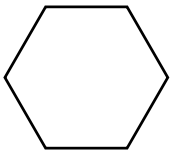


hexagon
6 straight sides



octagon
8 straight sides

Identify each polygon.

1. 

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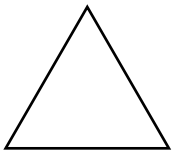
2. 

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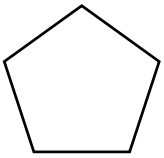
3. 

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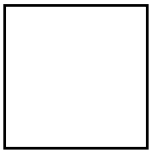
4. 

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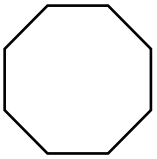
5. 

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6.

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10–2

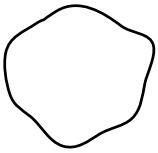
Name _____ Date _____

Skills Practice

4MG3.0

Plane Figures

Tell whether each figure is open or closed. Is it a polygon? If so, classify the figure.

1. 

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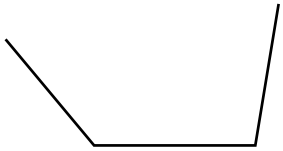
2. 

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3.

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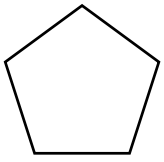
4. 

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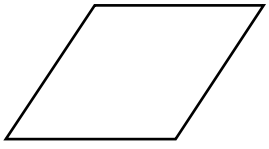
5. 

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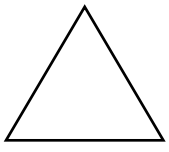
6. 

_____

_____

Draw the figure and identify it.

7. a 6-sided figure

_____

8. an 8-sided figure

_____

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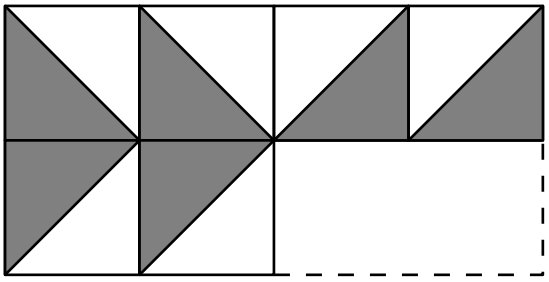
Reteach

4MG3.0, 4MR1.1

Problem-Solving Strategy

Find a Pattern

What shapes are missing?



Step 1. Understand

Be sure you understand the problem.
Read carefully.

What do you know?

- The shapes are in a pattern.

What do you need to find?

- You need to identify

_____

_____

_____

Step 2. Plan

- Logical Reasoning
- Make a Graph
- Make a Table or List
- Guess and Check
- Work Backward
- Draw a Picture or Diagram
- Act It Out
- Find a Pattern
- Write an Equation
- Solve a Simpler Problem

Make a plan.
Choose a strategy.

Looking for a pattern will help you solve the problem.

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10–3

Name _____ Date _____

Reteach *(continued)*

4MG3.0, 4MR1.1

Problem-Solving Strategy

Find shapes that look familiar. Look for a pattern to see how these shapes have been moved.

Step 3. Solve

Carry out your plan.

Look for shapes you know. What shapes do you see?

_____

What is one way to describe how the figures moved?

_____

Step 4. Check

Is the solution reasonable?

Reread the problem.

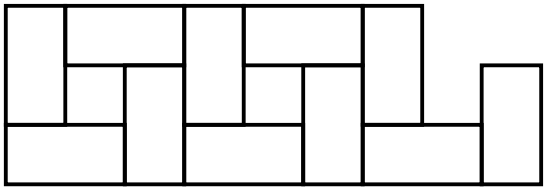
Did you answer the question? Yes _____ No _____

What other strategies could you use to solve the problem?

_____

_____

Practice



1. What shapes do you see in the pattern? Describe the missing shapes.

_____

_____

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Name _____ Date _____

Skills Practice

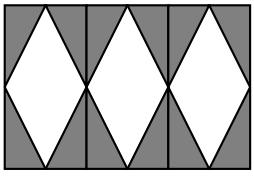
4MG3.0, 4MR1.1

Problem-Solving Strategy

Find a Pattern

1. What shapes do you see in the pattern below?

_____



2. Suppose you extend this design. You have a total of 20 small right triangles. How many rhombi will there be in all?

_____

Mixed Strategy Review

Solve. Use any strategy.

3. Aaron buys 5 Picasso T-shirts for his family. A large T-shirt costs $15 and a small T-shirt costs $12. Aaron spends $69. How many large T-shirts does he buy? How many small T-shirts does he buy?

_____

Strategy: _____

4. On May 15, 1990, a painting by Van Gogh sold for $75,000,000. Two days later, a painting by Renoir sold for $4,000,000 less than that amount. How much did Renoir's painting sell for?

_____

Strategy: _____

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Name _____ Date _____

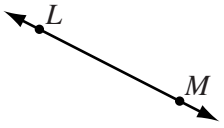
Reteach

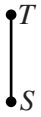
4MG3.1

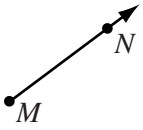
Lines, Line Segments, and Rays

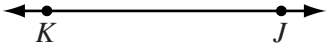
A **line** goes on forever in both directions	A **line segment** is part of a line. It has two endpoints.	A **ray** has one endpoint.
Parallel lines never meet.	**Intersecting lines** meet.	**Perpendicular lines** form square corners.

Identify each figure.

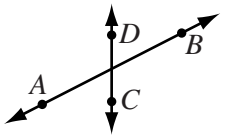
1. 

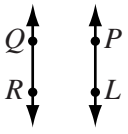
2. 

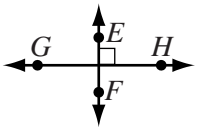
3. 

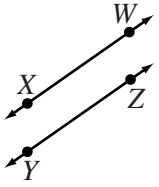
4. 

Describe each figure.

5. 

6. 

7. 

8. 

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10–4

Name _____ Date _____

Skills Practice

4MG3.1

Lines, Line Segments, and Rays

Describe the figure.

1.

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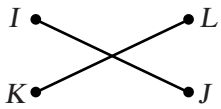
2. 

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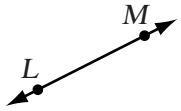
4. 

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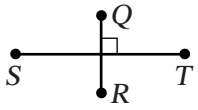
5. 

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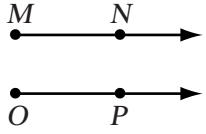
6. 

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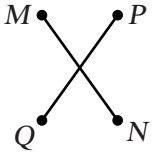
7. 

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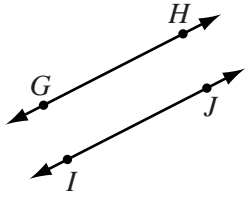
8. 

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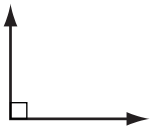
Name _____ Date _____

Reteach

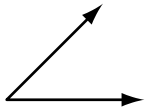
4MG3.5

Angles

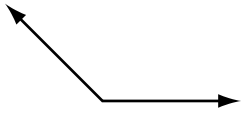
Angles are formed by two rays that have the same endpoint.



- A **right** angle forms a square corner.
- It measures 90°.
- It is formed by perpendicular lines.



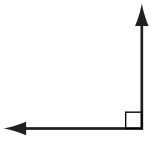
- An **acute** angle is smaller than a right angle.
- It measures greater than 0° and less than 90°.



- An **obtuse** angle is bigger than a right angle.
- It measures greater than 90°, but less than 180°.

Identify each angle.

Classify each angle as *right*, *acute*, or *obtuse*. Use the corner of a sheet of paper to help you.

1. 

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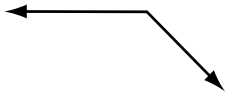
2. 

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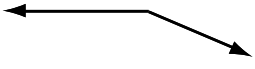
3. 

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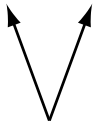
4. 

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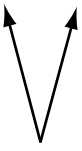
5. 

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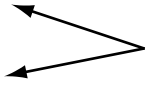
6. 

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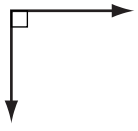
7. 

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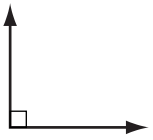
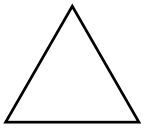
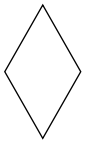
8. 

_____

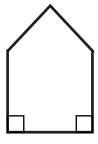
Complete.

9. 

This triangle has 3 _____ angles.

10. 

This kite has 2 _____ angles and 2 _____ angles.

11. 

This pentagon has 2 _____ angles, 2 _____ angles and 1 _____ angle.

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10–5

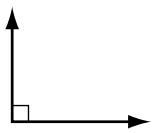
Name _____ Date _____

Skills Practice

4MG3.5

Angles

Classify each angle as *right, acute* or *obtuse*.

1. 

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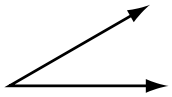
2. 

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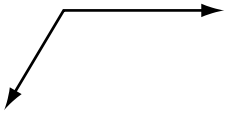
3. 

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4.

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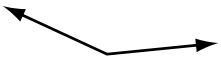
5. 

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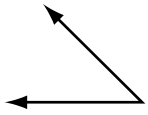
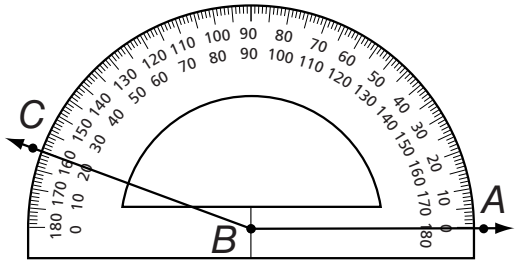
6. 

_____

Classify each angle as *right, acute* or *obtuse*.

7. 

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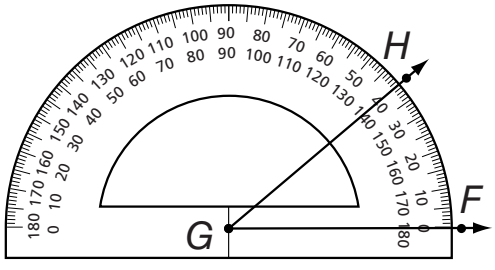
8. 

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Name _____ Date _____

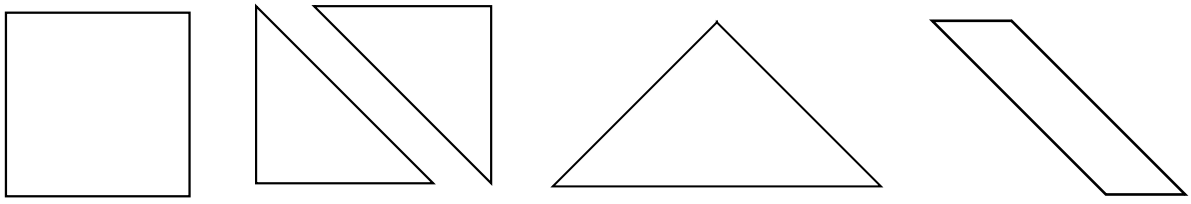
Reteach

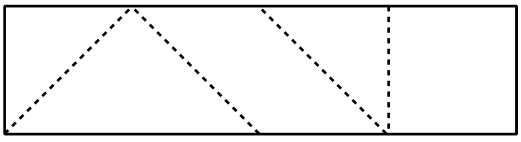
4MR2.0, 4MG3.0

Problem-Solving Investigation

There are many ways to solve most math problems. You will decide which method works best for you when you read the problems.

Maria is trying to put her brother's blocks the way they were when she found them. They were in a neat rectangle. Use the polygons below to form a rectangle:



Understand	You know that you need to use the five polygons to form a rectangle. You need to find out how to arrange the polygons to form a rectangle.
Plan	Choose a strategy. This problem has pieces that need to be moved around to fit in a certain way. You could draw these pieces on paper, cut them out, and move them around to see how they fit. Use the act it out strategy to solve the problem.
Solve	Arrange the polygons in different ways until you form a rectangle: 
Check	Look back at the problem. Check that your answer makes sense.

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10–6

Reteach

4MR2.0, 4MG3.0

Problem-Solving Investigation (continued)

Use any method shown below to solve. Tell what method you used.

- Work backward
- Reasonable answers
- Act it out
- Guess and check
- Look for a pattern

1. A farmer has cows and chickens. Juan counted 296 legs in the farmyard. If there are 100 animals, how many are cows and how many are chickens?

_____

Strategy: _____

2. Melissa has $20. She earns $9 a week babysitting. Is it reasonable to say she will be able to buy a bike that costs $150 in 15 weeks?

_____

Strategy: _____

3. Drew bought his lunch for $6. Then he paid $8 for admission to the skate park. Then he paid $3 to ride the bus home. Now he has $2. How much money did Drew start with?

_____

Strategy: _____

4. Abby paid for lunch with $15. She got back $4. If her salad cost $3, and her water cost $2, how much was the turkey sandwich?

_____

Strategy: _____

5. Colin sold muffins for the school's bake sale. He sold each muffin for $2. If he earned $48, how many muffins did he sell?

_____

Strategy: _____

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Name _____ Date _____

10–6

Skills Practice

4MR2.0, 4MG3.0

Problem-Solving Investigation

Use any method shown below to solve. Tell what method you used.

- Work backward
- Reasonable answers
- Act it out
- Guess and check
- Look for a pattern

1. A group of kids were riding bikes. Jessica counted 38 wheels. If there are 15 kids, how many are riding bikes with training wheels and how many are riding bikes without training wheels?

_____

Strategy: _____

2. Nicholas practices lacrosse for 75 minutes a day during the week and 90 minutes a day on weekends. Is it reasonable to say that he practices lacrosse for 15 hours each week?

_____

Strategy: _____

3. Kayla sat down to begin her homework at 4:15. After school, her bus ride home is 15 minutes. Then she had a snack and talked with her friends for 25 minutes. She also did her chores for 20 minutes before beginning her homework. What time does Kayla's school end? _____

Strategy: _____

4. What are the next three animals in the pattern if this pattern continues?

_____

Strategy: _____

5. Tyler is bringing napkins for his grade's picnic. There are 92 people coming to the picnic. He found napkins in packages of 12. How many packages does Tyler need to bring? _____

Strategy: _____

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Name _____ Date _____

Reteach

4MG3.7

Triangles

You can classify a triangle by the lengths of its sides or the measures of its angles.

An **equilateral triangle** has three sides of equal length.

An **isosceles triangle** has at least two sides of equal length.

A **scalene triangle** has no sides of equal length.

by length of sides

An **acute triangle** has three acute angles (less than 90°).

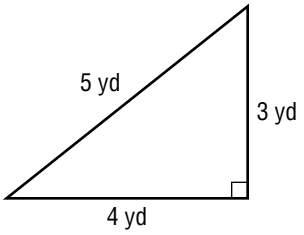
An **obtuse triangle** has one obtuse angle (greater than 90° and less than 180°).

A **right triangle** has one right angle (exactly 90°).

by measure of angles

Classify each triangle. Use *isosceles*, *equilateral*, or *scalene* and *acute*, *right*, or *obtuse*.

1.



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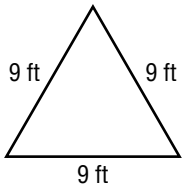
2.



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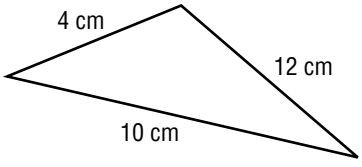

_____

4. Identify the term that does not belong with the other three.

A. right **B.** obtuse **C.** scalene **D.** acute

4. _____

5. What kind of triangle has three sides of equal length?

F. equilateral **G.** scalene **H.** right **J.** acute

5. _____

6. How many degrees does a straight line measure?

_____

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10–7

Name _____ Date _____

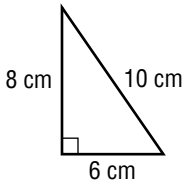
Skills Practice

4MG3.7

Triangles

Classify each triangle. Use *equilateral, isosceles,* or *scalene* and *right, acute,* or *obtuse.*

1.



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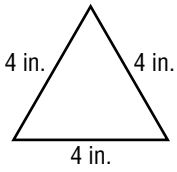
2.



_____

Define each term.

3. Scalene

_____

4. Obtuse

_____

5. Equilateral

_____

Tell if each statement is true or false. Explain why.

6. Equilateral triangles are triangles where all three sides have different lengths.

_____

7. Some right triangles are also equilateral triangles.

_____

_____

Problem Solving

Solve.

8. Sue's half sandwich is 5 inches on one side, 3 inches on another, and 4 on the third side. What kind of triangle is it?

_____

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Reteach

4MG3.8

Quadrilaterals

All quadrilaterals have 4 sides and 4 angles.

A **square** has 4 equal sides and 4 right angles.

A **rhombus** has 4 equal sides. Its opposite sides are parallel.

A **rectangle** has 4 right angles. Its opposite sides are equal and parallel.

A **trapezoid** has 1 pair of parallel sides.

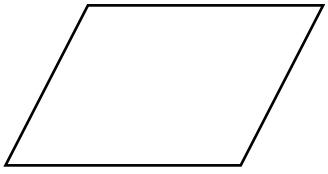
A **parallelogram** has opposite sides that are equal and parallel.

Classify each quadrilateral in as many ways as you can.

1. _____

2.

_____

3.  _____

4. This quadrilateral has opposite sides that are equal and parallel.

What quadrilateral is it? _____

5. True or false.

A rectangle is a parallelogram. _____

6. How are a rhombus and a trapezoid similar?

_____

_____

_____

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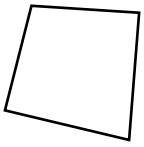
Skills Practice

4MG3.8

Quadrilaterals

Write the type of quadrilateral that best describes the shape.

1. 

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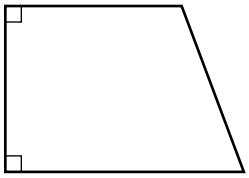
2. 

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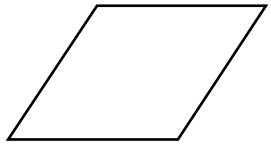
3. 

_____

Tell if each statement is *true* or *false*. Explain why.

4. All rectangles are parallelograms. _____

_____

5. All squares are rhombuses. _____

_____

6. Some right triangles are also equilateral triangles. _____

_____

Solve.

7. Sue's desk has equal sides of 20 inches and 4 right angles. Nancy's desk has two sides of 20 inches, two sides of 30 inches, and 4 right angles. Both say their desks are rectangles. Who is correct?

_____

8. Mike makes a square out of wooden sticks. He pushes one corner of the square and makes a rhombus. How are the square and rhombus alike? How are they different?

_____

_____

_____

_____

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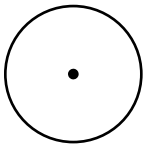
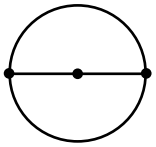
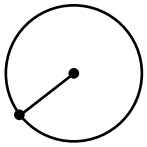
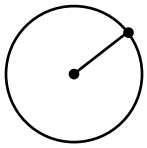
Reteach

4MG3.2

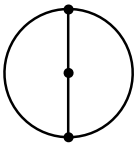
Parts of a Circle

		
The **center** of a circle is in the middle. All points on the circle are the same distance from the center.	A **diameter** is a line segment that connects 2 points on the circle and goes through the center of the circle.	A **radius** is the distance from the center of a circle to every point on a circle.

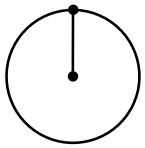
Identify the parts of a circle.

1. 

_____

3. 

_____

5. 

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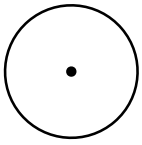
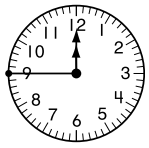
2. 

_____

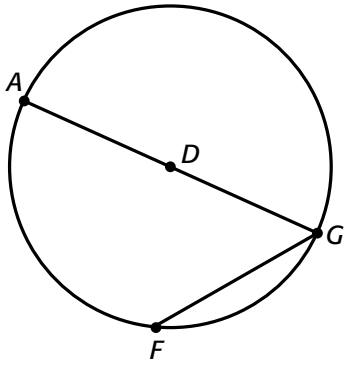
4.

_____

6. 

_____

Name the parts of the circle.



7. D

_____

8. $\overline{AD}$

_____

9. $\overline{AG}$

_____

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Name _____ Date _____

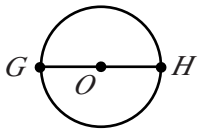
Skills Practice

4MG3.2

Parts of a Circle

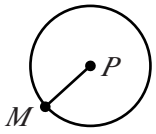
Identify the parts of a circle.

