Unit 6 Lesson 8a Math Concepts

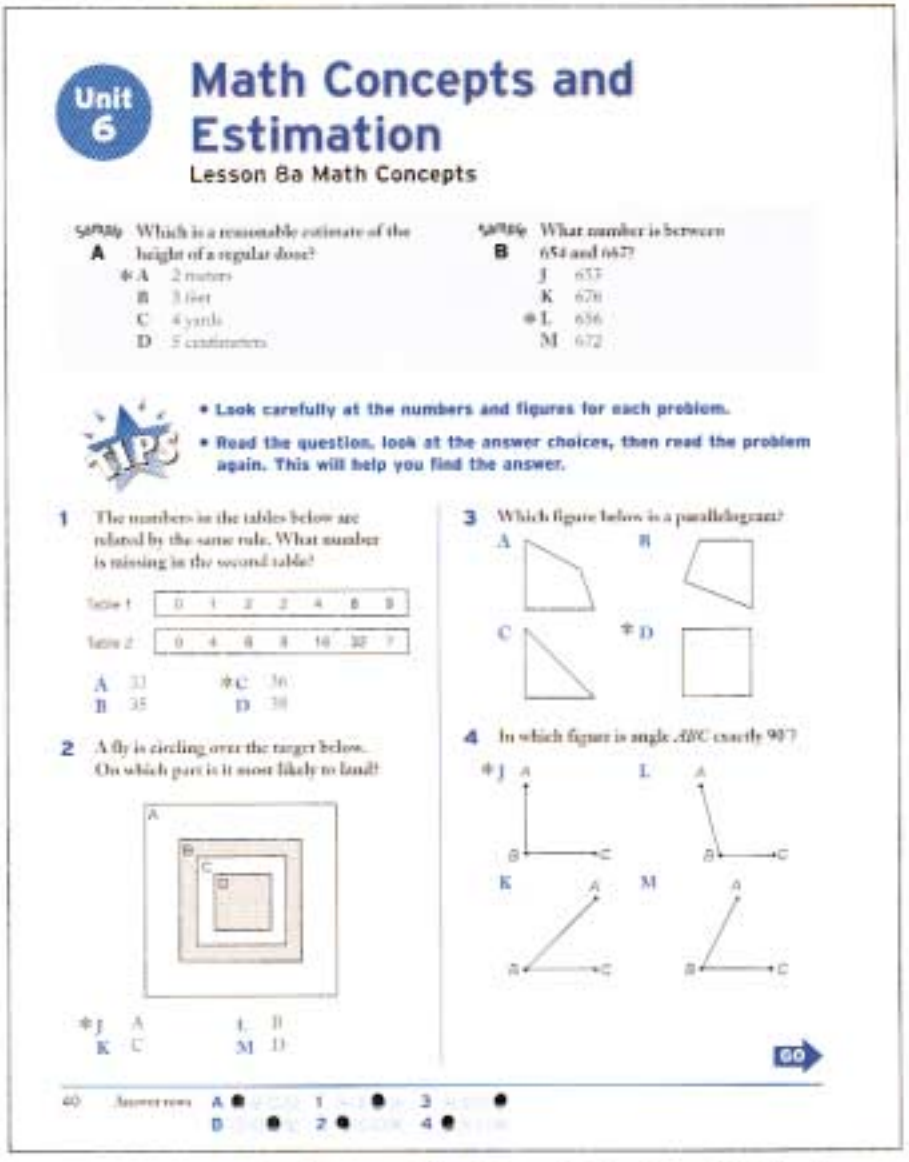
Focus

Mathematics Skills

- estimating measurement
- comparing and ordering whole numbers, fractions, and decimals
- understanding ordered pairs
- understanding probability
- recognizing plane figures
- identify angles
- solving simple equations
- identifying equivalent fractions
- understanding number sentences
- understanding multiplication
- understanding factors and remainders
- naming numerals
- understanding average (mean)
- understanding congruence
- understanding number or shape patterns
- identifying the best measurement unit
- recognizing fractional parts
- estimating and rounding

Test-taking Skills

- working methodically
- identifying and using key words, numbers, and pictures
- referring to a graphic
- finding the answer without computing



Unit 6

Math Concepts and Estimation

Lesson 8a Math Concepts

SAMPLE A Which is a reasonable estimate of the height of a regular door?

