



New York State Testing Program

Mathematics Book 1

Grade **6**

March 13–17, 2006



1

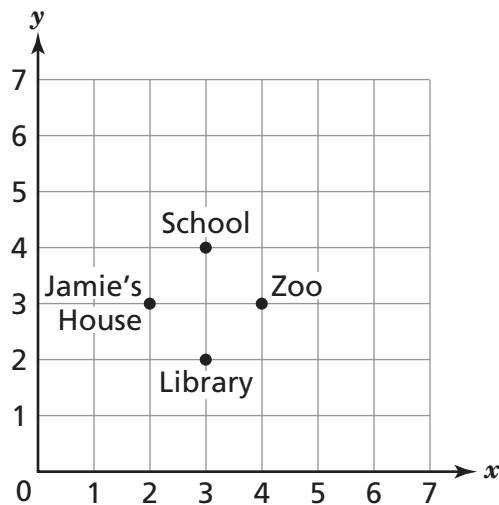
Which equation can be used to help solve the equation below?

$$\square \times 6 = 420$$

- A $\square = 420 + 6$
- B $\square = 420 - 6$
- C $\square = 420 \times 6$
- D $\square = 420 \div 6$

2

Jamie created a map for his friends. Each point on the map represents a different location.



What coordinates represent Jamie's house?

- F (2, 3)
- G (3, 2)
- H (3, 4)
- J (4, 3)

Go On

3

Giselle had 2 liters of water. She drank 750 milliliters. How many milliliters of water does Giselle have left?

1 liter = 1,000 milliliters

- A 250
- B 1,000
- C 1,250
- D 1,750

4

Jason has a jar that holds one dime, two nickels, and one quarter. He randomly removes three coins from the jar. Which combination is **not** a possible outcome?

- F one dime, one nickel, and one quarter
- G one quarter and two dimes
- H one dime and two nickels
- J two nickels and one quarter

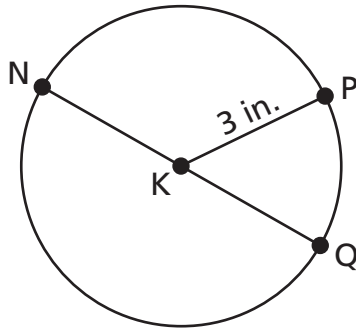
5

Jackie wants to plant $2\frac{1}{2}$ rows of corn in her garden. She needs $3\frac{1}{4}$ ounces of seed for each row. How many total ounces of seed should Jackie buy?

- A $8\frac{1}{8}$
- B $6\frac{1}{8}$
- C $5\frac{3}{4}$
- D $5\frac{2}{6}$

6

A circle has a diameter, \overline{NQ} , as shown below.



[not drawn to scale]

The radius \overline{KP} is 3 inches. What is the length of \overline{NQ} ?

- F 3 inches
- G 4 inches
- H 6 inches
- J 9 inches

7

How many cups are in 5 quarts?

1 quart = 2 pints
1 pint = 2 cups

- A 10
- B 20
- C 30
- D 40

Go On

8

At a gymnastics competition, $\frac{3}{10}$ of the gymnasts won a ribbon. What percent of the gymnasts won a ribbon?

F 3%

G 30%

H 33%

J $33\frac{1}{3}\%$

9

Which equation shows the commutative property of addition?

A $6 + 3 = 9$

B $6 + 3 = 6 + 3$

C $6 + 3 = 3 + 6$

D $6 + 3 = 5 + 4$

10

Mei wrote the expression below.

$$4n \times 2$$

If n equals 6, what is the value of the expression?

F 48

G 26

H 20

J 12

11

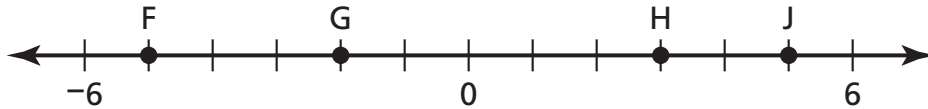
George has a one-gallon container of apple juice. How many cups of apple juice are in the one-gallon container?

1 gallon = 4 quarts
1 quart = 2 pints
1 pint = 2 cups

- A 1
- B 4
- C 8
- D 16

12

Which point on the number line is greater than -4 but less than 0 ?



- F F
- G G
- H H
- J J

Go On

13

Ben recorded the number of customers who shopped at his pet store every day for one week. The results are shown below.

42, 35, 56, 29, 42, 39, 23

What is the mean number of customers who shopped at the pet store?

- A 33
- B 38
- C 39
- D 42

14

Mr. Jenkins wants to distribute 40 fliers. He has distributed 30 fliers so far. What percent of the total number of fliers has Mr. Jenkins distributed?