1.



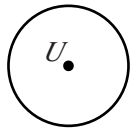
_____

2.



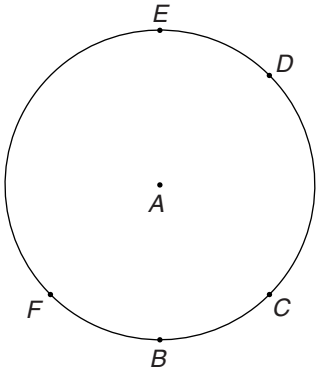
_____

3.



_____

Use data from the circle for problems 4–9. Locate each pair of points on the circle. Name the line segments they create and classify them as parts of a circle.



4. A, D

_____

5. E, B

_____

6. D, F

_____

7. A, F

_____

8. A, C

_____

9. A, B

_____

Problem Solving

Solve.

10. Alan drew a line from one side to the other going through the center of a circle. What part of the circle did Alan draw?

_____

11. Draw a circle. Then draw and label a diameter, a radius, and the center.

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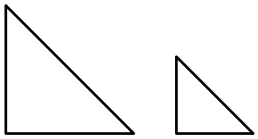
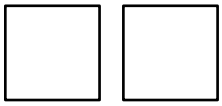
Reteach

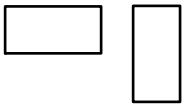
4MG3.3

Geometry: Congruent

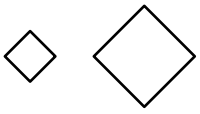
Similar Figures	Congruent Figures	Not congruent Not similar
		
• *same* shape • different sizes	• *same* shape • *same* size	• not the same shape • not the same size

To see if figures are congruent, trace one figure. If it fits exactly on top of the other figure, the two figures are congruent.

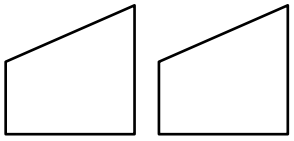
Tell whether the figures are congruent. Write *yes* or *no*.

1. 

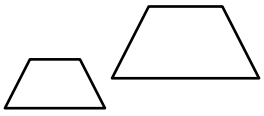
_____

2. 

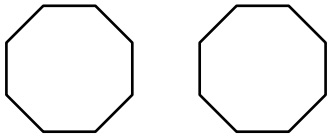
_____

3. 

_____

4. 

_____

5. 

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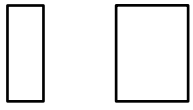
6. 

_____

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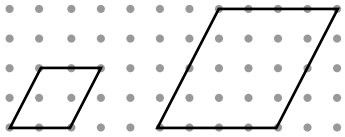
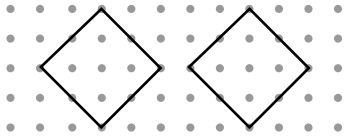
Skills Practice

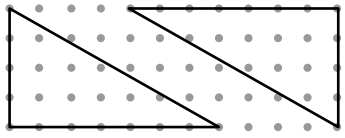
4MG3.3

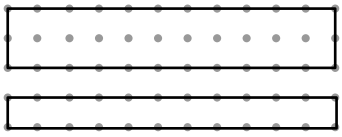
Geometry: Congruent

Tell whether the figures are congruent. Write *yes* or *no*.

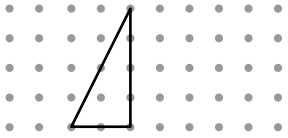
1.  _____

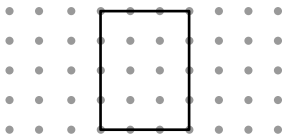
2.  _____

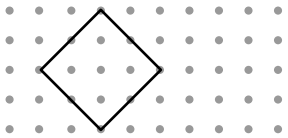
3.  _____

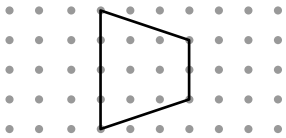
4.  _____

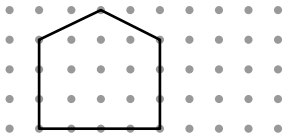
Copy each figure on a separate piece of dot paper.
Then draw one congruent figure.

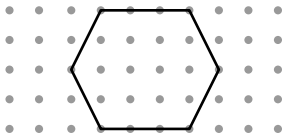
5. 

8. 

6. 

9. 

7. 

10. 

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Reteach

4MG3.4

Geometry: Symmetry

Follow these steps to find out if a figure has bilateral symmetry.

Trace Figure A and cut it out. Fold it along one of the dashed lines. The two halves match. The dashed line is a **line of symmetry**. The figure has **bilateral symmetry**. Unfold the figure. Fold the figure along the other dashed lines. The halves match, so all the lines are lines of symmetry.

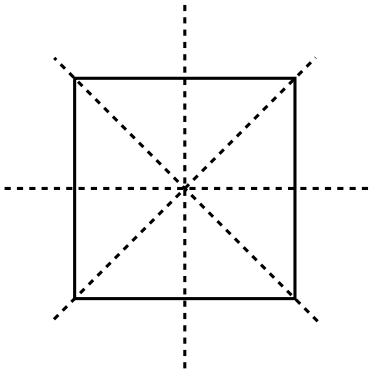


Figure A

Follow these steps to find out if Figure B has rotational symmetry.

Trace Figure B and cut it out. Place it on top of the original
Figure B. Put your pencil point on the dot in the center. Turn the top figure 90°. The top figure matches the original figure. Turn the top figure 180°. The figures match. Figure B has **rotational symmetry**.

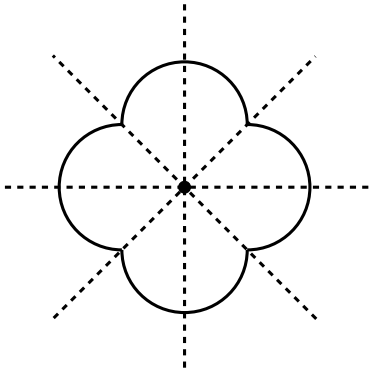
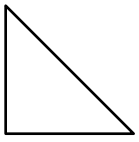


Figure B

Tell whether each figure has line symmetry. Write *yes* or *no.*

1. 

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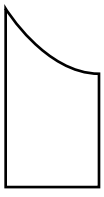
2. 

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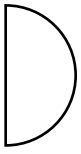
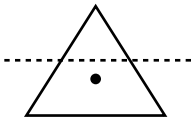
3. 

_____

Tell whether the dashed line is a line of symmetry. Then, tell whether the figure has rotational symmetry. Write *yes* or *no.*

4. 

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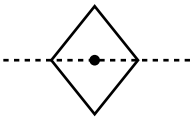
5. 

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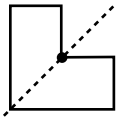
6. 

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11–2

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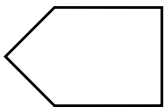
Skills Practice

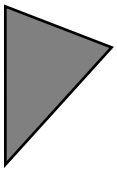
4MG3.4

Geometry: Symmetry

Tell whether each figure has line symmetry. Write *yes* or *no.*

1. 

_____

3. 

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2.

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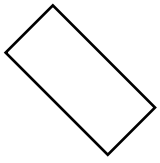
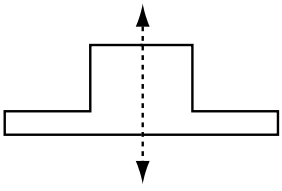
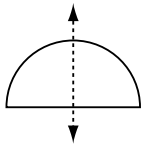
4. 

_____

Tell whether the dotted line is a line of symmetry. Write *yes* or *no*.

5. 

_____

7. 

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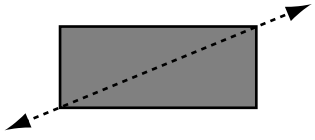
9. 

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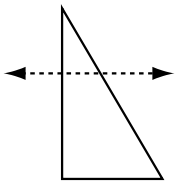
6. 

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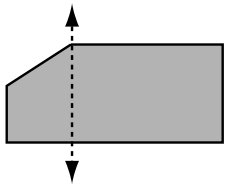
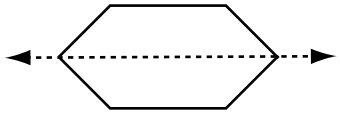
8. 

_____

10. 

_____

11. On a separate sheet of paper, draw a figure with **rotational symmetry.**

_____

12. On a separate sheet of paper, draw a figure with **bilateral symmetry.**

_____

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Name _____ Date _____

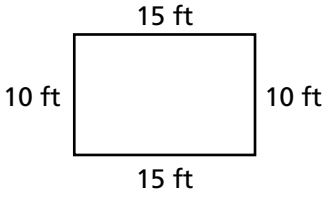
Reteach

4MG1.4, 4AF1.4

Measurment: Perimeter

Perimeter is the distance around a closed figure. To find the perimeter, add the lengths of all the sides.

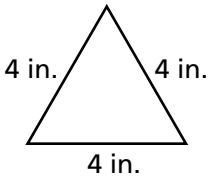
10 ft
15 ft
10 ft
+ 15 ft
50 ft



The perimeter of the rectangle is 50 ft.

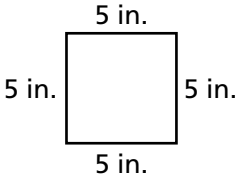
Find the perimeter of each figure.

1.



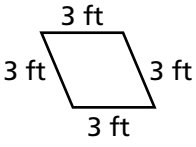
_____ + _____ + _____ = _____

2.



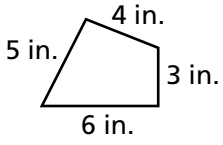
_____ + _____ + _____ + _____ = _____

3.



_____

4.



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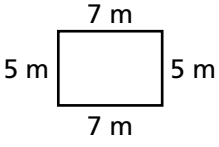
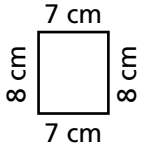
5.



_____

6.



_____

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11–3

Name _____ Date _____

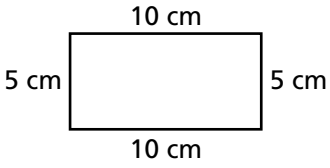
Skills Practice

4MG1.4, 4AF1.4

Measurement: Perimeter

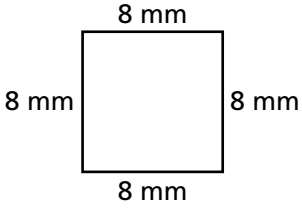
Find the perimeter of each figure.

1.



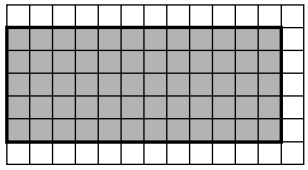
_____

3.



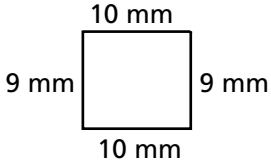
_____

5.



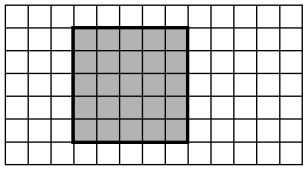
_____

2.



_____

4.



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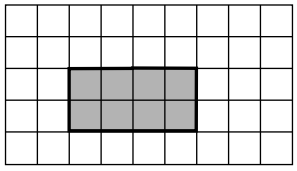
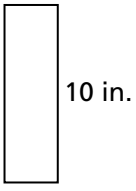
6.



_____

ALGEBRA Find the length of each missing side.

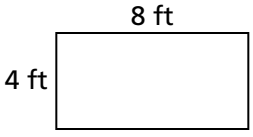
7.



perimeter = 26 in.

_____

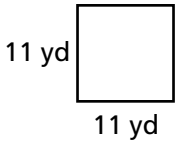
8.



perimeter = 24 ft

_____

9.



perimeter = 44 yd

_____

Find the perimeter of each item.

10. Gerry plans a rectangular garden plot that is 30 feet long and 15 feet wide. What is the perimeter of the garden plot?

_____

11. A fence around a rectangular corral has a length of 180 feet and a width of 90 feet. What is the perimeter of the fence?

_____

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Reteach

4MR1.2, 4NS3.0

Problem-Solving Strategy: Solve a Simpler Problem

Josie and Julia made 16 congruent hexagon-shaped signs for Cara's surprise birthday party. Julia and Josie put ribbon around the edges of each of the signs. If each side of the hexagons is 13 inches, how much ribbon do Julia and Josie need?

Step 1. Understand	**Be sure you understand the problem.** Read carefully. What do you know? • There are _____ signs. • There are _____ sides to each sign. • Each side of the sign is _____ inches long. Julia and Josie are putting ribbon around the edges of each sign. What do you need to find? • You need to find _____ _____
Step 2. Plan	**Make a plan.** Solve a simpler problem. Use simpler numbers to make up a problem similar to the one you need to solve. Then solve the real problem the same way.

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11–4

Name _____ Date _____

Reteach *(continued)*

4MR1.2, 4NS3.0

Problem-Solving Strategy

Step 3. Solve	**Carry out your plan.** Create a simpler problem. Round 16 signs to 20 signs, and 13 inches to 10 inches to make multiplying easier. 6 sides × _____ or _____ inches. 20 signs × _____ inches = _____ inches. The amount of ribbon used for both signs is about _____. Now solve the real problem the same way. 6 sides × _____ or _____ inches. 16 signs × _____ inches = _____ inches. The amount of ribbon used for both signs is _____.
Step 4. Check	**Is the solution reasonable?** Reread the problem. Does your answer make sense? Explain. _____ _____ _____

Solve. Use the *solve a simpler problem* strategy.

1. Robert is going to buy 4 pounds of apples. He is also going to buy 6 pounds of grapes. The apples and grapes are both $2 a pound.

   What will be the total cost of the fruit? _____

2. Kyle's CD has 12 songs, and each song is 4 minutes long. Jane's CD has 15 songs, and each song is 3 minutes long. Whose CD plays longer and by how much? _____

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Name _____ Date _____

Skills Practice

4MR1.2, 4NS3.0

Problem-Solving Strategy: Solve a Simpler Problem

Solve. Use the *solve a simpler problem* strategy.

1. Mike's school is being repainted. They use 225 gallons of white paint. They use 45 gallons fewer green paint than white paint. How many gallons of paint does he use in all? _____

2. Julia is placing 63 baseball cards in an album. She will put the same number of cards on each of 7 pages. She can put 3 pictures in each row. How many rows will be on each page? _____

3. Six farmers spend 310 hours in all planting corn. One of the farmers spent 60 hours. The rest spent the same amount of time each. How many hours did each spend on planting corn. _____

Solve. Use any strategy.

4. There are 24 plants in a garden. There are 4 more tomato plants than red pepper plants. There are twice as many red pepper plants as green pepper plants. How many of each kind of plant is in the garden?

   _____

   _____

   Strategy: _____

5. The Yogurt Cart has the following 3 flavors: chocolate, vanilla, and strawberry. Yogurt comes in a cup or a cone. You can have no sprinkles, chocolate sprinkles, or rainbow sprinkles. How many different choices are there? _____

   Strategy: _____

6. An ounce of cheddar cheese has 114 calories. An ounce of Brie cheese has 95 calories. How many more calories does an ounce of cheddar cheese have than an ounce of Brie cheese?

   _____

   Strategy: _____

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Name _____ Date _____

Reteach

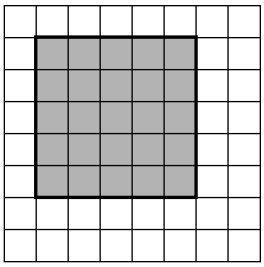
4MG1.4

Measurement: Area

Area is the number of square units needed to cover a region or figure.

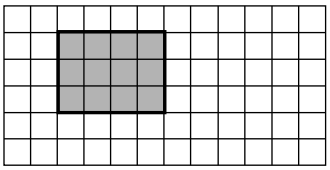
You can use these two ways to find the area of a rectangle or square.

- Count the number of square units.
  There are 25 square units.
  The area is 25 square units.
- Multiply the length times the width.
  $5 \times 5 = 25$
  The area is 25 square units.



Find the area of each figure.

1.

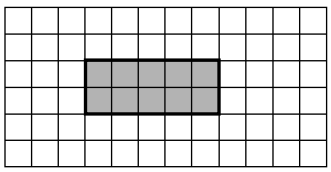


length: _____ units

width: _____ units

area = _____ square units

2.

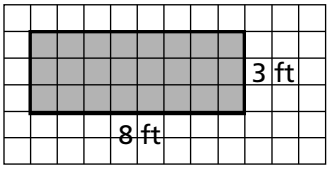


length: _____ units

width: _____ units

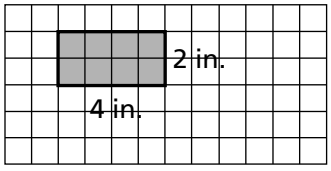
area = _____ square units

3.



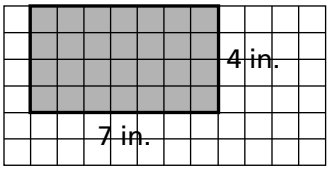
_____

5.



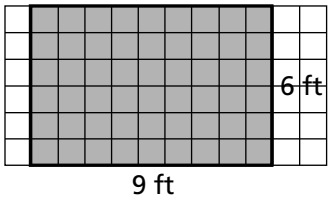
_____

4.



_____

6.



_____

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11–5

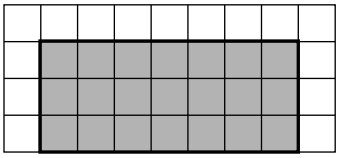
Name _____ Date _____

Skills Practice

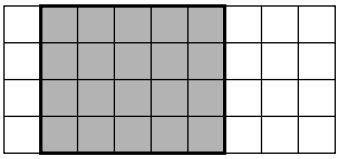
4MG1.4

Measurement: Area

Find the area of each figure.

1. 

_____

2. 

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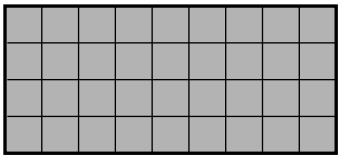
3. 

_____

4. 4 ft

4 ft

_____

5. 2 in.

2 in.

_____

6. 2 yd

5 yd

_____

Use grid paper to draw each of the following squares or rectangles. Tell whether the figure is a *square* or *rectangle*. Then find the area.

7. length: 5 cm
width: 8 cm _____

8. length: 7 cm
width: 7 cm _____

9. length: 7 cm
width: 4 cm _____

Find the area and perimeter of each figure.

10. 12 cm

10 cm

_____ _____

11. 1 m

5 m

_____ _____

12. 7 mm

28 mm

_____ _____

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11–6 Reteach

4MR1.1, 4NS3.0

Problem-Solving Investigation: Choose The Best Strategy

There are many ways to solve most math problems. You will decide which strategy works best for you when you read the problems.

Problem-Solving Strategies

Reasonable Answers: This strategy helps when you are looking for an estimate of something.
Act it Out: This strategy can help if you have to move things around to see how they fit together.
Guess and Check: This strategy can help when there is no pattern and many possible answers.
Look for a pattern: This strategy can help you solve problems when the input changes.
Solve a Simpler Problem: This strategy can help you break a problem into smaller, simpler problems.

At Sean's school, the Specials teachers rotate which days they come to school. Art is every three days. Music is once a week, rotating days each week. Physical Education is every other day. If he had all three Specials on Monday, which Specials will he have this Friday.

Understand	You know the pattern of his Specials classes. You also know that you need to use the pattern of classes to predict. You need to find out which classes Sean will have on Friday.
Plan	Choose a strategy. There is a pattern for each class. Look at the rule of each pattern. Use the rule to figure out which classes will happen on Friday. Use the *look for a pattern* strategy to solve the problem.
Solve	The rules are: Art is every three days; Physical Education is every other day; Music is once a week, rotating days.
Check	Check to see if you are correct: Write out which days this week Sean would have Art, Music, and Physical Education. Art: Monday, Thursday Music: Monday Physical Education: Monday, Wednesday, Friday

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11–6

Name _____ Date _____

Reteach *(continued)*

4MR1.1, 4NS3.0

Problem-Solving Investigation

Use any strategy shown below to solve. Tell what strategy you used.