*A 2 meters
B 3 feet
C 4 yards
D 5 centimeters

SAMPLE B What number is between 654 and 667?

J 653
K 670
*L 656
M 672

TIPS

- Look carefully at the numbers and figures for each problem.
- Read the question, look at the answer choices, then read the problem again. This will help you find the answer.

1 The numbers in the tables below are related by the same rule. What number is missing in the second table?

Table 1: 0 1 2 3 4 8 9

Table 2: 0 4 8 12 16 32 ?

A 33
B 35
*C 36
D 38

2 A fly is circling over the target below. On which part is it most likely to land?

*J A
K C
L B
M D

3 Which figure below is a parallelogram?

A
B
C
*D

4 In which figure is angle ABC exactly 90°?

*J
L
K
M

GO

40 Answer rows A ● 1 ● 3 ● D ● 2 ● 4 ●

Samples A and B

Distribute scratch paper to the students.

Say Turn to Lesson 8a on page 40. In this lesson you will work on math problems.

Check to see that the students have found the right page.

Say Find Sample A. Read the question to yourselves. *(pause)* What are you supposed to do? *(estimate how high a door is)* Which answer choice is correct? *(answer A, 2 meters)* Yes, answer A is correct. Mark circle A for Sample A in the answer rows. Make sure the circle is completely filled in with a dark mark.

Check to see that the students have filled in the correct answer circle.

Say Now do Sample B. Read the question to yourself. *(pause)* Think about the important words and numbers in the question. Which answer is correct? *(answer L)* Fill in answer L for Sample B in the answer rows at the bottom of the page. Be sure you fill in the circle with a dark mark.

Check to see that the students have filled in the correct answer circle. If necessary, elaborate on the solutions to the sample items.

*TIPS

Say Now let's look at the tips.

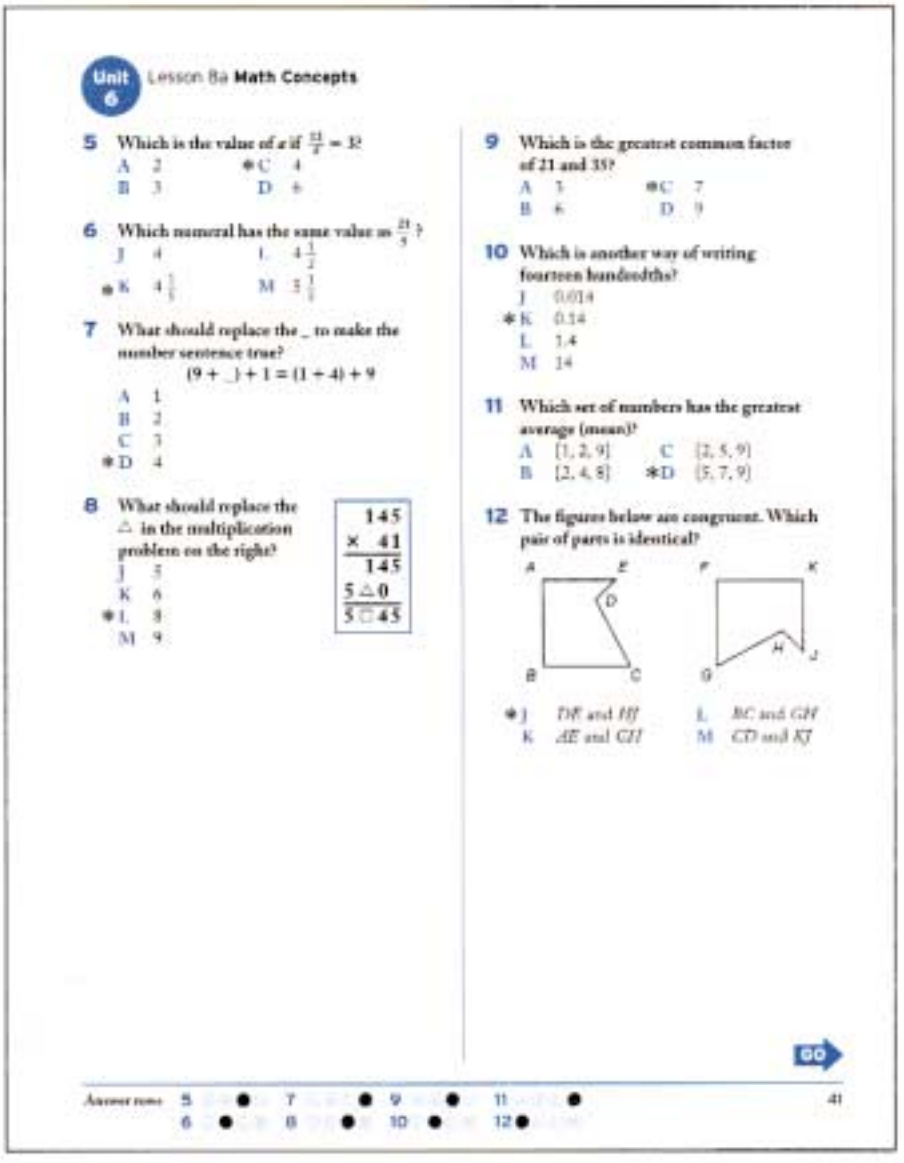
Have a volunteer read the tips aloud to the group.

Say Read each question carefully. Look for important words, numbers, and pictures in a problem. A good strategy to use is to read a question, look at the answer choices, then read the question again.

Practice

Say We are ready for Practice. You are going to do more questions in the same way that we did the samples. Do not write anything except your answer choices in your book. If you think it will help, you may do your work on the scratch paper I gave you. Remember to look for key words, numbers, and pictures in the problems. You should also remember that you don't have to compute to find some of the answers in this lesson. When you have finished working a problem, fill in the circle for your answer in the answer rows at the bottom of the page. Make sure that the circles for your answer choices are completely filled in with dark marks. Completely erase any marks for answers that you change. When you come to the GO sign at the bottom of a page, turn the page and continue working. Work until you come to the STOP sign at the bottom of page 42. Do you have any questions? Start working now.

Allow time for the students to fill in their answers.



Unit 6 Lesson 8a **Math Concepts**

5 Which is the value of x if $\frac{32}{x} = 32$?
A 2 *C 4
B 3 D 6

6 Which numeral has the same value as $\frac{21}{5}$?
J 4 L $4\frac{1}{2}$
*K $4\frac{1}{5}$ M $5\frac{1}{5}$

7 What should replace the _ to make the number sentence true?
$(9 + \_) + 1 = (1 + 4) + 9$
A 1
B 2
C 3
*D 4

8 What should replace the △ in the multiplication problem on the right?

	145
×	41
	145
5	△0
5	□45

J 5
K 6
*L 8
M 9

9 Which is the greatest common factor of 21 and 35?
A 3 *C 7
B 6 D 9