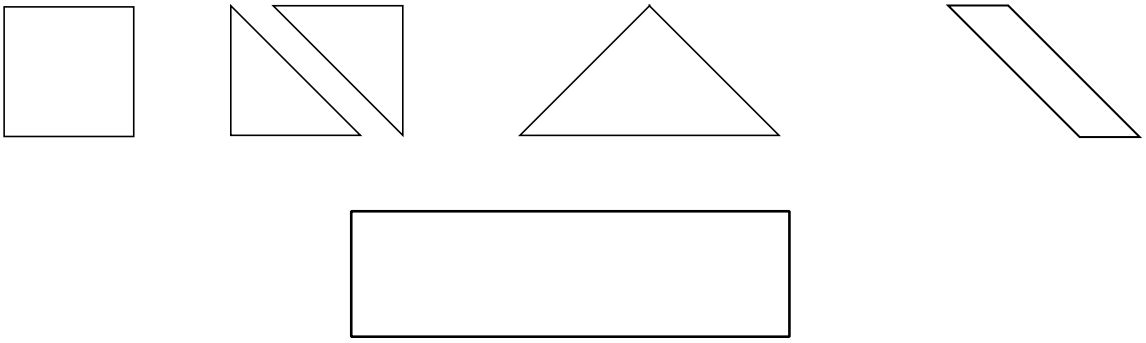
- Use the four-step plan
- Reasonable answers
- Act it out
- Guess and check
- Look for a pattern
- Solve a simpler problem

1. Steve counted 344 legs at the dog park. If there are 110 guests at the park, how many are people and how many are dogs?

_____

Strategy: _____

2. Arrange these 5 polygons to fit into this shape:



Strategy: _____

3. Sydney earns $1 per square feet that she cleans. If a room were 22 feet by 15 feet, how much would she be paid to clean it? _____

Strategy: _____

4. John can ride his bike 15 miles in 1 hour. Is it reasonable to say he could ride his bike 100 miles in 7 hours? _____

Strategy: _____

5. Michael has 88 toy cars. He has 19 more than Javier. Javier has 5 more than Jeff. How many cars does Jeff have? _____

Strategy: _____

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Name _____ Date _____

Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Investigation: Choose the Best Strategy

Use any strategy shown below to solve.
Tell what strategy you used.

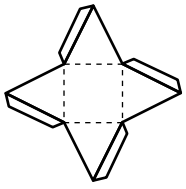
- Reasonable answers
- Act it out
- Guess and check
- Look for a pattern
- Solve a simpler problem

1. My brother tells me he has five bills in his wallet and they equal $32. If I can guess which bills they are: $20, $10, $5, $1, he will give them to me. What are the five bills in his wallet?

_____

Strategy: _____

2. Allison cut out this paper to wrap a gift. What shape is the package she will wrap?



_____

Strategy: _____

3. Elizabeth sells snacks for $2 after the football games. How much would she earn if she sold 57 snacks at each of four games? _____

Strategy: _____

_____

4. Eduardo can complete 6 math problems in 15 minutes. Is it reasonable for him to say he can complete 25 problems in one hour? _____

Strategy: _____

_____

5. Describe the pattern below and provide the next two numbers.

2, 9, 16, 23, _____

Strategy: _____

_____

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Name _____ Date _____

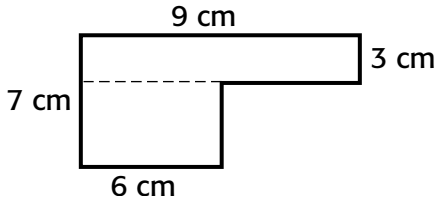
Reteach

4MG1.4

Measurement: Area of Complex Figures

When you need to find the area of a complex figure, you can break the figure into smaller, simpler parts.

Use this example to learn more about breaking a figure into smaller parts:



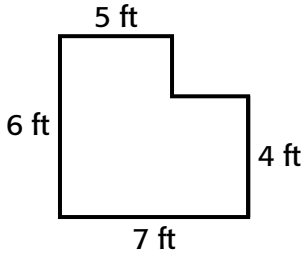
You can break this figure into 2 rectangles:

1. 9 cm × 3 cm = 27 sq cm
2. 6 cm × 4 cm = 24 sq cm

This complex figure's area is 27 sq cm + 24 sq cm = 51 sq cm

Find the area of each figure.

1.



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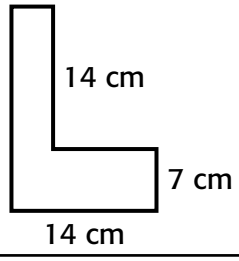
2. 5 cm



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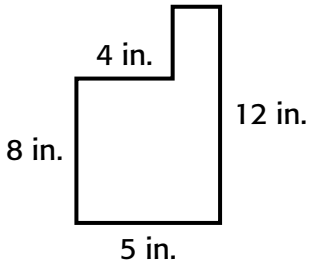
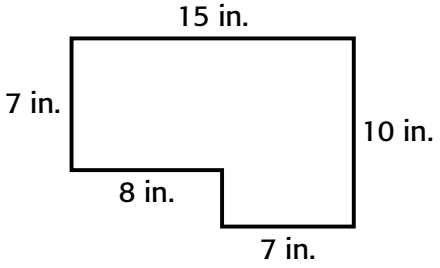
3.



_____

4.



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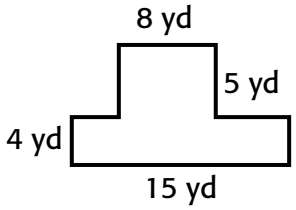
5.



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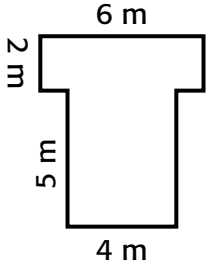
6.



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11–7

Name _____ Date _____

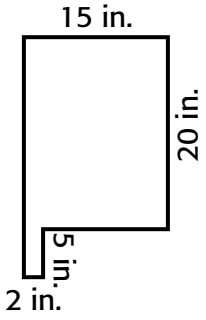
Skills Practice

4MG1.4

Measurement: Area of Complex Figures

Find the area of each figure.

1.



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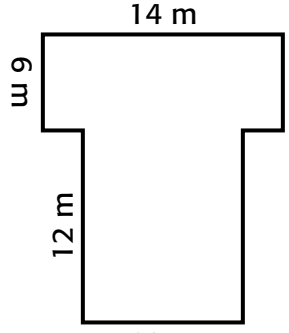
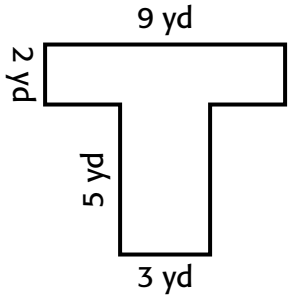
2.



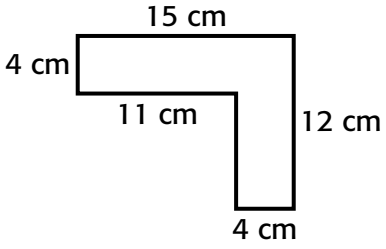
_____

3.



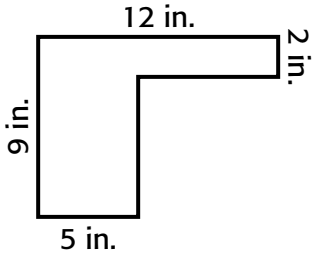
_____

4.



_____

5.



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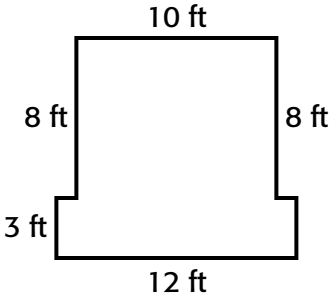
6.



_____

7. Caroline wants to make 2 blankets to replace her favorites. One is 3 feet × 2 feet. The other is 7 feet × 4 feet. What is the total area of both blankets?

_____

8. All the walls in Sam's house are 8 feet high. He has three walls that are 12 feet, 14 feet, and 15 feet to paint. What is the total area of the 3 walls to paint?

_____

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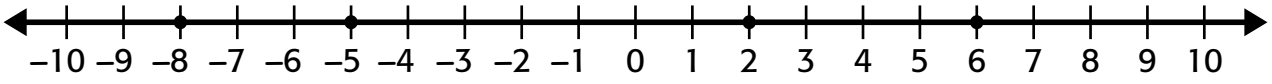
Name _____ Date _____

Reteach

4NS1.8

Negative Numbers

On a number line, numbers become greater as you move from left to right. Numbers greater than 0 are **positive numbers**. Numbers less than zero are **negative numbers**.



2 and 6 are positive numbers.
−8 and −5 are negative numbers.

Identify each number as *positive* or *negative*.

1. −9 _____

2. 4 _____

3. 7 _____

4. −10 _____

Write the number that represents each situation.

5. 23 feet below sea level _____

6. 14 feet above the ground _____

7. loss of 18 pounds _____

8. gain of 3 kilograms _____

9. profit of $74 _____

10. 10 degrees above zero _____

11. 5 degrees below zero _____

12. loss of 5 ounces _____

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12–1

Name _____ Date _____

Skills Practice

4NS1.8

Negative Numbers

Write the number that represents each situation.

1. spent $15 _____
2. 3 centimeter increase in height _____
3. 11 degrees colder than 0°F _____
4. withdrawal of $50 from bank account _____
5. 8-yard gain in football _____
6. received $5 allowance _____
7. deposit of $25 into bank account _____
8. speed increase of 15 mph _____
9. 10 feet below sea level _____
10. 30 seconds before liftoff _____
11. plant grows 4 inches _____
12. lost $3 _____

Describe a situation that can be represented by the number.

13. −17 _____
14. +$27 _____
15. +45 _____
16. −9 _____

Solve.

17. The low temperature on Saturday was −5°F. The low temperature on Sunday was −9°F. Use a number line to find which day was colder. _____
18. On one play a football team moved the ball −6 yards. On the next play, they moved the ball exactly the opposite. Did they gain or lose yards on the second play? How many yards?

_____

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Reteach

4MG2.1

Find Points on a Grid

The grid shows the location of rides at an amusement park.

Where is the Space Ride located? Start at 0. Go right 1, and then go up 2. You can write the location of the Space Ride as the ordered pair (1, 2).

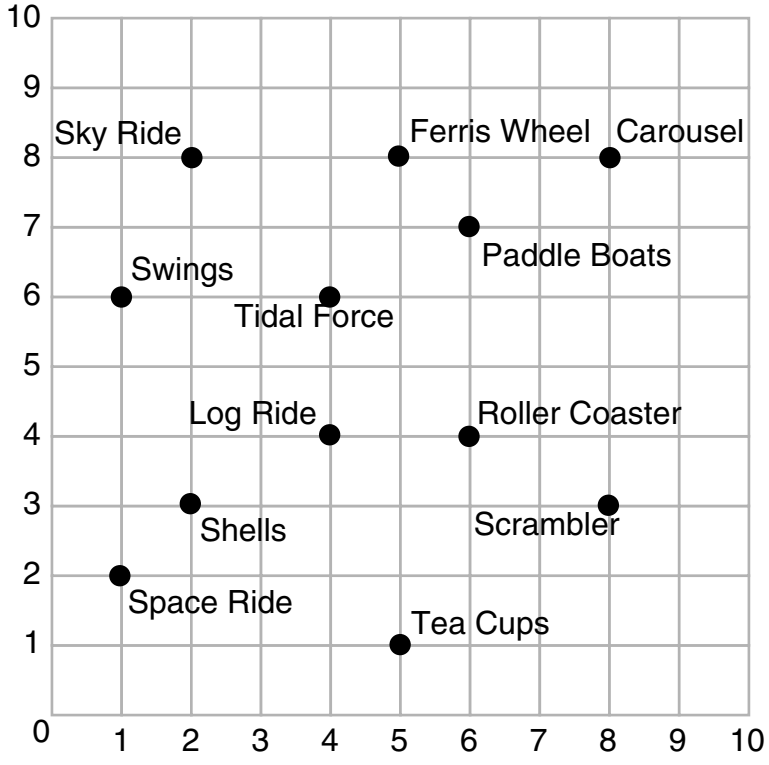
In an ordered pair, the first number tells you how far to go to the right. The second number tells you how far to go up.

Try this. Go right 5, and then go up 1.

(5, 1) ⟵ ordered pair

Which ride do you find?

_____



Complete. Use the grid above.

1. Start at 0. Go right 8, and then go up 3.
The ordered pair is (8, ___).
What is here? _____

2. Start at 0. Go right 4, and then go up 4.
The ordered pair is (___, 4).
What is here? _____

3. Start at 0. Go right 2, and then go up 8.
The ordered pair is _____.
What is here? _____

4. Start at 0. Go right 6, and then go up 7.
The ordered pair is _____.
What is here? _____

Identify the ride that is located at each ordered pair.

5. (5, 8) _____

6. (2, 3) _____

7. (4, 6) _____

8. (1, 6) _____

9. (6, 4) _____

10. (8, 8) _____

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12–2

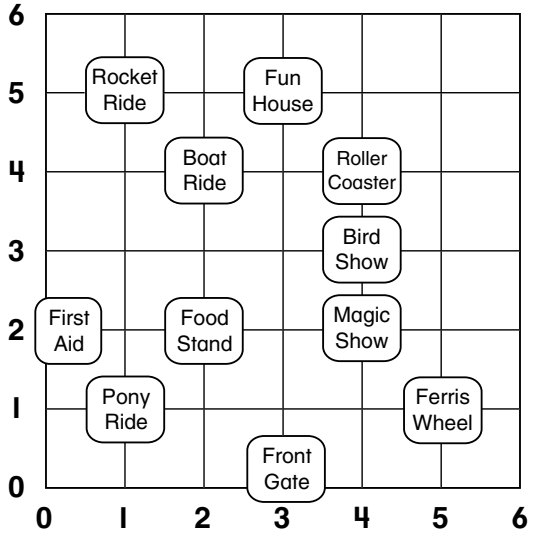
Name _____ Date _____

Skills Practice

4MG2.1

Find Points on a Grid

Identify the ride or letter that is located at each ordered pair.

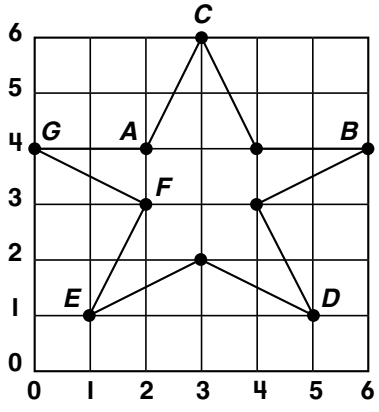


1. (2, 4) _____

2. (5, 1) _____

3. (1, 5) _____

4. (2, 2) _____

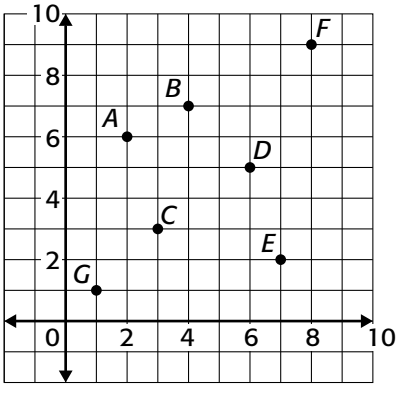


5. (6, 4) _____

6. (5, 1) _____

7. (1, 1) _____

8. (2, 3) _____



9. (2, 6) _____

10. (6, 5) _____

11. (8, 9) _____

12. (1, 1) _____

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Name _____ Date _____

Reteach

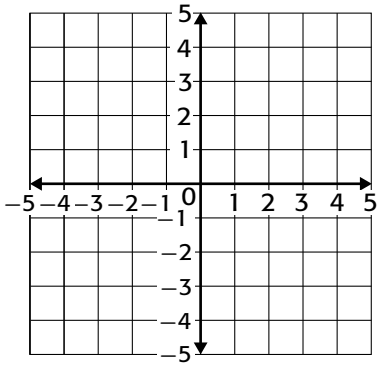
4MG2.2, 4MG2.3

Graph Ordered Pairs

An ordered pair is two numbers that tell you where a point is on a grid.

- The center point of a grid is (0, 0)
- The first number in the pair tells you where on the *x*-axis the point is. This is how far left or right you go on the grid. Negative numbers are left. Positive numbers are right.
- The second number in the pair tells you where on the *y*-axis the point is. This is how far up or down you go on the grid. Negative numbers are down. Positive numbers are up.

Graph and label each point on the grid.



1. point *D*: (5, 2)

2. point *E*: (−2, 1)

3. point *F*: (2, 4)

4. point *G*: (−4, −5)

5. point *H*: (3, −4)

6. point *I*: (1, 0)

Find the length of the horizontal or vertical line segment formed by each set of ordered pairs.

7. (−1, 1), (5, 1) _____

8. (5, −2), (5, 5) _____

9. (−3, 7), (6, 7) _____

10. (−2, 4), (−2, −3) _____

Answer the following using a coordinate grid that has 4 quadrants.

11. Rosa traveled from (−5, 1) to (4, −5) by first moving up or down and then left or right. Describe Rosa's movements. _____

_____

12. Tim traveled from (4, −3) to (0, 2) by first moving left or right and then up or down. Describe Tim's movements. _____

_____

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12–3

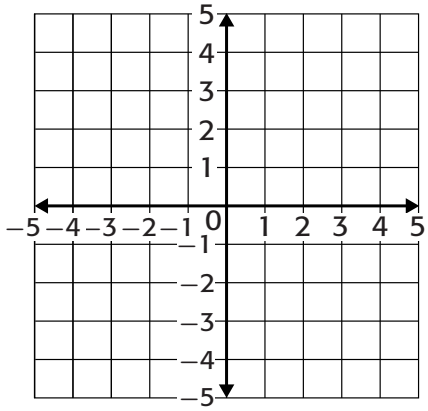
Name _____ Date _____

Skills Practice

4MG2.2, 4MG2.3

Graph Ordered Pairs

Graph and label each point on the grid.



1. point *T*: (4, −1)

2. point *U*: (−3, 1)

3. point *V*: (4, 2)

4. point *W*: (−4, −3)

5. point *X*: (1, 5)

6. point *Y*: (−1, 0)

Find the length of the horizontal or vertical line segment formed by each set of ordered pairs.

7. (2, 6), (5, 6) _____

8. (−2, 2), (4, 2) _____

9. (3, −4), (−4, −4) _____

10. (1, 0), (−3, 0) _____

Answer the following using a coordinate grid that has 4 quadrants.

11. Rachel traveled from (−2, 3) to (4, −1) by first moving up or down and then left or right. Describe Rachel's movements.

_____

_____

12. Juan traveled from (4, −7) to (−3, −1) by first moving left or right and then up or down. Describe Juan's movements.

_____

_____

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Name _____ Date _____

Reteach (1)

4MR1.1, 4SDAP1.1

Problem-Solving Strategy

Logical Reasoning
Use logical reasoning to solve each problem.

Dan needs to put 6 cups of sea salt into the saltwater tank. He has a 7-cup container and a 5-cup container. How can he use the containers to measure 6 cups?

Step 1. Understand **Be sure you understand the problem.**

Read carefully.

What do you know?

- Dan needs to put _____ cups of sea salt in a saltwater tank.
- Dan has containers that hold _____ cups and _____ cups.

What do you need to find?

- You need to find how to use the containers to measure _____ cups.

Step 2. Plan **Make a plan.**

Choose a strategy.
Use logical reasoning to solve the problem.

You can use the difference in the amount each container can hold to measure exactly 6 cups.

Step 3. Solve **Carry out your plan.**

Complete the table. It will show how to use the 7-cup container and the 5-cup container to measure exactly 6 cups.

Steps	Sea Salt in 7-cup Container	Sea Salt in 5-cup Container	Sea Salt in Tank
1. Fill the 7-cup container.	_____	0	0
2. Fill the 5-cup container from the 7-cup container	_____	5 cups	0

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12–4

Name _____ Date _____

Reteach (2)

4MR1.1, 4SDAP1.1

Problem-Solving Strategy

3. Pour what is left in the 7-cup container into the tank.	0	5 cups	_____
4. Repeat steps 1–3. How much sea salt is in the tank now?	0	5 cups	_____
5. Repeat steps 1–3. How much sea salt is in the tank now?	0	5 cups	_____

Step 4. Check **Is the solution reasonable?**

Reread the problem.

How can you check your answers?

_____

_____

_____

Solve. Use the *logical reasoning* strategy.

1. A worker has a 4-gallon pail and a 9-gallon pail. How can he use them to fill a 10-gallon tank with water?

_____

_____

_____

2. Marcia arrives at the theater 10 minutes before Sam. Sam arrives 25 minutes after Lynn. Paul arrives 10 minutes before Lynn. Lynn gets to the theater at 6:30 p.m. When do the others arrive at the theater?

_____

_____

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Name _____ Date _____

Skills Practice

4MR1.1, 4SDAP1.1

Problem-Solving Strategy

Logical Reasoning
Solve. Use the *logical reasoning* strategy.