10 Which is another way of writing fourteen hundredths?
J 0.014
*K 0.14
L 1.4
M 14

11 Which set of numbers has the greatest average (mean)?
A {1, 2, 9} C {2, 5, 9}
B {2, 4, 8} *D {5, 7, 9}

12 The figures below are congruent. Which pair of parts is identical?

*J DE and HJ L BC and GH
K AE and GJ M CD and KJ

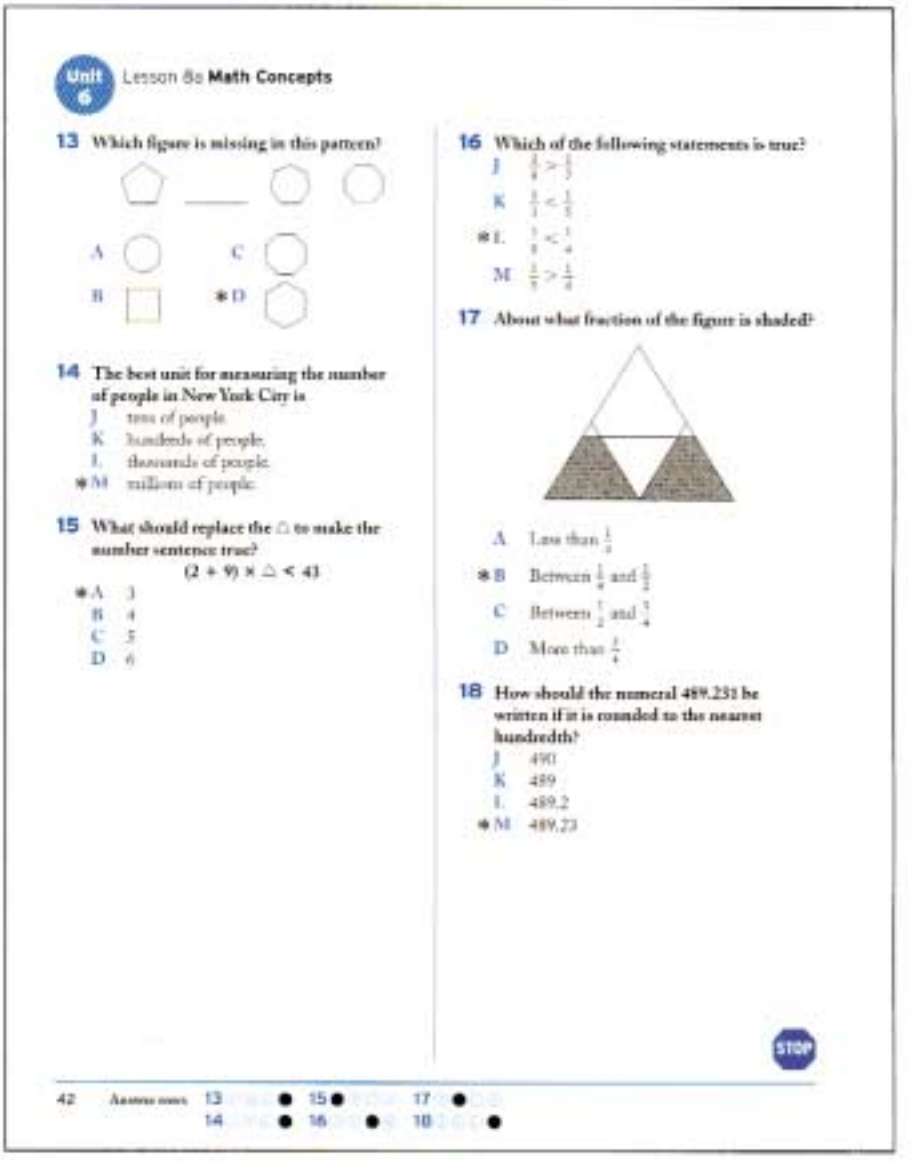
GO

Answer rows: 5 ● 7 ● 9 ● 11 ● 41
6 ● 8 ● 10 ● 12 ●

Say You may stop working now. You have finished Lesson 8a.

Review the answers with the students. If any problems caused particular difficulty, work through each of the answer choices. It may be helpful to have the students identify the key words and numbers in each problem. It is also a good idea to have volunteers solve each problem at the chalkboard and discuss the strategies they used.

Have the students indicate completion of the lesson by entering their score for this activity on the progress chart at the beginning of the book.



Unit 6 Lesson 8a **Math Concepts**

13 Which figure is missing in this pattern?

A
C
B
*D

14 The best unit for measuring the number of people in New York City is
J tens of people
K hundreds of people
L thousands of people
*M millions of people

15 What should replace the △ to make the number sentence true?

$(2 + 9) \times \triangle < 43$

*A 3
B 4
C 5
D 6

16 Which of the following statements is true?
J $\frac{1}{6} > \frac{1}{3}$
K $\frac{1}{3} < \frac{1}{5}$
*L $\frac{1}{8} < \frac{1}{4}$
M $\frac{1}{5} > \frac{1}{4}$

17 About what fraction of the figure is shaded?

A Less than $\frac{1}{4}$
*B Between $\frac{1}{4}$ and $\frac{1}{2}$
C Between $\frac{1}{2}$ and $\frac{3}{4}$
D More than $\frac{3}{4}$