1. An aquarium worker needs to fill a tank with 10 gallons of water. He has an 8-gallon pail and a 6-gallon pail. How can he use the pails to get exactly 10 gallons of water in the tank?

_____

_____

_____

2. Simon needs to put 9 cups of sea salt into a saltwater tank. He has a 10-cup container and a 7-cup container. How can Simon use the containers to measure 9 cups?

_____

_____

_____

3. The parrot house has 2 times as many birds as the toucan house. The toucan house has 3 more birds than the crane house. The crane house has 6 birds. How many birds do the other houses have?

_____

_____

4. The parrots get food 20 minutes before the toucans. The toucans get food 15 minutes after the cranes. The cranes get food 30 minutes after Bird World opens. Bird World opens at 10:00 A.M. When does each kind of bird get food?

_____

_____

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Name _____ Date _____

Reteach

4AF1.5

Functions

The numbers in a function table relate to one another to form a pattern.

One number is 1 greater than 2 times a number.

x	1	2	3	4	5
y	3	5	7	9	11

Think: How can I find the value of y?

$$\begin{array}{rccccc} x = & 1 & 2 & 3 & 4 & 5 \\ & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ \text{Equation} = & 2x+1 & 2x+1 & 2x+1 & 2x+1 & 2x+1 \\ & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\ y = & 3 & 5 & 7 & 9 & 11 \end{array}$$

In each case, multiply by 2 and add 1.

Complete each function table. Then write an equation.

1. One number is 2 greater than another number.

Think: Add 2 to x to get y.

x	1	2	3	4	5
y	3	4			

_____

2. One number is 4 times another number.

Think: Multiply x by 4 to get y.

x	1	2	3	4	5
y	4	8			

_____

3. One number is 5 less than another number.

Think: Subtract 5 from x to get y.

x	10	9	8	7	6
y	5				

_____

4. One number is 1 less than 2 times a number.

Think: Multiply x by 2 and subtract 1

x	1	2	3	4	5
y	1				

_____

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12–5

Name _____ Date _____

Skills Practice

4AF1.5

Functions

Complete each function table.

1. Roger runs 7 miles more each week than another boy.

Rule: $y = x + 7$	
Input (x)	Output (y)
1	8
2	9
3	
4	
5	

2. One number is 4 less than 3 times another number.

Rule: $d = 3c - 4$	
Input (c)	Output (d)
4	8
5	11
6	
7	
8	

3. One number is 8 greater than 2 times another number.

Rule: $n = 2m + 8$	
Input (m)	Output (n)
1	10
2	12
3	
4	
5	

4. Liz swims 2 more than 2 times as many laps as Sunny does.

Rule: $a = 2b + 2$	
Input (b)	Output (a)
0	2
1	4
2	
3	
4	

Solve.

5. Each of 4 people orders an $8 lunch. How much do the 4 lunches cost? Write and solve an equation.

_____

_____

6. Ben buys 3 toys that cost $3 each. How much do the toys cost? Write and solve an equation.

_____

_____

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Name _____ Date _____

Reteach

4MG2.1

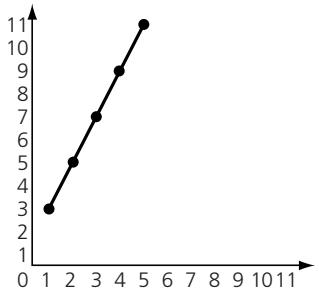
Graph Functions

You can use the numbers in a function table to graph an equation.
Graph the function $y = 2x + 1$.

The values in the table form ordered pairs. You can graph these ordered pairs.

x	1	2	3	4	5
y	3	5	7	9	11

(x, y) (1, 3) (2, 5) (3, 7) (4, 9) (5, 11)



Complete each table. Write the ordered pairs. Then graph the functions.

1. $y = 2x$

x	0	1	2	3	4
y	0	2			

_____

_____

2. $y = 2x + 2$

x	0	1	2	3	4
y	2	4			

_____

_____

3. $y = x + 5$

x	0	1	2	3	4
y	5				

_____

_____

4. $y = 3x$

x	0	1	2	3	4
y	0				

_____

_____

5. $y = 3x + 3$

x	0	1	2	3	4
y	3				

_____

_____

6. $y = 4x$

x	0	1	2	3	4
y	0				

_____

_____

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12–6

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Skills Practice

4MG2.1

Graph Functions

Complete each table. Then graph the function on another piece of paper.

1. $b = 2a$

a	0	1	2	3	4
b	0	2			

2. $y = x + 7$

x	0	1	2	3	4
y	7	8			

3. $g = 3f$

f	1	2	3	4	5
g	3				

4. $s = 4r$

r	1	2	3	4	5
s	4				

5. $n = 3m + 3$

m	0	1	2	3	4
n	3				

7. $q = 2p + 1$

p	0	1	2	3	4
q	1				

6. $y = 2x + 2$

x	1	2	3	4	5
y	4				

8. $l = k + 4$

k	0	1	2	3	4
l	4				

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Name _____ Date _____

12–7 Reteach

4MR1.1, 4AF1.5

Problem-Solving Investigation

Choose a Strategy

A landscape contractor is planting shrubs. She places each shrub 3 feet apart over a distance of 20 yards. She places the first shrub 3 feet from the starting point. How many shrubs does she use?

Step 1 Understand **Be sure you understand the problem.**

Read carefully.

What do you know?

- The shrubs are spread over a distance of _____ yards.
- She begins 3 feet from the starting point and places shrubs _____ feet apart

What do you know?

- You need to find the number of feet in _____ yards.
- You need to find how many

_____

Step 2 Plan **Make a plan. Choose a strategy.**

To find the answer, you can draw a diagram.

Find the number of feet in 20 yards.

Show a distance that is that many feet long. _____

Count by 3s to see how many shrubs are used if they are placed 3 feet apart.

To find the answer, you can also use logical reasoning.

All the shrubs are the same distance apart.

Use division to find how many shrubs are used.

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Name _____ Date _____

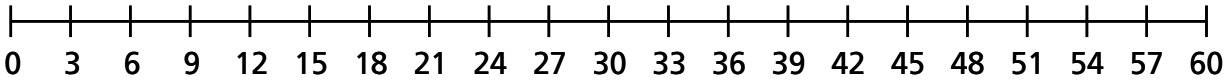
Reteach *(continued)*

4MR1.1, 4AF1.5

Step 3 Solve **Carry out your plan.**

Read carefully.

How many feet are in 20 yards?
1 yard = 3 feet



Draw a diagram. Show a 60-foot distance. Count by 3s, adding tick marks as shown.

Count the tick marks from 3 to 60. _____ shrubs are used.

OR: Use logical reasoning.

The distance is _____ feet. There will be 1 shrub every _____ feet.

Write a division equation. _____ ÷ _____ = _____

_____ shrubs are used.

Step 4 Check **Is the solution reasonable?**
Reread the problem.

Does your answer make sense? Yes No
Which method do you prefer? Explain.

_____

Practice

1. The parks department builds 5 rows of stands next to a baseball field. Each row is 20 feet long. How many 10-foot-long boards did they need to build the stands? _____

2. Ed has 4 packs of sports stickers. There are 24 stickers in each pack. He divides the stickers among 3 friends. How many stickers does each friend get? _____

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Name _____ Date _____

Skills Practice

4MR1.1, 4AF1.5

Problem-Solving Investigation

Use any strategy shown below to solve each problem.

- Act it out.
- Guess and check.
- Look for a pattern.
- Solve a simpler problem.
- Use logical reasoning.

1. The Sports Committee buys 30 yards of material. The material is cut into banners that are 5 feet long. How many banners are made? _____

2. The Sand Trap Golf Shop has 132 golf balls in stock. The golf balls are packed in tubes of 6. How many tubes of golf balls does the store have? _____

3. Liam is building a fence around his backyard. The backyard is 24 feet wide and 60 feet long. If Liam uses sections of fencing that are 12 feet long, how many sections does he use?

_____

4. There are 115 students going to the basketball tournament. Each bus can carry 26 students. How many buses are needed?

_____

5. Tina makes a display of 36 autographed baseballs. She puts 12 baseballs in a large display case. Tina also has 4 smaller display cases. How can she arrange the baseballs in the smaller cases so that each smaller case has an equal number of baseballs?

_____

_____

6. Francine uses a pattern to make a window display for a sneaker store. The first row has 2 sneakers, the second row has 6 sneakers, the third row has 10, and the fourth row has 14. How many sneakers are in the fifth row? _____

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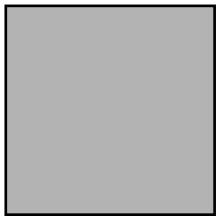
Name _____ Date _____

Reteach

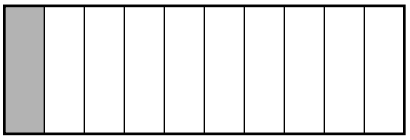
4NS1.5

Parts of a Whole

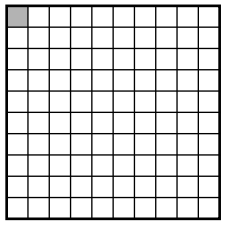
You can use models to show fractions.



This model shows 1.



This model shows 1 divided into 10 equal parts. You can shade the model to show $\frac{1}{10}$.



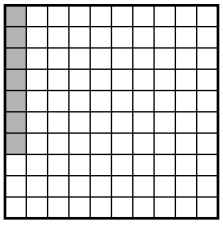
This model shows 1 divided into 100 equal parts. You can shade the model to show $\frac{1}{100}$.

Circle the fraction for the shaded part.

1.

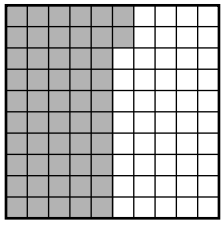
$\frac{4}{10}$ $\frac{4}{100}$

2.



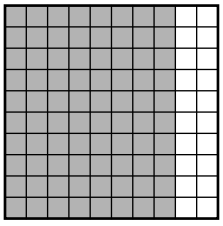
$\frac{7}{10}$ $\frac{7}{100}$

3.



$\frac{52}{100}$ $\frac{5}{10}$

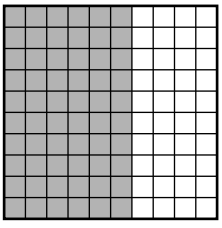
4.



$\frac{8}{10}$ $\frac{8}{100}$

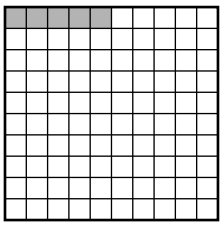
Write a fraction for each shaded part.

5.



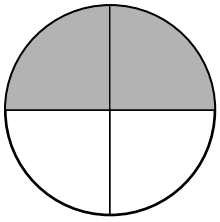
_____

6.



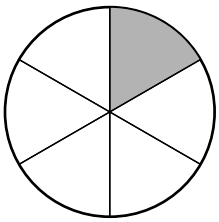
_____

7.



_____

8.



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13–1

Name _____ Date _____

Skills Practice

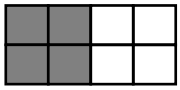
4NS1.5

Parts of a Whole

Write the fraction that names part of the whole.

1.

_____

2. 

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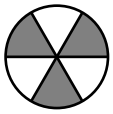
3. 

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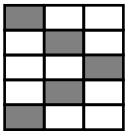
4. 

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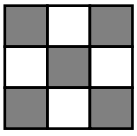
5. 

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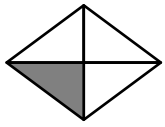
6. 

_____

7.

_____

8.

_____

Draw a rectangle and shade part of it to show the fraction.

9. $\frac{1}{3}$

10. $\frac{5}{7}$

11. $\frac{4}{9}$

12. $\frac{4}{5}$

13. $\frac{4}{8}$

14. $\frac{5}{6}$

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Name _____ Date _____

Reteach

4NS1.5, 4NS1.7

Parts of a Set

Pat has three shirts. Two of the shirts are blue and one of them is red.

What you know:

There is a total of **3** things in the set.

One of the 3 things is red.

Two of the 3 things are blue.

To use a fraction to name a part of the whole:

Make the denominator the whole, the total number of things in the set. The numerators are the different parts of the set.

Pat has a total of 3 shirts and 1 of the shirts is red. What fraction of the shirts is red?

$\frac{1}{3}$ or 1 out of 3 shirts is red.

$\frac{2}{3}$ or 2 of the 3 shirts are blue.

Write the fraction that names the part of each set of objects.

1. 5 hornets in a set of 8 flying insects _____

2. 2 black widow spiders in a set of 5 spiders _____

3. 6 red roses in a set of 12 roses _____

4. 4 colored pencils in a case of 8 pencils _____

5. 10 math books on a shelf with a total of 30 books _____

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13–2

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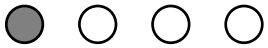
Skills Practice

4NS1.5, 4NS1.7

Parts of a Set

Write the fraction that names the part that is shaded.

1. 

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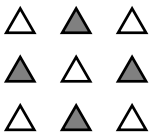
3. 

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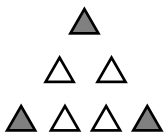
5. 

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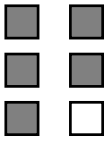
2. 

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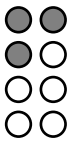
4. 

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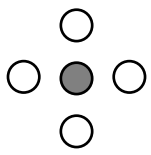
6. 

_____

Draw a picture and then write the fraction that names the part of each set of objects.

7. Six of eleven balloons are blue.

_____

8. Four of seven hats have stars.

_____

9. All of five kittens are smiling.

_____

10. One of four animals is a monkey.

_____

Solve.

11. Five of 12 students are in the school chorus. What part of the students are in the chorus? _____

12. Twenty of 25 students voted for class president. What part of the class did **not** vote for president? _____

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Name _____ Date _____

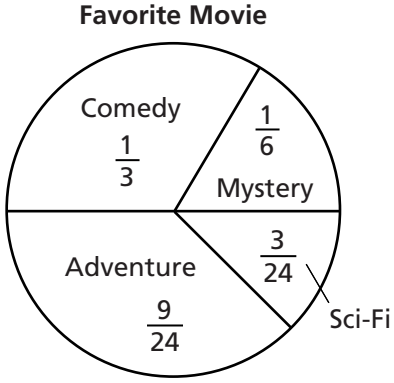
Reteach

4MR2.3, 4NS1.7

Problem-Solving Strategy

Draw a Picture

Len took a survey among his classmates to find which type of movie they liked best. He surveyed 24 students. He showed his results on a circle graph. How many students chose mystery as their favorite type of movie?

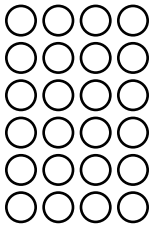


Interpret a Circle Graph

A circle graph shows data as part of a circle. You can interpret the circle graph to solve the problem.

Step 1 What part of this whole chose mystery? What does the circle graph show? The part for Mystery is marked $\frac{1}{6}$.

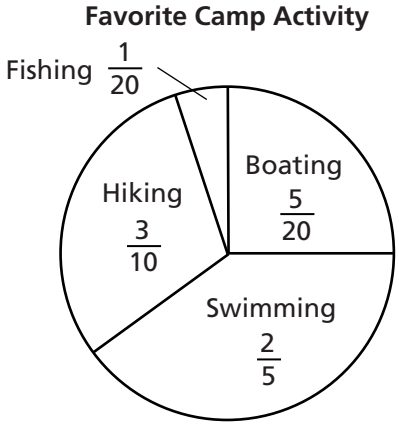
Step 2 Draw 24 circles to show the 24 students surveyed. Since $\frac{1}{6}$ of the students chose mystery, place the circles in 6 equal groups.



There are 4 circles in each group. So, 4 out of 24 students chose mystery.

Solve. Use the *draw a picture* strategy.

Use the graph to answer these questions.



1. If 20 campers were surveyed about their favorite camp activity, how many chose swimming?

_____

2. How many chose boating?

_____

3. How many chose hiking?

_____

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Name _____ Date _____

Reteach *(continued)*

4MR2.3, 4NS1.7

Problem-Solving Strategy

4. Write About It Suppose you did not know the number of campers surveyed about their favorite activity. Would you be able to order the activities from most to least favorite? Tell why or why not.

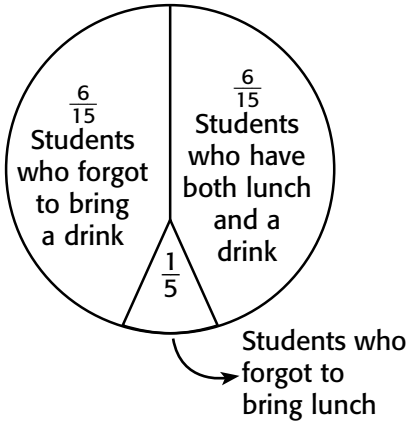
_____

_____

_____

_____

5. There are 15 students in Mr. Black's class. One-fifth of them forgot to bring lunch on the class trip. Six of them forgot to bring a drink. The rest of them have both lunch and a drink. How many students will have to buy either a drink or lunch and a drink?



_____

6. There are 12 glasses in the cabinet. If one fourth of the glasses are red, how many are some other color? _____

7. There are 4 boys. The second oldest is 12. The youngest is 3. The youngest is $\frac{1}{5}$ the age of the oldest. The second oldest is twice the age of the second youngest. How old is each boy?

_____

_____

Use the table to answer question 8.

Name	Time Spent Reading
Joaquin	30 minutes
Benjamin	$\frac{1}{4}$ of an hour
Petrus	$\frac{2}{5}$ of an hour

8. Which of the students spent the most time reading? _____

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Name _____ Date _____

Skills Practice

4MR2.3, 4NS1.7

Problem-Solving Strategy

Solve. Use the *draw a picture* strategy.

1. There are 24 puppies at the pet store. One-third are brown. One-half are black. The rest are some other color, or combination of colors. How many puppies are some other color or combination of colors?

_____

2. Keanu bought his sister 12 tulips for her graduation. $\frac{1}{3}$ of the tulips were yellow. The rest are red. Which color were there the most of? How many tulips were that color?

_____

_____

3. Rosalyn has 24 CDs. One-fourth are classical. One-third are blues. The rest are techno. How many are techno CDs? _____

4. Monica spent $3\frac{1}{2}$ hours swimming in the lake. Cynthia swam in the lake for 190 minutes. Who swam longer? How much longer?

_____

5. Julia has three sizes of fish in her aquarium. The first type of fish is 4 inches long. The second type is $\frac{1}{2}$ as long as the first. The third type is 1 inch longer than the second type. How long are the second and third types of fish?

_____

6. Write a problem that you can solve by drawing a picture. Solve your problem. Then ask a classmate to solve the problem.

_____

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Name _____ Date _____

Reteach

4NS1.5

Equivalent Fractions

Equivalent Fractions

Equivalent fractions name the same part. To find an equivalent fraction, multiply the numerator and denominator by the same number.

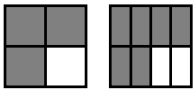
Find fractions equivalent to $\frac{1}{3}$.

$\frac{1 \times 2}{3 \times 2} = \frac{2}{6}$ $\frac{1 \times 3}{3 \times 3} = \frac{3}{9}$

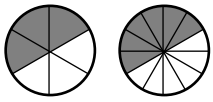
$\frac{1 \times 4}{3 \times 4} = \frac{4}{12}$

So, $\frac{1}{3}$, $\frac{2}{6}$, $\frac{3}{9}$, and $\frac{4}{12}$ are equivalent fractions.

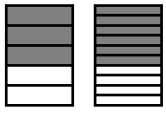
Complete to find equivalent fractions.

1. 

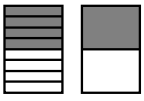
$\frac{3}{4} = \frac{\square}{8}$

2. 

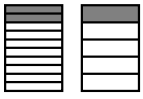
$\frac{3}{6} = \frac{\square}{12}$

3. 

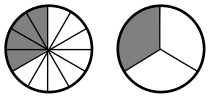
$\frac{3}{5} = \frac{\square}{10}$

4. 

$\frac{4}{8} = \_\_\_\_$

5. 

$\frac{2}{10} = \_\_\_\_$

6. 

$\frac{4}{12} = \_\_\_\_$

7. $\frac{3}{5} = \frac{3 \times \square}{5 \times \square} = \frac{\square}{\square}$

8. $\frac{3}{4} = \frac{3 \times \square}{4 \times \square} = \frac{\square}{\square}$

9. $\frac{3}{6} = \frac{3 \times \square}{6 \times \square} = \frac{\square}{\square}$

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13–4

Name _____ Date _____

Skills Practice

4NS1.5

Equivalent Fractions

Complete to find equivalent fractions.

1. $\frac{4 \div 2}{10 \div \square} = \frac{2}{\square}$

2. $\frac{1 \times \square}{2 \times 8} = \frac{\square}{16}$

3. $\frac{2 \div 2}{8 \div \square} = \frac{1}{\square}$

4. $\frac{4}{5} = \frac{\square}{10}$

5. $\frac{1}{2} = \frac{6}{\square}$

6. $\frac{4}{\square} = \frac{1}{4}$

Name an equivalent fraction for each.

7. $\frac{3}{7} =$ _____

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

9. $\frac{6}{15} =$ _____

10. $\frac{4}{12} =$ _____

11. $\frac{4}{10} =$ _____

12. $\frac{6}{12} =$ _____

13. $\frac{3}{18} =$ _____

14. $\frac{8}{12} =$ _____

15. $\frac{3}{21} =$ _____

16. $\frac{10}{30} =$ _____

17. $\frac{5}{15} =$ _____

18. $\frac{9}{24} =$ _____

ALGEBRA Complete the pattern of equivalent fractions.

19. $\frac{1}{4} = \frac{\square}{8} = \frac{\square}{12} = \frac{\square}{16} = \frac{\square}{20} = \frac{\square}{24}$

20. $\frac{1}{3} = \frac{\square}{6} = \frac{\square}{9} = \frac{\square}{12} = \frac{\square}{15} = \frac{\square}{18}$

Solve.

21. A box contains 6 red pencils and 8 black pencils. What fraction of the pencils are red? _____

22. Paul caught 9 bass and 3 trout. What fraction of the fish were trout? _____

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Name _____ Date _____

Reteach

4NS1.5

Simplest Form

Marty ate 2 of 4 muffins. You can also say that Marty ate $\frac{1}{2}$ of the muffins. $\frac{1}{2}$ is the simplest form of $\frac{2}{4}$. $\frac{1}{2}$ is the simplest form because its numerator and denominator have no common factor other than 1.

You can use division to write $\frac{3}{15}$ in simplest form.

Step 1. Find the common factors.

Factors of 3: 1, 3
Factors of 15: 1, 3, 5, 15

The common factor is 3.

Step 2. Divide by the greatest common factor.

$\frac{3}{15}$ 3 divided by 3 = 1
15 divided by 3 = 5

The simplest form of $\frac{3}{15}$ is $\frac{1}{5}$.

Write each fraction in simplest form. If it is already in simplest form, write *simplest form*.

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

2. $\frac{1}{15}$ _____

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

4. $\frac{9}{12}$ _____

5. $\frac{2}{10}$ _____

6. $\frac{3}{9}$ _____

7. $\frac{2}{8}$ _____

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13–5

Name _____ Date _____

Skills Practice

4NS1.5

Simplest Form

Write each fraction in simplest form. If it is in simplest form, write *simplest form*.

1. $\frac{18}{48}$ _____

2. $\frac{5}{55}$ _____

3. $\frac{9}{15}$ _____

4. $\frac{24}{48}$ _____

5. $\frac{5}{35}$ _____

6. $\frac{8}{64}$ _____

7. $\frac{2}{16}$ _____

8. $\frac{3}{7}$ _____

9. $\frac{8}{40}$ _____

10. $\frac{4}{32}$ _____

ALGEBRA Find the value of *x* to simplify each fraction.

11. $\frac{6}{48} = \frac{x}{8}$ ___

12. $\frac{9}{63} = \frac{x}{7}$ ___

13. $\frac{32}{40} = \frac{4}{x}$ ___

14. $\frac{40}{60} = \frac{2}{x}$ ___

15. $\frac{30}{36} = \frac{5}{x}$ ___

16. $\frac{7}{21} = \frac{x}{3}$ ___

Write as a fraction in simplest form.

17. 6 eggs in a dozen _____

18. 4 days of the week _____

19. 3 months in a year _____

20. vowels in the alphabet _____

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Name _____ Date _____

Reteach

4MR2.2, 4NS1.7

Problem-Solving Investigation

Choose a Strategy

28 students are studying in the library on Thursday afternoon. $\frac{1}{4}$ of them are studying for a history test. 5 students are studying grammar. The rest of the students are studying for a math test. How many students are studying for a math test?

Step 1 Understand	**Make sure you understand the problem.** What do you know? There are _____ students. _____ are studying history. _____ are studying grammar. What do you need to find out? _____ _____
Step 2 Plan • Guess and Check. • Look for a pattern. • Solve a simpler problem. • Use logical reasoning. • Draw a picture.	**Make a plan.** Choose a Strategy. You can use logical reasoning to solve.
Step 3 Solve	**Carry out your plan.** Find out the number that equals $\frac{1}{4}$ of 28. $\frac{1}{4}$ of 28 = _____. 7 students are studying history. 5 are studying grammar. 7 + 5 = _____ 12 students are studying grammar or history. Subtract 12 from 28. _____ students are studying math.

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Name _____ Date _____

Reteach *(continued)*

4MR2.2, 4NS1.7

Problem-Solving Investigation

Step 4 Check	**Is the solution reasonable.** Reread the problem. Does your answer make sense? Did you answer the question?

Use any strategy shown below to solve.

- Guess and check.
- Look for a pattern.
- Solve a simpler problem.
- Use logical reasoning.
- Draw a picture.

Choose the correct answer.

1. A group of 18 students goes to the amusement park. Of these students, $\frac{5}{6}$ go on the bumper cars. How many students go on the bumper cars? _____

2. Amiri has 9 cousins. Of these cousins, $\frac{1}{3}$ live in the same town as Amiri. How many of his cousins live someplace else? _____

3. Angie has $35. She wants to spend three-sevenths of her money on a new pair of jeans. How much money will she have left over?

_____

4. Marge exercises for 45 minutes twice a day. If she keeps up this schedule for 15 days, how many minutes will she exercise in all?

_____

5. Neil has some coins. He has 2 times as many pennies than quarters. He has 4 more nickels than pennies. If he has 4 quarters, how much money does he have? _____

6. Sadie wants to spend 15 minutes every day this week practicing her piano recital piece. Each week until the recital, she wants to double the amount of time she spends playing each day. How many minutes will Sadie spend playing during the entire fourth week?

_____

_____

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Name _____ Date _____

Skills Practice

4MR2.2, 4NS1.7

Problem-Solving Investigation

Use any strategy shown below to solve.

- Guess and check.
- Look for a pattern.
- Solve a simpler problem.
- Use logical reasoning.
- Draw a picture.

Solve.

1. There are 32 rides at an amusement park. Norman goes on $\frac{3}{8}$ of the rides. How many rides does he go on? _____

2. Donna went on 18 rides over 3 hours. If she spent half her time on $\frac{1}{3}$ of the rides, on how many rides did she spend the last half of her time?

_____

3. Ashley puts 45 stamps in an album. She puts the same number of stamps on each page, and 3 stamps on the last page. There are 2 more pages in the album than the number of stamps on each page. How many pages are in the album? How many stamps are on each page? _____

_____

4. The orchestra is composed of 54 students. One third of the students play string instruments. Nine students play percussion. If one more student plays a woodwind instrument than a brass instrument, how many students play each instrument?

_____

5. Molly's uncle is cooking a 7-pound beef roast for dinner. It takes 25 minutes per pound to cook. What time should Molly's uncle begin cooking the roast if he wants to serve dinner at 7 P.M.?

_____

6. Marcus exercises for 45 minutes 4 times a week. During a 10-week period, he had a cold one week and did not get to exercise. How many total minutes did Marcus spend exercising during this 10-week period? _____

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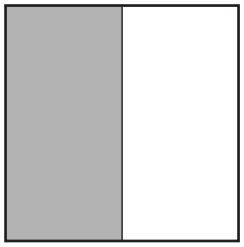
Name _____ Date _____

Reteach

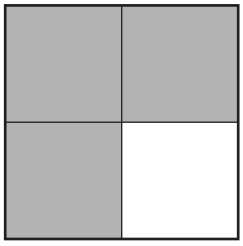
4NS1.9

Compare and Order Fractions

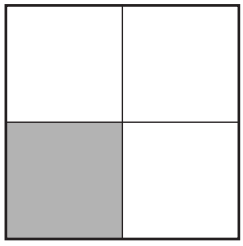
You can use models to compare and order fractions.
Order the numbers from *least* to *greatest*.



$\frac{1}{2}$



$\frac{3}{4}$



$\frac{1}{4}$

Compare the fractions.

$\frac{1}{4} < \frac{1}{2}$ and $\frac{3}{4}$

$\frac{1}{2} < \frac{3}{4}$

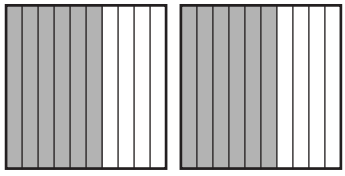
Order the decimals.

Think: $\frac{1}{4} < \frac{1}{2} < \frac{3}{4}$.

The order from *least* to *greatest* is $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$.

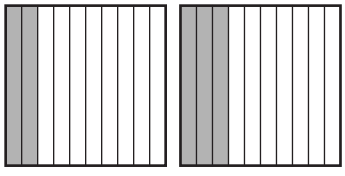
Compare. Write >, <, or =.

1.



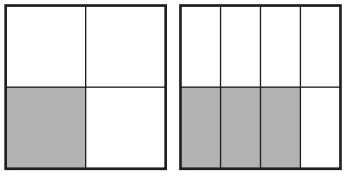
$\frac{6}{10} \bigcirc \frac{6}{10}$

2.



$\frac{2}{10} \bigcirc \frac{3}{10}$

3.



$\frac{1}{4} \bigcirc \frac{3}{8}$

Order from *least* to *greatest*.

4. $\frac{7}{10}, \frac{6}{10}, \frac{4}{5}$ _____

5. $\frac{6}{12}, \frac{3}{4}, \frac{8}{12}$ _____

6. $\frac{5}{6}, \frac{1}{6}, \frac{2}{3}$ _____

7. $\frac{3}{8}, \frac{2}{4}, \frac{1}{8}$ _____

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Name _____ Date _____

Skills Practice

4NS1.9

Compare and Order Fractions

Complete. Write >, <, or =.

1. $\frac{1}{2}$ ◯ $\frac{1}{3}$
2. $\frac{2}{5}$ ◯ $\frac{2}{7}$
3. $\frac{4}{9}$ ◯ $\frac{2}{3}$
4. $\frac{2}{5}$ ◯ $\frac{3}{4}$
5. $\frac{7}{10}$ ◯ $\frac{4}{5}$
6. $\frac{3}{4}$ ◯ $\frac{2}{3}$
7. $\frac{4}{5}$ ◯ $\frac{12}{15}$
8. $\frac{1}{5}$ ◯ $\frac{4}{20}$
9. $\frac{1}{5}$ ◯ $\frac{2}{15}$
10. $\frac{5}{12}$ ◯ $\frac{1}{4}$
11. $\frac{3}{4}$ ◯ $\frac{13}{16}$
12. $\frac{8}{9}$ ◯ $\frac{7}{8}$
13. $\frac{7}{12}$ ◯ $\frac{5}{6}$
14. $\frac{3}{10}$ ◯ $\frac{4}{9}$
15. $\frac{7}{8}$ ◯ $\frac{3}{4}$
16. $\frac{9}{10}$ ◯ $\frac{4}{5}$
17. $\frac{1}{4}$ ◯ $\frac{5}{16}$
18. $\frac{3}{5}$ ◯ $\frac{7}{10}$

Order from *least* to *greatest*.

19. $\frac{1}{4}, \frac{1}{2}, \frac{1}{5}$ _____, _____, _____
20. $\frac{7}{8}, \frac{3}{4}, \frac{3}{8}$ _____, _____, _____
21. $\frac{5}{7}, \frac{1}{7}, \frac{9}{21}$ _____, _____, _____
22. $\frac{4}{9}, \frac{1}{3}, \frac{2}{3}$ _____, _____, _____

Order from *greatest* to *least*.

23. $\frac{1}{2}, \frac{2}{3}, \frac{3}{4}$ _____, _____, _____
24. $\frac{4}{9}, \frac{2}{9}, \frac{5}{9}$ _____, _____, _____
25. $\frac{1}{4}, \frac{3}{4}, \frac{3}{16}$ _____, _____, _____
26. $\frac{5}{6}, \frac{7}{12}, \frac{3}{4}$ _____, _____, _____

Solve.

27. Sandra eats $\frac{1}{6}$ of a cake. Pat eats $\frac{1}{3}$ of the same cake. Who eats more cake? Explain.

_____

28. Karl eats $\frac{1}{2}$ of a pizza. Tim eats $\frac{2}{3}$ of a pizza. Chris eats $\frac{3}{4}$ of a pizza. Order the amounts from *greatest* to *least*.

_____

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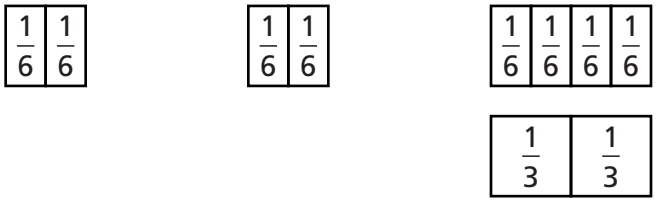
Name _____ Date _____

Reteach

3NS3.2

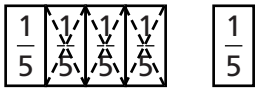
Add and Subtract Like Fractions

You can use fraction models to add fractions with like denominators.



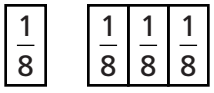
$$\frac{2}{6} + \frac{2}{6} = \frac{4}{6} = \frac{2}{3}$$

You can also use fraction models to subtract fractions with like denominators.

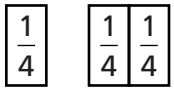


$$\frac{4}{5} - \frac{3}{5} = \frac{1}{5}$$

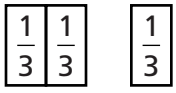
Find each sum or difference. Write in simplest form.

1. 

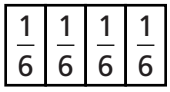
$\frac{1}{8} + \frac{3}{8} =$ ____

2. 

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

3. 

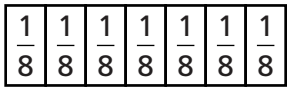
$\frac{2}{3} + \frac{1}{3} =$ ____

4. 

$\frac{4}{6} - \frac{1}{6} =$ _____

5.

$\frac{2}{4} - \frac{1}{4} =$ ____

6. 

$\frac{7}{8} - \frac{5}{8} =$ _____

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Name _____ Date _____

Skills Practice

3NS3.2

Add and Subtract Like Fractions

Find each sum or difference. Write in simplest form.

1. $\frac{7}{8} - \frac{2}{8} =$ ____
2. $\frac{3}{4} + \frac{1}{4} =$ ____
3. $\frac{6}{10} + \frac{1}{10} =$ ____
4. $\frac{8}{9} - \frac{7}{9} =$ ____
5. $\frac{6}{8} - \frac{1}{8} =$ ____
6. $\frac{2}{8} + \frac{3}{8} =$ ____
7. $\frac{5}{10} + \frac{3}{10} =$ ____
8. $\frac{1}{4} + \frac{2}{4} =$ ____
9. $\frac{6}{7} - \frac{5}{7} =$ ____
10. $\frac{8}{9} - \frac{4}{9} =$ ____
11. $\frac{5}{8} - \frac{2}{8} =$ ____
12. $\frac{1}{3} + \frac{1}{3} =$ ____
13. $\frac{1}{2} + \frac{1}{2} =$ ____
14. $\frac{9}{12} - \frac{4}{12} =$ ____
15. $\frac{4}{5} - \frac{2}{5} =$ ____
16. $\frac{5}{7} - \frac{1}{7} =$ ____
17. $\frac{2}{3} - \frac{1}{3} =$ ____
18. $\frac{3}{9} + \frac{4}{9} =$ ____

Solve.

19. Mario works at a snack bar near the beach for 2 hours each Saturday. One Saturday, he started with 30 bottles of juice and sold $\frac{5}{10}$ of the juice in the first hour. When he finished work, he had $\frac{2}{10}$ of the juice left. What fraction did he sell in the second hour?

_____

20. Another Saturday when Mario was working at the snack bar, he and his boss sold all the juice they had. If Mario sold $\frac{7}{12}$ of the juice, what fraction did his boss sell?

_____

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Name _____ Date _____

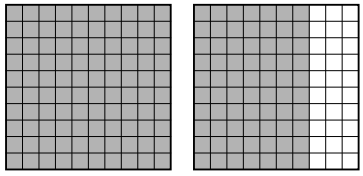
Reteach

4NS1.5, 4NS1.9

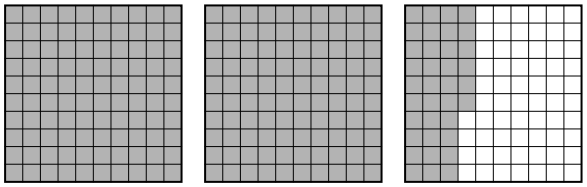
Mixed Numbers

A mixed number is made up of a whole and a part of a whole.
You can use models to help you write mixed numbers.

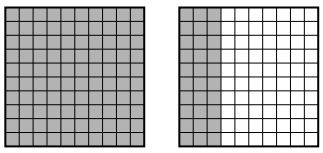
Mixed number: $1\frac{7}{10}$
Read: one and seven tenths

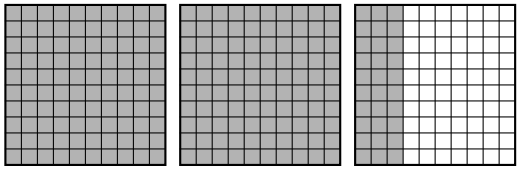


Mixed number: $2\frac{36}{100}$
Read: two and thirty-six hundredths



Write a mixed number for each model.

1.  _____

2.  _____

Write out the mixed number.

3. $1\frac{9}{10}$ _____

4. $3\frac{5}{100}$ _____

5. $2\frac{7}{10}$ _____

6. $1\frac{17}{100}$ _____

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Name _____ Date _____

Skills Practice

4NS1.5, 4NS1.9

Mixed Numbers

Write each as an improper fraction or a mixed number.

1. $\frac{9}{7} =$ _____ **2.** $3\frac{6}{8} =$ _____ **3.** $6\frac{1}{2} =$ _____

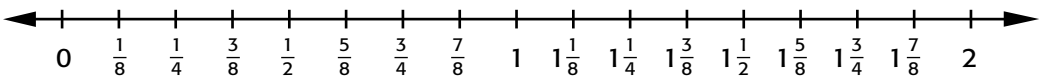
4. $\frac{3}{2} =$ _____ **5.** $3\frac{1}{5} =$ _____ **6.** $3\frac{1}{3} =$ _____

7. $\frac{7}{4} =$ _____ **8.** $1\frac{3}{7} =$ _____ **9.** $\frac{30}{4} =$ _____

10. $\frac{6}{3} =$ _____ **11.** $\frac{24}{10} =$ _____ **12.** $8\frac{3}{4} =$ _____

13. $6\frac{1}{3} =$ _____ **14.** $\frac{21}{5} =$ _____ **15.** $\frac{4}{2} =$ ____

ALGEBRA Use the number line to compare. Write >, <, or =.



16. $1\frac{1}{6}$ ◯ 1 **17.** 2 ◯ $\frac{16}{8}$ **18.** 2 ◯ $1\frac{7}{8}$

19. 1 ◯ $1\frac{5}{8}$ **20.** $1\frac{1}{8}$ ◯ $1\frac{1}{2}$ **21.** $1\frac{3}{4}$ ◯ $1\frac{7}{8}$

Solve.

22. Adam drinks 11 one-fourths of a cup of milk each day. What is this as a mixed number?

_____

23. John read $\frac{1}{2}$ of his book. Bridget read $\frac{1}{3}$ of her book. Who read more of their book? Explain.

_____

24. Jared drank $\frac{7}{4}$ cups of juice. Aida drank $\frac{9}{6}$ cups. Who drank more juice? Explain.

_____

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Name _____ Date _____

Reteach

4NS1.6

Tenths and Hundredths

You can use a model and a place-value chart to read and write decimals. A model and a place-value chart can also help you write a fraction for a decimal.