18 How should the numeral 489.231 be written if it is rounded to the nearest hundredth?
J 490
K 489
L 489.2
*M 489.23

STOP

42 Answer rows 13 ● 15 ● 17 ●
14 ● 16 ● ● 18 ●

Unit 6 Lesson 8b Math Concepts

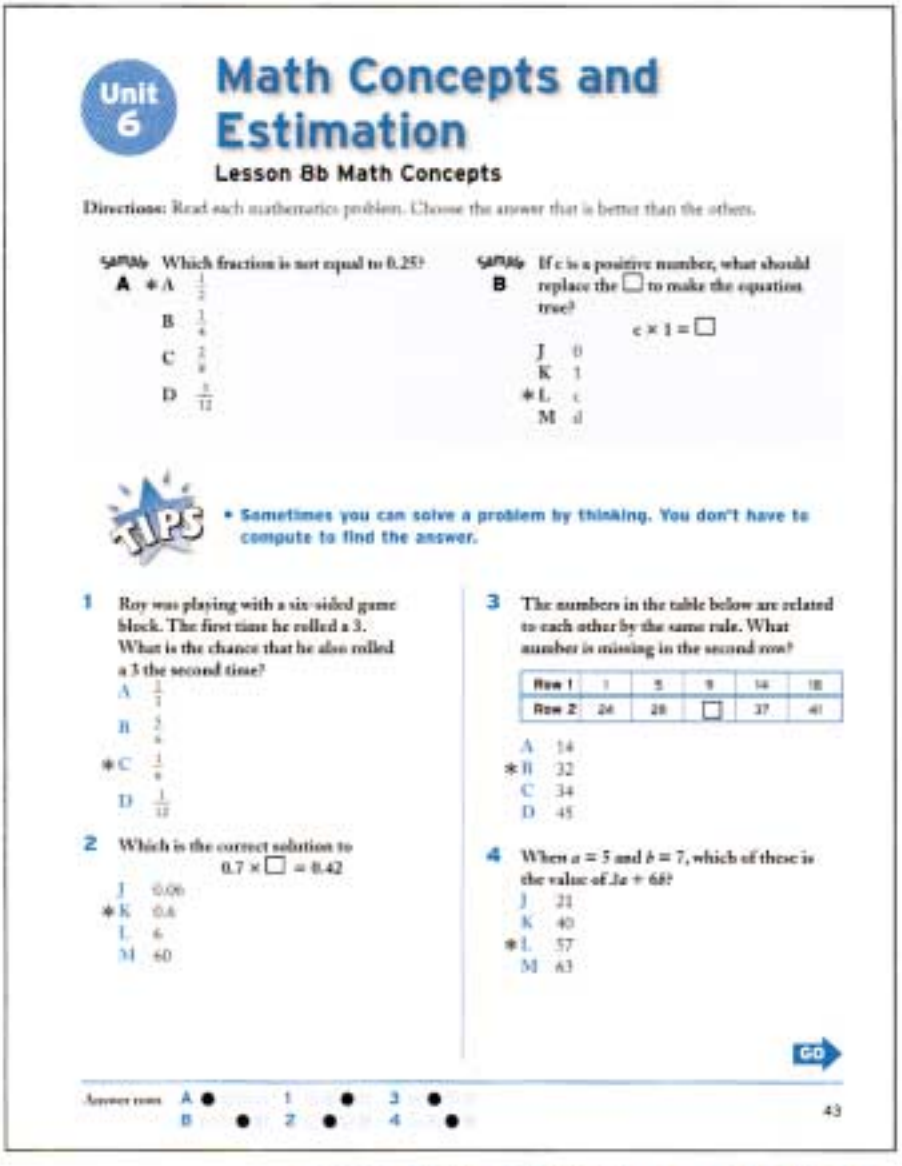
Focus

Mathematics Skills

- identifying equivalent fractions and decimals
- understanding special properties of the number 1
- understanding simple probability
- understanding number sentences
- understanding ordered pairs
- solving simple equations
- identifying parts of a figure
- understanding characteristics of related numbers
- understanding factors and remainders
- comparing and ordering whole numbers, fractions, and decimals
- understanding average (mean)
- understanding place value

Test-taking Skills

- referring to a graphic
- finding the answer without computing
- working methodically



Unit 6

Math Concepts and Estimation

Lesson 8b Math Concepts

Directions: Read each mathematics problem. Choose the answer that is better than the others.

SAMPLE A Which fraction is not equal to 0.25?