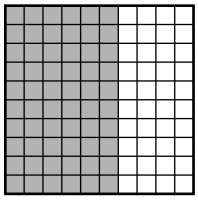
Using Models

Think: $\frac{5}{10} = \frac{1}{2}$

Using a Place-Value Chart

Ones	Tenths	Hundredths
0	5	

Think: $0.5 = \frac{5}{10} = \frac{1}{2}$

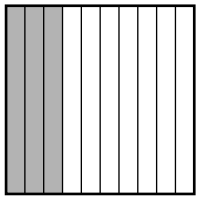


Think: $\frac{60}{100} = \frac{6}{10} = \frac{3}{5}$

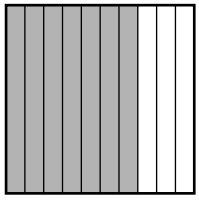
Ones	Tenths	Hundredths
0	6	

Think: $0.60 = \frac{60}{100} = \frac{6}{10} = \frac{3}{5}$

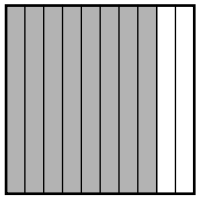
Write a fraction and a decimal for each shaded part. Then write the fraction in simplest form.

1. 

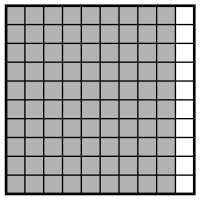
_____

2. 

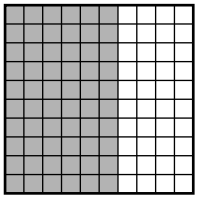
_____

3. 

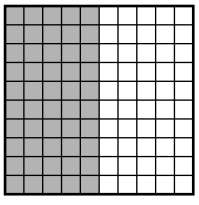
_____

4. 

_____

5. 

_____

6. 

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14–1

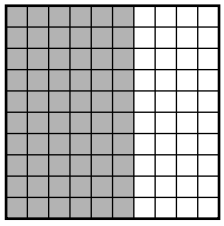
Name _____ Date _____

Skills Practice

4NS1.6

Tenths and Hundredths

Write a fraction and a decimal for each shaded part.

1. 

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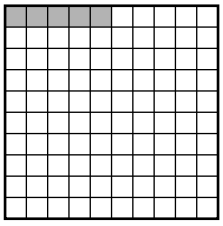
2. 

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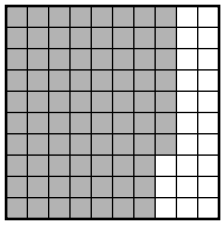
3. 

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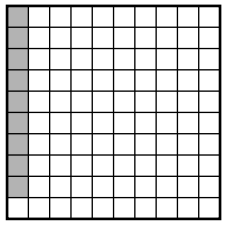
4. 

_____

Write each fraction as a decimal.

5. $\frac{2}{10}$ _____

6. $\frac{7}{10}$ _____

7. $\frac{3}{10}$ _____

8. $\frac{7}{100}$ _____

9. $\frac{1}{100}$ _____

10. $\frac{1}{10}$ _____

11. $\frac{2}{100}$ _____

12. $\frac{96}{100}$ _____

Write as a fraction and as a decimal.

13. two tenths _____

14. fifteen hundredths _____

15. six hundredths _____

16. three tenths _____

17. twenty-one hundredths _____

18. fifty-six hundredths _____

19. five tenths _____

20. seventeen hundredths _____

21. ninety-nine hundredths _____

22. two tenths _____

23. eight tenths _____

24. three hundredths _____

Solve.

25. Peter's house is 0.78 mile from school. Write the number in words.

_____

26. Lora walks for five tenths of an hour. Write the number as a decimal. _____

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Name _____ Date _____

Reteach

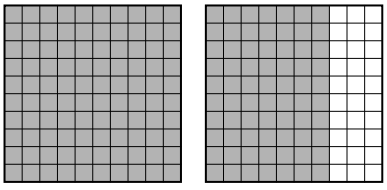
4NS1.6

Relate Mixed Numbers and Decimals

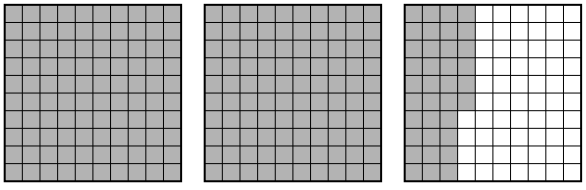
Decimals Greater Than 1

A mixed number is made up of a whole and a part of a whole.
You can use models to help you write mixed numbers as decimals.

Mixed number: $1\frac{7}{10}$
Decimal: 1.7
Read: one and seven tenths

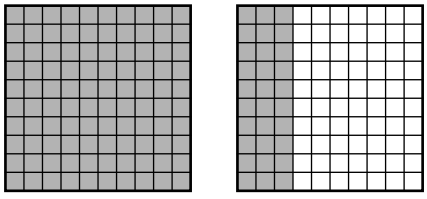


Mixed number: $2\frac{36}{100}$
Decimal: 2.36
Read: two and thirty-six hundredths



Write a mixed number and decimal for each shaded part.

1.



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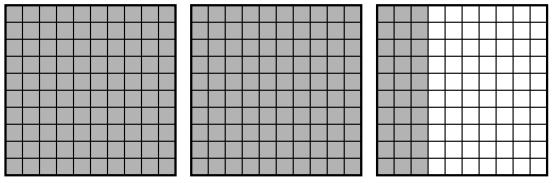
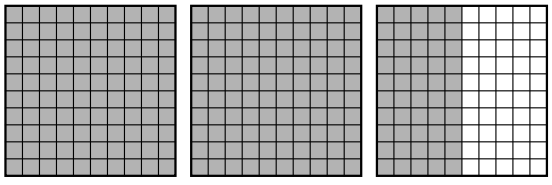
2.



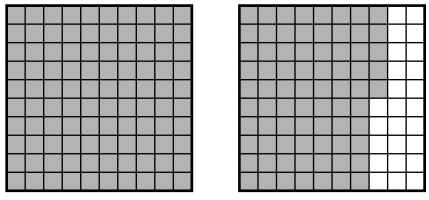
_____

3.



_____

4.



_____

Write each as a decimal.

5. $1\frac{9}{10}$

_____

6. $3\frac{5}{100}$

_____

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14–2

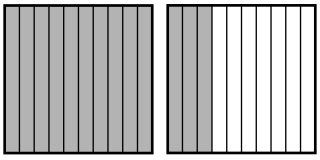
Name _____ Date _____

Skills Practice

4NS1.6

Relate Mixed Numbers and Decimals

Write each as a mixed number and decimal.

1. 

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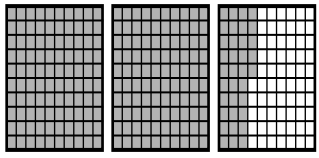
2. 

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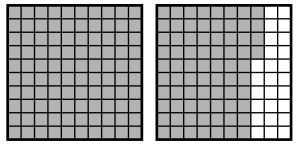
3. 

_____

Write each as decimal.

4. $7\frac{3}{10}$ _____

5. $1\frac{25}{100}$ _____

6. $9\frac{5}{100}$ _____

7. $8\frac{12}{100}$ _____

8. $6\frac{2}{100}$ _____

9. $17\frac{7}{10}$ _____

10. $8\frac{5}{100}$ _____

11. $3\frac{3}{100}$ _____

12. $9\frac{1}{10}$ _____

13. $2\frac{9}{10}$ _____

14. $8\frac{13}{100}$ _____

15. $25\frac{1}{100}$ _____

16. $18\frac{98}{100}$ _____

17. $1\frac{5}{100}$ _____

18. $10\frac{1}{100}$ _____

19. $11\frac{3}{100}$ _____

20. $6\frac{6}{100}$ _____

21. $19\frac{37}{100}$ _____

22. $23\frac{8}{10}$ _____

23. $7\frac{6}{100}$ _____

24. eight and three tenths _____

25. seven and seventy hundredths _____

Solve.

26. Out of 100 pairs of shoes in a sporting goods store, 53 pairs are running shoes. What decimal shows the number of pairs of running shoes? _____

27. Out of 100 backpacks, 2 are red and the rest are green, What decimal shows the number of red backpacks? _____

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Name _____ Date _____

14–3

Reteach

4NS3.0, 4MR2.3

Problem-Solving Strategy: Make a Model

Alicia baked 24 muffins for her class bake sale. They sell for $0.50 for 4. How much money will she make for her class?

Step 1 Understand	**Be sure you understand the problem.** What do you know? • Alicia baked _____ muffins. • Muffins sell for _____ for _____. • You need to find how much her _____ _____
Step 2 Plan	**Make a plan.** Make a model by drawing the muffins in groups of 4 with a $0.50 tag on each group.
Step 3 Solve	**Carry out your plan.** Add up the $0.50 tags for all 6 groups. So, 24 muffins will make $3.00 for the class.
Step 4 Check	**Is the solution reasonable?** Reread the problem. How can you check your answer? _____

Solve using the *make a model* strategy.

1. Isabel makes and sells pairs of earrings. She uses 5 beads for each earring and charges $0.25 per bead. How much will 10 pairs of earrings sell for? _____

2. There are 2 elephants in a circus act. In their routines, each act uses 2 other animals. How many animals perform altogether?
_____

3. Mrs. Lee decides to make apple pies. If there are 5 apples in each pie and she makes 4 pies, how many apples will she use altogether?
_____

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Name _____ Date _____

Reteach *(continued)*

4NS3.0, 4MR2.3

Problem-Solving Strategy: Make a Model

4. Elizabeth has 12 flowerpots. One half of the flowerpots have roses in them. One third of the flowerpots have sunflowers in them. The rest of the flowerpots have daisies in them. How many flowerpots have sunflowers in them? How many flowerpots have daisies in them?

_____

_____

5. Rachel opened 6 packages of paper for her scrapbook. Each package of paper had 20 sheets of blue paper and half as many sheets of green paper. How many total sheets of paper were there?

_____

_____

6. Brianna rollerbladed 2 miles. Then she returned home to get her friend. They rollerbladed together for 3 miles. How far did Brianna go altogether?

_____

7. In the school play, there are 12 props in the first act. There are 33 different props in the second act and 23 different props in the third act. How many different props are there in all?

_____

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Name _____ Date _____

Skills Practice

4NS3.0, 4MR2.3

Problem-Solving Strategy: Make a Model

Solve. Use the *make a model strategy.*

1. There are 4 jars of fingerpaint in a box. Each child will get 2 jars to use to paint. If there is a class of 16 children, how many boxes of paint will they need?

_____

2. Ron walked to the store which was 8 blocks away. Then he walked 6 blocks to the park. He had to stop back at the store because he forgot to get something, and then he went home. How many blocks did he walk?

_____

3. There were 3 cats at the pet shop. The first cat had 6 kittens. The other two cats each had 8 kittens. What was the total number of cats in the pet shop after the kittens were born?

_____

4. If you have a box of 96 crayons that you want to share with 11 classmates, how many crayons will each classmate receive? Hint: Don't forget to keep crayons for yourself.

_____

5. Write a problem that can be solved by making a model. Then, ask a classmate to solve the problem.

_____

_____

_____

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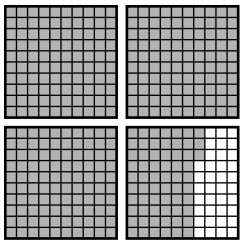
Name _____ Date _____

Reteach

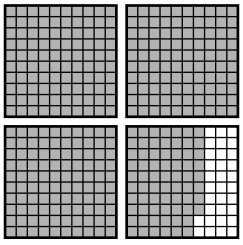
4NS1.2, 4NS1.9

Compare and Order Decimals

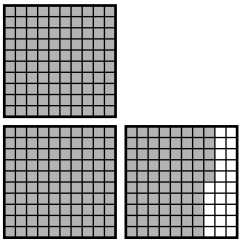
You can use models to compare and order decimals.
Order the numbers from *least* to *greatest*.



3.63



3.68

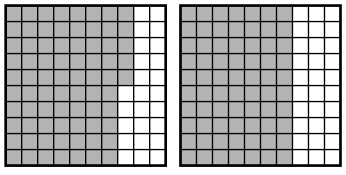


2.75

Compare the decimals.	**Order the decimals.**
Since $2 < 3$, $2.75 < 3.63$ and 3.68 Since $\frac{63}{100} < \frac{68}{100}$, $3.63 < 3.68$.	Think: $2.75 < 3.63 < 3.68$. The order from *least* to *greatest* is 2.75 , 3.63 , 3.68.

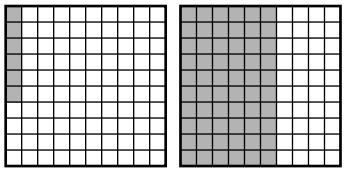
Compare. Write >, <, or =.

1.



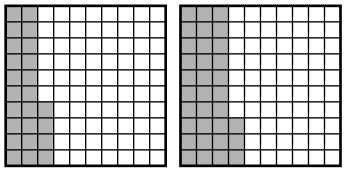
0.75 ◯ 0.7

3.



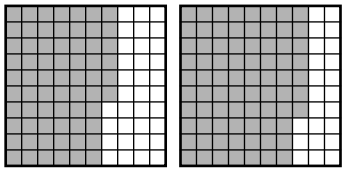
0.06 ◯ 0.60

5.



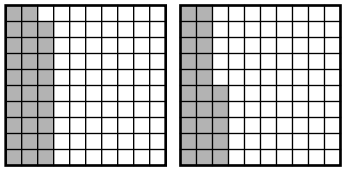
0.24 ◯ 0.33

2.



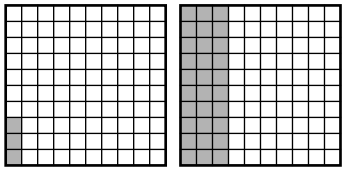
0.66 ◯ 0.77

4.



0.29 ◯ 0.25

6.



0.03 ◯ 0.30

Order from *least* to *greatest*.

7. 0.75, 0.66, 0.7

_____

8. 0.06, 0.77, 0.60

_____

9. 0.29, 0.25, 0.24

_____

10. 0.33, 0.03, 0.30

_____

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14–4

Name _____ Date _____

Skills Practice

4NS1.2, 4NS1.9

Compare and Order Decimals

Compare. Write >, <, or =.

1. 0.2 ◯ 0.02

2. 0.7 ◯ 0.70

3. 1.78 ◯ 1.87

4. 12.16 ◯ 12.16

5. 0.10 ◯ 0.16

6. 5.11 ◯ 5.10

7. 11.99 ◯ 12.1

8. 11.1 ◯ 10.1

9. 9.06 ◯ 9.16

10. 6.5 ◯ 5.9

11. 2.1 ◯ 0.2

12. 10.3 ◯ 10.30

13. 16.75 ◯ 16.57

14. 14.44 ◯ 14.54

15. 18.01 ◯ 18.11

16. 9.1 ◯ 9.09

17. 21.12 ◯ 22.13

18. 16.06 ◯ 16.6

Order from *greatest* to *least*.

19. 1.78, 1.08, 1.87

_____

20. 0.88, 0.08, 0.98

_____

21. 1.11, 1.21, 0.22

_____

22. 10.02, 9.9, 10.12

_____

Order from *least* to *greatest*.

23. 0.01, 0.1, 1.00

_____

24. 2.22, 2.02, 2.12

_____

25. 6.07, 5.99, 6.17

_____

26. 1.06, 1.16, 0.99

_____

Solve.

27. On Monday Ken ran 100 meters in 11.2 seconds. On Tuesday he ran 100 meters in 10.9 seconds. On which day did Ken run faster?

_____

28. Jadwin Bridge is 1.6 kilometers long. Seely Bridge is 1.06 kilometers long. Which bridge is longer?

_____

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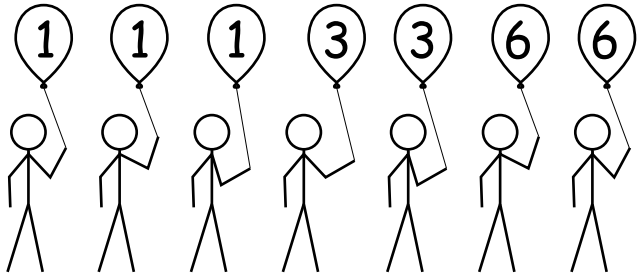
Name _____ Date _____

Reteach

4MR1.1, 4NS3.0

Problem-Solving Investigation: *Choose a Strategy*

Kyle bought birthday balloons for his brother, Jin. Their friends, Steve, Ryan, and Dan, each held one balloon, and Kyle's mom and dad both held 3 balloons. Kyle and Jin had twice as many balloons as their mom and dad. How many balloons did they have altogether?

Step 1 Understand	**Be sure you understand the problem.** What do you know? • Kyle bought balloons for his brother. • Their 3 friends each held _____ balloon. • Mom and Dad each held _____ balloons. • Kyle and Jin each held _____ balloons.
Step 2 Plan • Use logical reasoning • Solve a simpler problem • Make a model • Draw a picture • Look for a pattern	**Make a plan.** Choose a strategy. You may draw a picture. Draw each person with the number of balloons they were holding. You can also use a four-step plan.
Step 3 Solve	**Carry out your plan.** Plan 1 Draw a picture. Draw the 7 people at the party with their balloons. Add them up.  1 + 1 + 1 + 3 + 3 + 6 + 6 = 21

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Name _____ Date _____

Reteach *(continued)*

4MR1.1, 4NS3.0

Problem-Solving Investigation: *Choose a Strategy*

	Plan 2 Use the four step plan. Decide what facts you know. Plan what you will do and in what order. Use your plan to solve the problem. Then check your solution to make sure it makes sense.
Step 4 Check	Is the solution reasonable? Reread the problem. How can you check your answer? _____ , _____

Use any strategy shown below to solve.

- Use logical reasoning
- Solve a simpler problem
- Make a model
- Draw a picture
- Look for a pattern

1. Jamie had an aquarium with 8 fish. He had half as many plants, twice as many small rocks, and a quarter the amount of filters. How many plants, rocks, and filters did he have?

_____

2. Each morning, Joanna jogs with her dog. They jog for 2 miles and walk for 1 mile. How many miles do they walk in 1 week? How many miles do they jog in 10 days?

_____

3. Julio has 4 cats and 2 dogs. How many total legs do his animals have? How many ears altogether?

_____

4. Martina ran the 100 meter dash in 14.8 seconds and her friend Sandra ran it in 14.2 seconds. Who won? How much time did she win by?

_____

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Name _____ Date _____

Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Investigation: Choose a Strategy

Use any strategy shown below to solve.

- Use logical reasoning
- Solve a simpler problem
- Make a model
- Draw a picture
- Look for a pattern

1. Carlos had a 55 gallon aquarium with 18 fish. He had half as many plants, twice as many small rocks, and one-sixth the amount of filters. How many plants, rocks, and filters did he have?

_____

2. Each morning, Mario walks his pet dog. They walk for 3 miles. How many miles do they walk in 1 week? How many miles do they walk in 10 days?

_____

3. Joanna has 10 kinds of nail polish. If she uses 2 kinds in a week, how many weeks will it take to use all of them?

_____

4. A building is 45 stories high. Every fifth story is residential and the rest of the building is offices. Laura lives on the third story that is residential. What number will she press on the elevator to go to her home if the ground level is floor 1? _____

5. You saved your money from gifts and allowance and you were able to buy a scooter for $99.39 and pair of shoes for $24.25. If you still have $16.98 left, how much money did you start out with?

_____

6. Ron's mother bought a dozen flowers for $19.99. Alfred's mother bought 2 dozen of the same flowers for $38.98. Whose mother got the better deal?

_____

7. What numbers come next in this pattern? What is the rule? 4, 2, 8, 6, 12, 10, _____, _____, _____.

_____

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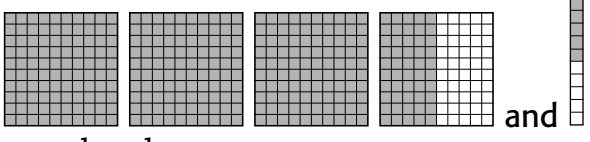
Name _____ Date _____

Reteach

4NS1.7, 4NS1.6

Fraction and Decimal Equivalents

Marsha runs in track and her workout includes a 3.5 mile run and a 0.5 mile warm down. What is the fraction equivalent for Marsha's workout?

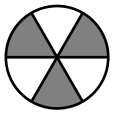
Step 1 Understand	**Be sure you understand the problem.** What do you know? • Marsha runs _____ miles for her workout. • Her warm down is _____ miles. • You need to find her workout in a _____
Step 2 Plan	**Make a plan** To find the fraction equivalent to a decimal you can use a number line or model to show the equivalents. Write the fraction with a 10 or 100 denominator.
Step 3 Solve	**Carry out your plan.** Change the decimals 3.5 and 0.5 to fractions. $3\frac{50}{100}$ or $3\frac{5}{10}$ and $\frac{50}{100}$ or $\frac{5}{10}$ or $\frac{1}{2}$  and So, $3\frac{1}{2} + \frac{1}{2} = 4$
Step 4 Check	Is the solution reasonable? Reread the problem and check your answer.