A ✱A $\frac{1}{2}$

B $\frac{1}{4}$

C $\frac{2}{8}$

D $\frac{3}{12}$

SAMPLE B If c is a positive number, what should replace the ☐ to make the equation true?

$c \times 1 = \square$

J 0

K 1

✱L c

M d

TIPS

- Sometimes you can solve a problem by thinking. You don't have to compute to find the answer.

1 Roy was playing with a six-sided game block. The first time he rolled a 3. What is the chance that he also rolled a 3 the second time?

A $\frac{1}{3}$

B $\frac{2}{6}$

✱C $\frac{1}{6}$

D $\frac{1}{12}$

2 Which is the correct solution to $0.7 \times \square = 0.42$

J 0.06

✱K 0.6

L 6

M 60

3 The numbers in the table below are related to each other by the same rule. What number is missing in the second row?

Row 1	1	5	9	14	18
Row 2	24	28	☐	37	41

A 14

✱B 32

C 34

D 45

4 When $a = 5$ and $b = 7$, which of these is the value of $3a + 6b$?

J 21

K 40

✱L 57

M 63

GO

Answer rows A ● 1 ● 3 ● B ● 2 ● 4 ●

43

Samples A and B

Distribute scratch paper to the students.

Say Turn to Lesson 8b on page 43. In this lesson you will work on more mathematics questions. Read the directions at the top of the page to yourself.

Allow time for the students to read the directions.

Say Find Sample A. Read the question to yourself. *(pause)* Which answer choice is correct? *(answer A)* Answer A is correct because all the other fractions are equal to 0.25. Mark answer A for Sample A in the answer rows. Make sure the circle is completely filled in with a dark mark.

Check to see that the students have filled in the correct answer circle.

Say Now we'll do Sample B. Read the question to yourself. *(pause)* Which answer is correct? *(answer L)* Fill in answer L for Sample B in the answer rows at the bottom of the page. Be sure you fill in the circle with a dark mark.

Check to see that the students have filled in the correct answer circle. If necessary elaborate on the solutions to the sample items.

✱TIPS

Say Now let's look at the tips.

Have a volunteer read the tips aloud to the group.

Say You don't have to compute to find the answer for many of the problems in this lesson. You can think through the problem using the numbers that make up the problem.

Practice

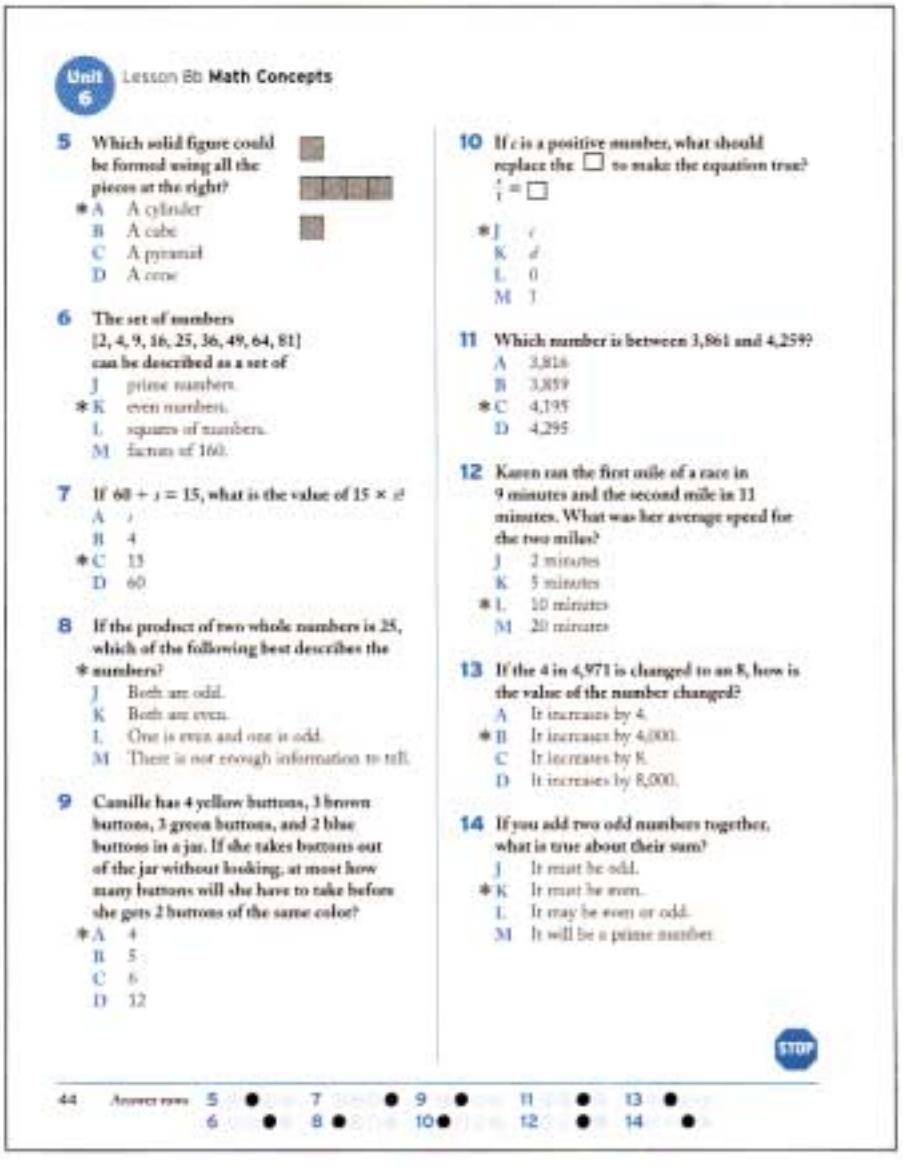
Say We are ready for Practice. You are going to do more questions in the same way that we did the samples. Do not write anything except your answer choices in your book. If you think it will help, you may do your work on scratch paper, but you should be able to solve most of the problems without computing. When you have finished working a problem, fill in the circle for your answer in the answer rows at the bottom of the page. Make sure that the circles for your answer choices are completely filled in with dark marks. Completely erase any marks for answers that you change. When you come to the GO sign at the bottom of a page, turn the page and continue working. Work until you come to the STOP sign at the bottom of page 44. Do you have any questions? Start working now.

Allow time for the students to fill in their answers.

Say You may stop working now. You have finished Lesson 8b.

Review the answers with the students. If any questions caused particular difficulty, work through each of the answer choices. It may be helpful to have volunteers solve each problem at the chalkboard and discuss the strategies they used.

Have the students indicate completion of the lesson by entering their score for this activity on the progress chart at the beginning of the book.



Unit 6 Lesson 8b **Math Concepts**

5 Which solid figure could be formed using all the pieces at the right?

*A A cylinder
B A cube
C A pyramid
D A cone

6 The set of numbers {2, 4, 9, 16, 25, 36, 49, 64, 81} can be described as a set of

J prime numbers.
*K even numbers.
L squares of numbers.
M factors of 160.

7 If $60 \div s = 15$, what is the value of $15 \times s$?

A s
B 4
*C 15
D 60

8 If the product of two whole numbers is 25, which of the following best describes the numbers?

J Both are odd.
K Both are even.
L One is even and one is odd.
M There is not enough information to tell.

9 Camille has 4 yellow buttons, 3 brown buttons, 3 green buttons, and 2 blue buttons in a jar. If she takes buttons out of the jar without looking, at most how many buttons will she have to take before she gets 2 buttons of the same color?

*A 4
B 5
C 6
D 12

10 If c is a positive number, what should replace the $\square$ to make the equation true?

$\frac{c}{1} = \square$

*J c
K d
L 0
M 1

11 Which number is between 3,861 and 4,259?

A 3,816
B 3,859
*C 4,195
D 4,295

12 Karen ran the first mile of a race in 9 minutes and the second mile in 11 minutes. What was her average speed for the two miles?

J 2 minutes
K 5 minutes
*L 10 minutes
M 20 minutes

13 If the 4 in 4,971 is changed to an 8, how is the value of the number changed?

A It increases by 4.
*B It increases by 4,000.
C It increases by 8.
D It increases by 8,000.

14 If you add two odd numbers together, what is true about their sum?

J It must be odd.
*K It must be even.
L It may be even or odd.
M It will be a prime number.

STOP

44 Answer rows 5 ● 7 ● 9 ● 11 ● 13 ●
6 ● 8 ● 10 ● 12 ● 14 ●