Write a fraction and decimal to describe the shaded part of each model.

1.

_____

_____

2. 

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14–6

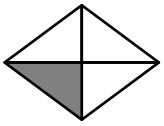
Name _____ Date _____

Skills Practice

4NS1.7, 4NS1.6

Fraction and Decimal Equivalents

Write a fraction and decimal to describe the shaded part of each model.

1. 

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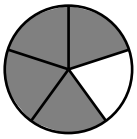
3. 

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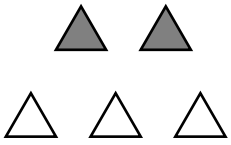
5. 

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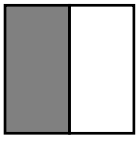
2.

_____

_____

4. 

_____

_____

Write each fraction as a decimal.

6. $\frac{36}{100}$

_____

8. $\frac{96}{100}$

_____

10. $\frac{1}{10}$

_____

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

_____

9. $\frac{18}{20}$

_____

11. Lauren collects frog figures. She has 4 orange frogs and 21 green ones. Write the proportion of the orange frogs out of the total frogs and the green frogs out of the total frogs as a fraction and a decimal.

_____

_____

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Name _____ Date _____

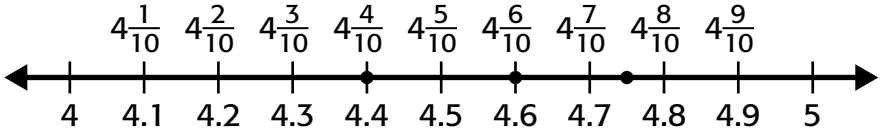
Reteach

4NS1.9, 4NS1.2

Decimals, Fractions, and Mixed Numbers

To compare fractions and decimals, you can write the fractions as decimals and then compare.

You can use a number line to compare fractions and decimals.



Place a point on the line where each decimal or fraction belongs. Now you can see whether a decimal or fraction is equal to, greater than, or less than another number.

You can also use a place-value chart to compare numbers: $4\frac{1}{4}$, $4\frac{4}{5}$, 4.6, 4.5.

First, convert fractions to decimals, Example: $4\frac{1}{4} = 4.25$
Line up the decimals points.
Compare the tenths and hundredths place of each number.

Ones	Tenths	Hundredths
4	2	5
4	8	0
4	6	0
4	5	0

From least to greatest: $4\frac{1}{4}$, 4.5, 4.6, $4\frac{4}{5}$.

Compare. Write >, <, or =.

1. 2.5 ◯ $2\frac{2}{3}$

2. $7\frac{7}{8}$ ◯ 7.7

3. 9.03 ◯ 9.3

4. $6\frac{1}{10}$ ◯ 6.1

5. $\frac{5}{4}$ ◯ $1\frac{1}{4}$

6. 13.2 ◯ $13\frac{2}{5}$

Order from *greatest* to *least*.

7. $\frac{3}{4}$, 0.5, $\frac{1}{4}$, 0.3 _____

8. $5\frac{2}{5}$, 5.3, 6.0, $5\frac{2}{4}$ _____

9. $10\frac{10}{100}$, 10.15, $10\frac{5}{100}$, 10.0 _____

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14–7

Name _____ Date _____

Skills Practice

4NS1.9, 4NS1.2

Decimals, Fractions, and Mixed Numbers

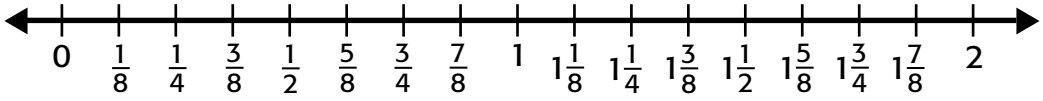
Compare. Write >, <, =.

1. $4\frac{4}{100}$ ◯ $4\frac{40}{100}$
2. 3.25 ◯ $3\frac{1}{4}$
3. $\frac{4}{5}$ ◯ 0.8
4. 5.35 ◯ $5\frac{3}{5}$
5. 6.48 ◯ $6\frac{4}{10}$
6. 0.01 ◯ $\frac{1}{10}$

Order from greatest to least.

7. 0.4, $\frac{6}{100}$, $\frac{1}{5}$, 0.35 _____
8. $25\frac{1}{4}$, 25.5, $25\frac{1}{10}$, $25\frac{1}{5}$ _____
9. $7\frac{7}{10}$, 8.0, 7.65, $7\frac{4}{5}$ _____

ALGEBRA Use the number line to compare. Write >, <, or =.



10. $1\frac{1}{6}$ ◯ $1\frac{1}{8}$
11. 1 ◯ $\frac{8}{8}$
12. 2 ◯ $\frac{17}{8}$

Solve.

13. Ben measures $\frac{10}{4}$ cups of water. What is this as a mixed number? _____

14. Claudia ran 4.3 miles on Monday. On Tuesday she ran $4\frac{1}{2}$ miles. On which day did Claudia run a longer distance? Explain.

_____

15. Jared drank $\frac{7}{4}$ cups of juice. Aida drank $\frac{9}{6}$ cups. Who drank more juice? Explain. _____

16. Mary worked $8\frac{1}{2}$ hours on Monday and $8\frac{3}{5}$ hours on Tuesday. On which day did she work longer? Explain.

_____

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Name _____ Date _____

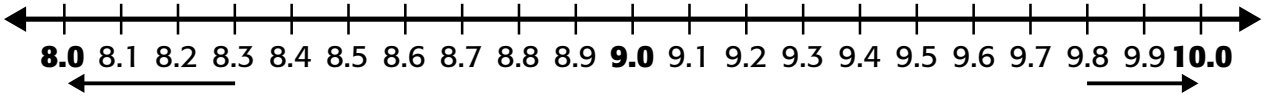
Reteach

4NS2.2

Round Decimals

You can use a number line to help you round decimals.

To round a decimal to the nearest whole number, look at the digit in the tenths place. If the tenths digit is 5 or greater, round up to the nearest one. If the tenths digit is less than 5, round down to the nearest one.



Round 8.3 to the nearest whole number.
Think: 8.3 is closer to 8 than 9.
So, 8.3 rounds down to 8.

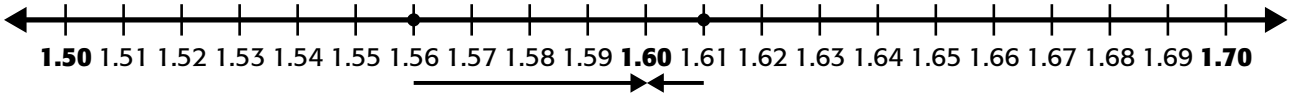
Round 9.8 to the nearest whole number.
Think: 9.8 is closer to 10 than 9.
So, 9.8 rounds up to 10.

Round to the nearest *whole number*.
Use the number line above to help you.

1. 8.6 _____ **2.** 8.2 _____ **3.** 9.8 _____ **4.** 9.5 _____

5. 9.1 _____ **6.** 9.3 _____ **7.** 8.4 _____ **8.** 8.7 _____

To round to the nearest tenth, look at the digit in the hundredths place. If the hundredths digit is 5 or greater, round up to the nearest tenth. If the hundredths digit is less than 5, round down to the nearest tenth.



Think: 1.56 is closer to 1.60 than 1.50.
So, 1.56 rounds up to 1.60.

Think: 1.61 is closer to 1.60 than 1.70.
So, 1.61 rounds down to 1.60.

Round to the nearest *tenth*.
Use the number line above to help you.

9. 1.52 _____ **10.** 1.59 _____ **11.** 1.55 _____ **12.** 1.51 _____

13. 1.64 _____ **14.** 1.63 _____ **15.** 1.68 _____ **16.** 1.66 _____

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15–1

Name _____ Date _____

Skills Practice

4NS2.2

Round Decimals

Round to the nearest *whole number.*

1. 9.47 _____	**2.** 1.1 _____	**3.** 13.61 _____	**4.** 93.56 _____
5. 2.8 _____	**6.** 3.51 _____	**7.** 25.09 _____	**8.** 88.48 _____
9. 6.01 _____	**10.** 4.62 _____	**11.** 37.8 _____	**12.** 19.71 _____
13. 18.03 _____	**14.** 59.26 _____	**15.** 33.52 _____	**16.** 91.73 _____

Round to the nearest *tenth.*

17. 7.24 _____	**18.** 1.27 _____	**19.** 12.55 _____	**20.** 36.97 _____
21. 9.43 _____	**22.** 3.98 _____	**23.** 64.93 _____	**24.** 53.84 _____
25. 6.58 _____	**26.** 7.24 _____	**27.** 47.96 _____	**28.** 19.46 _____
29. 14.06 _____	**30.** 42.65 _____	**31.** 78.84 _____	**32.** 85.76 _____

Solve.

33. A vitamin pill weighs 2.34 grams. What is its mass to the nearest tenth of a gram?

_____

34. Jason weighs 152.6 pounds. What is his weight to the nearest pound?

_____

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Name _____ Date _____

Reteach

4NS2.1

Estimate Decimal Sums and Differences

To estimate the sums of decimals, round each decimal to the nearest whole number. Then add the rounded numbers.

Estimate $22.52 + 4.49$.	Estimate $\$6.25 - \$4.79$.
Round each number to the nearest whole number. $23 + 4$	Round each number to the nearest dollar. $\$6.00 - \$5.00$
Add. $23 + 4 = 27$	Subtract. $\$6.00 - \$5.00 = \$1.00$
So $22.52 + 4.49$ is about 27.	So $\$6.25 - \$4.79$ is about \$1.00.

Estimate. Round to the nearest whole number. Show how you rounded.

1. $\$5.89 + \$4.29$ _____

2. $17.3 + 5.67$ _____

3. $8.48 + 3.07$ _____

4. $6.7 + 3.2$ _____

5. $\$15.95 + \$2.59$ _____

6. $25.7 + 8.9$ _____

7. $14.25 - 7.84$ _____

8. $10.97 - 7.4$ _____

9. $3.62 - 1.87$ _____

10. $\$10.25 - \$3.45$ _____

11. $\$10.54 - \$7.81$ _____

12. $43.7 - 20.48$ _____

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Name _____ Date _____

15–2

Skills Practice

4NS2.1

Estimate Decimal Sums and Differences

Estimate. Round to the nearest whole number.

1. 5.1 + 9.4 _____ **2.** 7.45 + 8.56 _____ **3.** 26.14 − 12.95 _____

4. 6.7 + 8.4 _____ **5.** 4.32 + 7.59 _____ **6.** $34.95 − $12.20 _____

7. 1.9 + 3.8 ___ **8.** 8.57 − 3.52 ___ **9.** 25.60 − 11.55 _____

10. $6.35 + $5.95 _____ **11.** 17.26 − 13.78 ___ **12.** 47.15 − 17.11 _____

13. 19.76 + 9.55 _____ **14.** 77.36 − 15.93 _____

15. $10.25 + $3.25 _____ **16.** $16.12 − $12.80 _____

17. 19.67 + 9.94 _____ **18.** 94.32 − 22.80 _____

19. 3.75 + 5.24 _____ 20. $54.10 − $34.89 _____

21. 4.16 + 9.66 _____ **22.** 13.4 − 6.79 _____

23. 2.93 + 6.74 _____ **24.** 47.65 − 17.93 _____

Estimate by rounding to the nearest whole number. Then compare. Use >, <, or =.

25. 3.7 + 2.5 ◯ 1.9 + 4.2 **30.** 7.2 − 4.5 ◯ 6.8 − 5.8

26. 4.9 + 1.6 ◯ 5.1 + 3.1 **31.** 5.2 − 2.3 ◯ 9.7 − 7.9

27. 7.6 − 2.2 ◯ 5.6 − 1.3 **32.** 7.7 + 7.2 ◯ 8.1 + 9.1

28. 8.3 − 6.6 ◯ 4.2 − 2.3 **33.** 8.7 + 9.6 ◯ 9.1 + 8.6

29. 5.5 + 6.3 ◯ 8.2 + 5.2 **34.** 1.6 + 2.1 ◯ 1.7 + 2.0

Solve.

35. The odometer on a new car shows 17.7 miles. Sean drives the car 12.9 miles. About how many miles does the odometer show now?

_____

36. Nancy ran a total of 5.7 miles today. She ran 3.2 miles this morning. About how many miles did Nancy run this afternoon?

_____

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Name _____ Date _____

Reteach

4MR1.1, 4NS3.1

Problem-Solving Strategy

Work Backward

Paul had $8.25 more yesterday than he does today. Yesterday he had $12. How much does Paul have today?

Step 1. Understand	**Be sure you understand the problem.** Read carefully. • What do you know? Paul had _____ more yesterday than he does today. Yesterday Paul had _____. • What do you need to find? You need to find how much _____.
Step 2. Plan	**Make a plan.** Choose a strategy. You can work backward to solve the problem. Start with how much Paul had yesterday. Then work backward to find how much he has today.

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Name _____ Date _____

Reteach *(continued)*

4MR1.1, 4NS3.1

Problem-Solving Strategy

Step 3. Solve	**Carry out your plan.** You know Paul had _____ yesterday. You know Paul had _____ more yesterday than he does today. Think: Paul had $12 yesterday, which is $8.25 more than he has today. Subtract to find how much Paul has today. $12.00 − $8.25 = $3.75 Paul has _____ today.
Step 4. Check	**Is the solution reasonable?** Reread the problem. Work forward to check your answer. Start with your answer. Add $8.25. Did you end with $12? _____ What other strategies could you use to solve the problem? _____

Solve. Use the *work backward* strategy.

1. Sally had $10 less yesterday than she does today. Yesterday she had $13.30. How much does Sally have today?

_____

2. Lin and Roy walk to the library. Lin walks twice as far as Roy. Roy walks 4 miles. How far does Lin walk?

_____

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Name _____ Date _____

Skills Practice

4MR1.1, 4NS3.1

Problem-Solving Strategy

Solve. Use the *work backward* strategy.

1. Karen had $7 less yesterday than she does today. Yesterday she had $18. How much does Karen have today? _____

2. T.J. had 46 basketball cards. Then he bought some more basketball cards at the store. Now T.J. has 58 basketball cards. How many cards did T.J. buy? _____

3. Mr. Thomas and Ms. Hernandez drive to the same movie theater. Mr. Thomas drives twice as far as Ms. Hernandez. Ms. Hernandez drives 13 miles. How far does Mr. Thomas drive? _____

4. Kate has 3 times as many California quarters as Ohio quarters. She has 36 California quarters. How many Ohio quarters does Kate have? _____

Solve. Use any strategy.

5. Mr. Johnson has $327.50. He spends $26.50 on gasoline. How much money does Mr. Johnson have left? _____

   Strategy: _____

6. Walking a mile burns about 110 calories. About how many calories would you burn if you walked 4 miles?

   _____

   Strategy: _____

7. Write a problem that can be solved by working backward. Share it with others.

   _____

   _____

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Name _____ Date _____

Reteach

4NS2.1, 4MR2.1

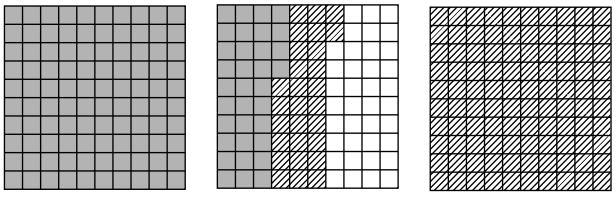
Add Decimals

You can use models to help you add decimals.

Find 1.34 + 1.28.

One Way: Using Models

Color 1.34 dark gray. Color 1.28 with stripes. Count the number of squares you shaded.



There are 2 whole grids shaded and 62 out of 100 shaded in the third grid.

So, 1.34 + 1.28 = 2.62.

Another Way: Using Paper and Pencil

Add each place. Regroup if needed.

$$\begin{array}{r} {\scriptstyle 1} \\ 1.34 \\ +\ 1.28 \\ \hline 2.62 \end{array}$$

Find each sum. Use the space below to draw 10-by-10 grids to help you if needed.

1. 1.7 + 1.4 = _____

2. 1.24 + 0.38 = _____

3. 0.5 + 0.8 = _____

4. 1.5 + 1.35 = _____

5. 2.25 + 1.03 = _____

6. 1.52 + 0.35 = _____

7. 0.9 + 0.8 = _____

8. 0.6 + 1.85 = _____

9. 0.85 + 0.15 = _____

10. 0.8 + 0.6 = _____

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15–4

Name _____ Date _____

Skills Practice

4NS2.1, 4MR2.1

Add Decimals

Add.

1. 0.36 + 0.25

2. 0.69 + 9.26

3. 6.37 + 5.60

4. 0.29 + 0.44

5. 23.60 + 5.40

6. 2.87 + 8.12

7. 0.60 + 0.70

8. 32.75 + 12.30

9. 36.21 + 9.75

10. 1.67 + 1.45

11. 25.97 + 0.12

12. 12.94 + 7.26

13. 2.67 + 1.38

14. 12.32 + 1.74

15. 0.25 + 12.25

16. 12.5 + 11.35 = _____ **17.** 2.7 + 2.73 = _____ **18.** 3.36 + 5.03 = _____

Solve.

19. Angelo spends $13.67 at the grocery store and $7.42 at the video store. How much does he spend?

_____

20. Lora spends $2.64 on stamps and $1.39 on envelopes. How much does she spend?

_____

21. Ben buys packing tape for $2.97 and boxes for $6.99. How much does he spend?

_____

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Name _____ Date _____

15–5 Reteach

4MR1.1, 4SDAP1.1

Problem-Solving Investigation

There are many ways to solve most math problems. You will decide which strategy works best for you when you read the problems.

Problem-Solving Strategies

- Solve a simpler problem
- Use logical reasoning
- Draw a picture
- Make a model
- Work backward

James, Abigail, and Chris each play soccer. James's jersey is not blue. Abigail's jersey is not blue or black. Neither of Chris's two jerseys are green. The color of James's jersey does not begin with *r* or *g*.

<table>
<tr><td>Understand</td><td>You know that James has one jersey that is not blue, and the name of the color does not begin with r or g. Abigail has one jersey that is not blue or black. Chris has two jerseys that are not green. You need to find out which color jersey belongs to each person.</td></tr>
<tr><td>Plan</td><td>Choose a strategy.
You have pieces of information that can help you figure out the correct answer. You will use logical reasoning to figure out the answer.</td></tr>
<tr><td>Solve</td><td>Use the pieces of information you have to help you figure out which color jersey each player has. Write yes or no for each piece of information you have. Once you have a yes in a square, you can fill in the rest of the row and column with nos (except for Chris, who has two jerseys):
<table>
<tr><th></th><th>red</th><th>blue</th><th>black</th><th>green</th></tr>
<tr><td>James</td><td>no</td><td>no</td><td>yes</td><td>no</td></tr>
<tr><td>Abigail</td><td>no</td><td>no</td><td>no</td><td>yes</td></tr>
<tr><td>Chris</td><td>yes</td><td>yes</td><td>no</td><td>no</td></tr>
</table>
</td></tr>
<tr><td>Check</td><td>Check to see if you are correct:
The solution matches the facts given in the problem. So, you know your answer is correct.</td></tr>
</table>

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15–5

Name _____ Date _____

Reteach *(continued)*

4MR1.1, 4SDAP1.1

Problem-Solving Investigation

Use any strategy shown below to solve.
Tell what strategy you used.

- Solve a simpler problem
- Make a model
- Use logical reasoning
- Work backward
- Draw a picture

1. The R train comes every 42 minutes. The next time the R train will arrive is 10:23 A.M. What time did the R train last come?

_____

Strategy: _____

_____

2. The number of acorns on the sidewalk doubles every 6 hours. After 1 day, there are 96 acorns. How many were there at the beginning of the day? _____

Strategy: _____

3. Tim bought 4 books for $16. If each book costs the same amount, how much would 15 books cost?

_____

Strategy: _____

4. Two numbers have a product of 48 and a difference of 8.

What are these two numbers? _____

Strategy: _____

5. Ashley takes care of her neighbor's pets for $3.50 a day. How many days would she need to work to earn $31.50? _____

Strategy: _____

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Name _____ Date _____

15–5 Skills Practice

4MR1.1, 4SDAP1.1

Problem-Solving Investigation

Use any strategy shown below to solve. Tell what strategy you used.

- Solve a simpler problem
- Make a model
- Use logical reasoning
- Work backward
- Draw a picture

1. Kevin's favorite radio station plays his favorite song every 56 minutes. If he heard it at 4:12 P.M., when will the station play the song again? _____

Strategy: _____

2. Haley spent $6.45 at lunch. Then she repaid her brother $4.27. Now she has $9.18. How much money did she start with?

_____

Strategy: _____

3. Two numbers have a product of 56 and a difference of 10.

What are these two numbers? _____

Strategy:

_____

4. Hannah and Madison have a leaf collection. Hannah collects three times as many leaves as Madison each day. After 4 days, Madison has 48 leaves. How many leaves per day does Hannah collect?

_____

Strategy: _____

5. William, Joe, and Nicole each like running, biking, or swimming. Nicole does not like to wear shoes while exercising. William does not like wearing a helmet. Which sport does each friend like?

_____

_____

Strategy:

_____

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Name _____ Date _____

Reteach

4NS2.1, 4MR2.1

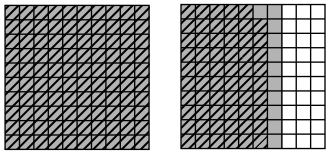
Subtract Decimals

You can use models to help you subtract decimals.

Find 1.7 − 1.59.

Using Models

Color 1.7. Cross out 1.59.
Count the number of squares not crossed out.



Using Paper and Pencil

Subtract each place.
Regroup if necessary.

$$\begin{array}{r} {}^{6}1\,{}^{10}0 \\ 1.70 \\ -\ 1.59 \\ \hline 0.11 \end{array}$$

Write zero as a place holder.

Subtract. Use the space below to draw 10-by-10 grids to help you.

1. 1.8 − 1.2 = _____

2. 0.9 − 0.5 = _____

3. 1.25 − 0.18 = _____

4. 0.8 − 0.25 = _____

5. 1.35 − 1.08 = _____

6. 1.7 − 0.48 = _____

7. 0.5 − 0.05 = _____

8. 1.65 − 1.3 = _____

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15–6

Name _____ Date _____

Skills Practice

4NS2.1, 4MR2.1

Subtract Decimals

Subtract. Check your answer.

1. 0.7 − 0.4	**6.** 0.43 − 0.26	**11.** 9.00 − 0.09	**16.** 5.34 − 4.67
2. 6.3 − 0.7	**7.** 0.44 − 0.22	**12.** 7.17 − 2.70	**17.** 1.67 − 0.50
3. 9.1 − 2.3	**8.** 7.04 − 3.66	**13.** 9.04 − 7.50	**18.** 19.83 − 3.60
4. 4.5 − 2.7	**9.** 15.03 − 3.12	**14.** 6.00 − 4.70	**19.** 8.15 − 2.07
5. 1.2 − 0.7	**10.** 4.12 − 1.27	**15.** 8.20 − 4.96	**20.** 17.07 − 0.02

21. 6.7 − 2.4 = _____

22. 7.6 − 2.07 = _____

23. 8.5 − 3.08 = _____

24. 9.03 − 3.77 = _____

25. 7.44 − 3.86 = _____

26. 4.62 − 2.88 = _____

Solve.

27. Kellyn buys a game for $15.86. What is her change from a $20-bill?

_____

28. Christine buys a pair of socks for $8.35. What is her change from a $10-bill? _____

29. Matt buys a pencil for $0.35, a pen for $2.75, and a ruler for $4.36. What is his change from a $20-bill? _____

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Name _____ Date _____

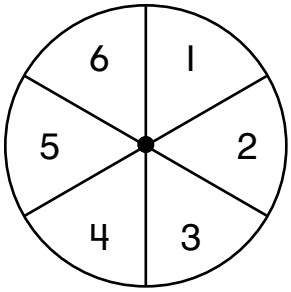
Reteach

4SDAP2.2, 4SDAP2.1

Probability and Outcomes

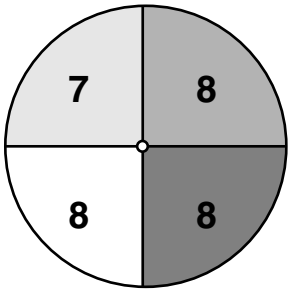
The chance, or likelihood, that something will happen is called **probability**.

Look at the spinner at the right. You could spin 1, 2, 3, 4, 5, or 6. There are 6 possible outcomes.



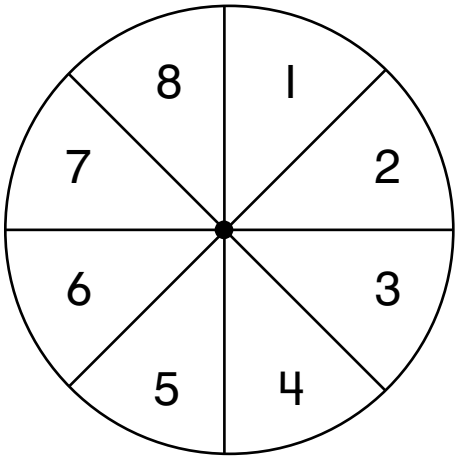
- The probability of spinning each number is **equally likely**.
- It is **impossible** to spin an 8.
- It is **certain** that you will spin a number greater than 0.

Look at the spinner at the right.



- The probability of spinning a 7 is **unlikely**.
- The probability of spinning an 8 is **likely**.

Look at the spinner at the right. Use the words *certain, likely, equally likely, unlikely,* or *impossible* to describe the probability.



1. The probability of spinning 12 is _____.

2. It is _____ that you will land on a number greater than 2.

3. It is _____ that you will land on a number less than 2.

4. It is _____ that you will land on a number less than 9.

5. It is _____ _____ that you will land on an odd or even number.

6. It is _____ to land on a number greater than 8.

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Name _____ Date _____

Skills Practice

4SDAP2.2, 4SDAP2.1

Probability and Outcomes

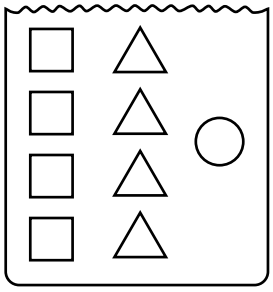
Describe the probability of picking a certain shape from the bag. Use *certain, likely, equally likely, unlikely,* or *impossible*.

1. ○ _____

2. ⌂ _____

3. △ or □ _____

4. △, □, or ○ _____



Describe the probability of each outcome. Use *certain*, *likely*, *equally likely*, *unlikely*, or *impossible*.

5. spinning 2 _____

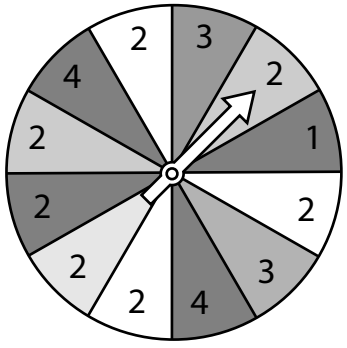
6. spinning 3 _____

7. spinning 6 _____

8. spinning 1 _____

9. spinning 3 or 4 _____

10. spinning 1, 2, 3, or 4 _____



Describe the probability of each outcome. Use *certain*, *likely*, *equally likely*, *unlikely*, or *impossible*.

11. The month after September will be November. _____

12. It will be sunny or rainy tomorrow. _____

13. It will snow in Alaska this year. _____

Solve.

14. A bag contains 3 red and 7 white balls. Is it unlikely, likely, or equally likely you will pick a red ball?

_____

15. A box contains 6 red pencils and 6 black pencils. Is it unlikely, likely, or equally likely you will pick a red pencil?

_____

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Name _____ Date _____

Reteach

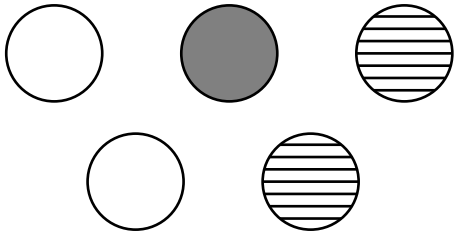
4SDAP2.2

Probability and Fractions

You can use a fraction to show probability.

$$\textbf{Probability} = \frac{\textbf{number of favorable outcomes}}{\textbf{number of possible outcomes}}$$

You can use probability to predict an outcome. If you pick one of these counters without looking, there are 5 possible outcomes.



The probability of picking a ◯ is $\frac{2}{5}$.

The probability of picking a ● is $\frac{1}{5}$.

The probability of picking a ▤ is $\frac{2}{5}$.

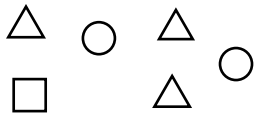
Use a fraction to describe the probability of each outcome.

1. □ _____

2. △ _____

3. ○ _____

4. ☆ _____



Use a fraction to describe the probability of each outcome.

5. A _____

6. B _____

7. C _____

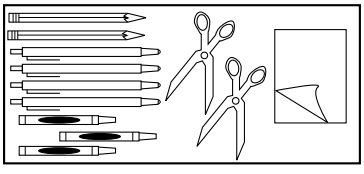
8. D _____

A	B	C	C	D
B	C	C	C	B

Use a fraction to describe the probability of each outcome.

9. a pencil _____

10. a pen _____



11. an eraser _____

12. a pair of scissors _____

13. a pad of paper _____

14. a crayon _____

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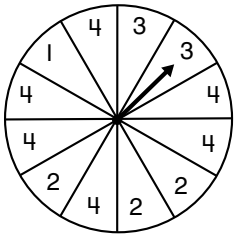
Name _____ Date _____

Skills Practice

4SDAP2.2

Probability and Fractions

Use a fraction to describe the probability of each outcome.



1. 3 _____

2. 1 _____

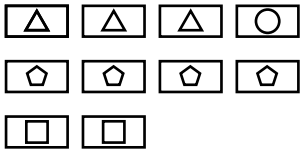
3. 4 _____

4. 2 _____

5. 3 or 4 _____

6. 5 _____

Use a fraction to describe the probability of each outcome.



7. circle _____

8. triangle _____

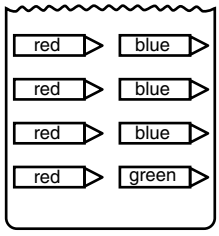
9. square _____

10. pentagon _____

11. hexagon _____

12. triangle or square _____

Use a fraction to describe the probability of each outcome.



13. blue _____

14. red _____

15. green _____

16. purple _____

17. red or blue _____

18. blue or green _____

Solve.

19. Greg has a coin in one of his closed hands. What is the probability that Greg's friend will pick the hand the coin is in?

_____

20. Karen turns over 5 paper cups. She hides a coin under one of them. What is the probability that Steven will guess which cup the coin is under?

_____

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Name _____ Date _____

Reteach

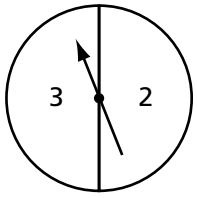
4MR1.1, 4SDAP2.1

Problem-Solving Strategy

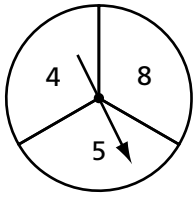
Make an Organized List

Otto plays a game. He spins the two spinners shown below and finds the product of the fractions he lands on. What products can Otto make?

Spinner A



Spinner B



Step 1 Understand	**Be sure you understand the problem.** Read carefully. What facts do you know? • Spinner A is marked _____ and Spinner B is marked _____ What do you need to find? • What _____ Otto can make.
Step 2 Plan	**Make a plan. Choose a strategy.** You can make an organized list to solve the problem. **Remember:** A product is the answer to a multiplication problem.

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16–3

Name _____ Date _____

Reteach *(continued)*

4MR1.1, 4SDAP2.1

Problem-Solving Strategy

Step 3 Solve

Carry out your plan.

Make a list of all the possible spinner products. Then find each product.

Spinner A		Spinner B		Product
	×		=	
	×		=	
	×		=	
	×		=	
	×		=	
	×		=	

What products can Otto make? _____

Step 4 Check

Is the solution reasonable?

Reread the problem. Have you answered the question? _____

How can you check your answer? _____

_____

_____

_____

_____

Practice

1. A spinner has 3 equal sections that are white, yellow, and green. Another spinner has 3 equal sections that are blue, purple, and red. How many different combinations of colors are possible if you spin each spinner once? _____

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Name _____ Date _____

Skills Practice

4MR1.1, 4SDAP2.1

Problem-Solving Strategy

Solve. Use the *make an organized list* strategy.

1. Juanita had 12 pencils in a box. She needed 144 for a school wide test. How many boxes will she need?

_____

2. Jared runs 4 laps around the track 3 times a week. How many laps does he run in 1 month? 6 weeks?

_____

_____

3. Alicia bought 2 sweaters for the price of one pair of jeans. The jeans cost twice the amount of the sweaters. She gave the cashier 4 twenty-dollar bills, and she received $4 back in change. How much did the sweaters cost? How much were the jeans?

_____

_____

4. Ally has a choice of 3 different pairs of socks including red, white, or black. If she reaches into her drawer and randomly chooses a pair, what is the probability that she will choose white?

_____

5. Drake wants to buy a CD for his mother's birthday. It costs $18.99. He makes $4.50 for mowing the lawn, and $5.49 for cleaning. How many times must he do each chore to make enough money for the CD?

_____

6. Juan could make banana bread, apple bread, or muffins. He could use whole wheat flour or white flour. How many possible combinations can he make?

_____

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Name _____ Date _____

16–4

Reteach

4SDAP2.1, 4SDAP2.2

Find Probability

Suppose you are playing a game with a spinner. Each player spins the spinner twice. The spinner has four colors: yellow, blue, pink, and green. You can make a grid to show all of the possible outcomes of spinning the spinner. Each outcome is shown where each row and column intersect.

		Second Spin			
		Yellow (Y)	Blue (B)	Pink (P)	Green (G)
First Spin	Yellow (Y)	YY	YB	YP	YG
	Blue (B)	BY	BB	BP	BG
	Pink (P)	PY	PB	PP	PG
	Green (G)	GY	GB	GP	GG

Use the grid to answer each question.

1. How many possible outcomes are there? _____

2. What is the probability of spinning the same color on both spins?

_____

3. What is the probability of spinning yellow on the first spin?

_____

4. What is the probability of spinning red on the second spin?

_____

_____

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16–4

Name _____ Date _____

Skills Practice

4SDAP2.1, 4SDAP2.2

Find Probability

Pablo is playing a game that involves taking two turns picking a colored disc from a bag without looking. There are a total of three discs: blue, white, and yellow. The grid shows the possible outcome of the two picks.

	Second Pick			
		Blue (B)	White (W)	Yellow (Y)
First Pick	Blue (B)	BB	BW	BY
	White (W)	WB	WW	WY
	Yellow (Y)	YB	YW	YY

Use the grid to answer each question.

1. How many possible outcomes are there? _____

2. What is the probability of picking 2 white discs?

_____

3. What is the probability of picking two discs of the same color?

_____

4. Julia is competing in the finals of an archery competition. She is allowed two more turns to hit the middle of the target. Create a grid to show all of the possible outcomes for her two tries. Use the grid to find the probability of Julia hitting the target twice.

	First Try		
		Miss	Hit
Second Try	Miss	Miss, Miss	Miss, Hit
	Hit	Hit, Miss	Hit, Hit

_____

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Name _____ Date _____

Reteach

4MR1.1, 4NS3.0

Problem-Solving Investigation

Joel went to a pumpkin patch. He saw 10 pumpkins in each row. There were 8 rows on one side of the road, and 9 rows on the other. How many pumpkins were there?

Step 1 Understand	**Be sure you understand the problem.** What facts do you know? • Joel went to a pumpkin patch. • There were ____ pumpkins in each row. • There were ____ rows on one side of the road. • There were ____ rows on the other side of the road.
Step 2 Plan	**Make a plan.** Choose a strategy. You may draw a picture. Draw the road, rows, and pumpkins. You can also make a model.
Step 3 Solve	Carry out your plan. **Plan 1** Draw a picture. Draw the 10 pumpkins in each of the 8 rows on one side of the road and 9 rows on the other side. Add them up. 10+10+10+10+10+10+10+10 = 80 10+10+10+10+10+10+10+10+10 = 90 80 + 90 = 170 pumpkins **Plan 2** Use counters to represent rows. Decide what facts you know. Plan what you will do and in what order. Use your plan to solve the problem. Then check your solution to make sure it makes sense.

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Reteach *(continued)*

4MR1.1, 4NS3.0

Problem-Solving Investigation

Step 4 Check	Is the solution reasonable? Reread the problem. How can you check your answer?

Solve using any strategy shown below.

- Use logical reasoning
- Make a model
- Draw a picture
- Work backward
- Make an organized list

1. Jen has 12 juice boxes in a case. She needs 96 boxes for a school picnic. How many cases will she need to bring? _____

2. Marsha rides her horse 3 times a week for 2 hours at a time. How many hours does she ride her horse in 2 weeks? 3 weeks?

_____

3. Nicholas bought 4 hamburgers and 2 salads. He gave the cashier 2 ten-dollar bills. If he received $1.98 back, how much did he pay for the food? _____

4. Collin packed sandwiches for a field trip lunch. He had 12 turkey, 10 peanut butter, and 15 ham. Nine of the children brought their own sandwiches, so how many total children went on the field trip? _____

5. For your birthday, your parents bought you a bicycle for $89.49 and a new coat for $155.25. If they still have $69.98 left, how much money did they start out with? _____

6. Juanita made a science fair display with a spider web that spanned a 6-foot by 4-foot area. If she placed 10 spiders in each square foot, how many spiders were there? _____

7. Olivia weighs three times as much as her younger brother, Ricardo, and is seventeen years older. Ricardo is 4-years-old and weighs 2 times the amount of his sister's age. How old is Olivia? How much does each sibling weigh? The weight is in pounds.

_____

_____

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Name _____ Date _____

Skills Practice

4MR1.1, 4NS3.0

Problem-Solving Investigation

Solve using any strategy shown below.

- Use logical reasoning
- Make a model
- Draw a picture
- Work backward
- Make an organized list

1. Roberto has 90 vitamins in a bottle. If he takes the vitamins twice a day, how many days will the bottle last? _____

2. Luis rides a motor scooter to work and home every day. He has to go 40 miles one way. How many miles will he put on the motor scooter in 7 days? 10 days?

_____

_____

3. Martin can choose from white socks, black socks, or colored socks, with leather shoes or tennis shoes. How many combinations of shoes and socks can he wear? _____

4. Your parents bought you a new video game system for $199.99 and $89.99 worth of games. If they still have $40.02 left, how much money did they start out with? _____

5. Rafael wants to plant 8 bushes in his yard. Each bush needs a 2 square foot area. How many square feet does he need in the yard for the bushes? _____

6. Kristen sold 60 rolls of wrapping paper. She sold 12 rolls of striped paper and 18 rolls of green paper. How many rolls were red?

_____

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Name _____ Date _____

Reteach

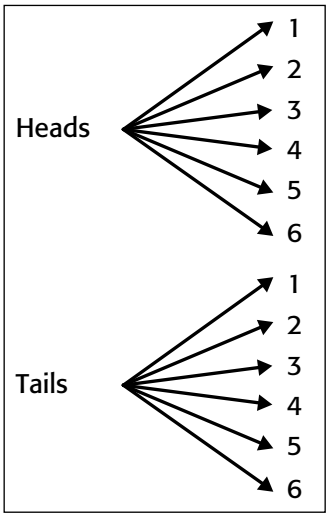
4SDAP2.1

Tree Diagrams

John is playing with a number cube and a penny. What are all the possible combinations of one roll of the cube and one flip of the penny?

Use a tree diagram to find all possible outcomes.

List each number on the cube 1 though 6 as well as the heads and tails of the penny.



There are 12 possible outcomes.

Draw a tree diagram to show all possible outcomes. Then find the probability of the situation.

1. What is the probability of choosing a red shirt and blue shorts?

Shirt	Shorts
Red	Blue
Orange	White
	Black

_____

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16–6

Name _____ Date _____

Skills Practice

4SDAP2.1

Tree Diagrams

Use a tree diagram to solve.

1. You spin a spinner with 4 equal sections marked 1–4. Then you spin another spinner with 3 equal sections colored red, blue, and yellow. What are all of the possible outcomes?

_____

_____

_____

_____

_____

2. Karen throws a dart at a target with 5 equal sections marked 1–5. She then throws a dart at a target with two equal sections colored green and blue. What are all of the possible outcomes?

_____

_____

_____

_____

_____

_____

3. The Boardwalk Shop sells souvenir shirts. The shirts come with long sleeves or short sleeves. The shirts come in white, gray, and blue. What are all of the different kinds of shirts?

_____

_____

_____

_____

4. Boardwalk Burgers sells burgers made from beef, turkey, chicken, or soy. Burgers can have no cheese, Swiss cheese, or American cheese. How many different choices are there?

_____

_____

_____

_____

_____

_____

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