- F 60%
- G 70%
- H 75%
- J 80%

- 15** Simplify the expression below.

$$(6 + 3^2) \times 4$$

- A 36
- B 42
- C 48
- D 60

- 16** Keesha will paint one rectangular wall of her bedroom. The wall measures 10 feet by 8 feet. What is the area of the wall that Keesha will paint?

$$A = l \times w$$

- F 18 square feet
- G 64 square feet
- H 80 square feet
- J 100 square feet

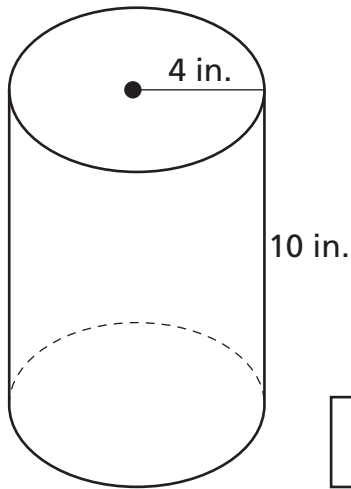
- 17** What value for n makes the equation true?

$$3 \times n = 1$$

- A -3
- B $\frac{1}{3}$
- C $\frac{2}{3}$
- D 2

Go On

- 18** What is the volume of the cylinder below?



Volume of Cylinder = $\pi r^2 h$

[not drawn to scale]

- F 80π cubic inches
- G 160π cubic inches
- H 400π cubic inches
- J $1,600\pi$ cubic inches

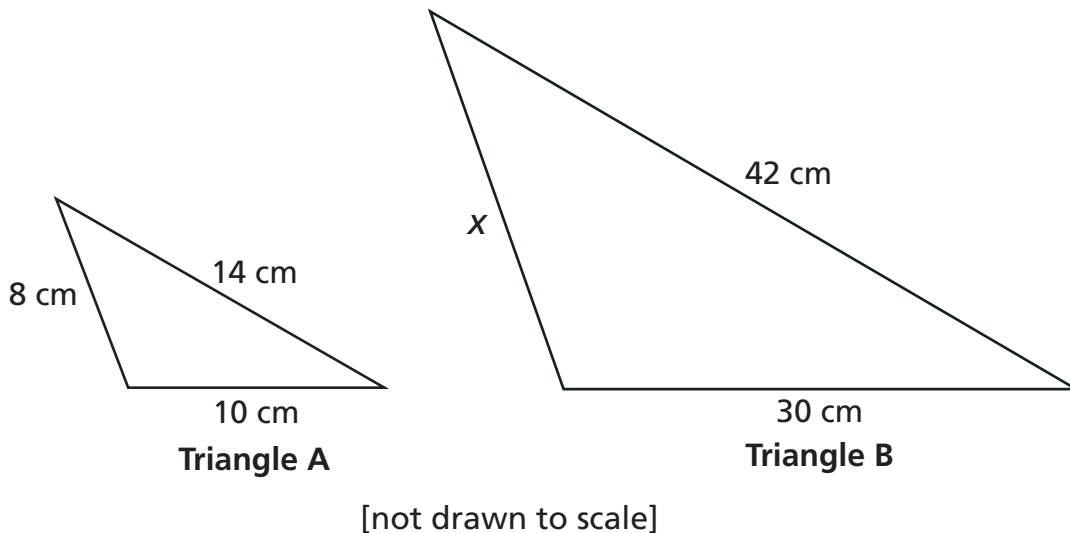
- 19** Simplify the expression below.

$$3^3 + 1^2$$

- A 10
- B 11
- C 28
- D 29

20

Two similar triangles are shown below.



What is the length of side x in Triangle B?

- F** 16 cm
- G** 20 cm
- H** 24 cm
- J** 28 cm

21

The largest pizza for sale at Shawna's Pizza Parlor has a radius of 12 inches. What is the diameter of this pizza?

- A** 6 inches
- B** 24 inches
- C** 36 inches
- D** 48 inches

Go On

22

Diane tossed a coin 20 times. She recorded whether the coin landed heads up or tails up. The results are shown in the table below.

COIN TOSSES

Position	Number of Times
Heads up	
Tails up	

What fraction of the coin tosses landed tails up?

F $\frac{1}{8}$

G $\frac{2}{3}$

H $\frac{2}{5}$

J $\frac{3}{5}$

23

Which equation is true when $x = 0$?

A $6 - x + 2 = 4$

B $2 + 6 - x = 4$

C $x - 6 + 2 = 4$

D $6 + x - 2 = 4$

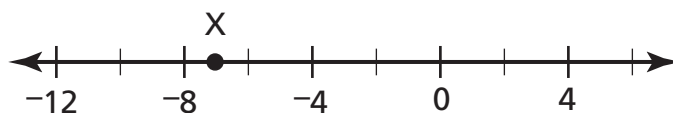
24

Sarah collects stamps and keeps them in envelopes. She had 9 envelopes with a certain number of stamps, s , in each envelope. She sells 3 of the envelopes. Which expression represents the number of stamps Sarah has left?

- F $9s - 3$
- G $(9 + 3)s$
- H $9s - 3s$
- J $9s - s - 3$

25

What number is represented by point X on the number line?

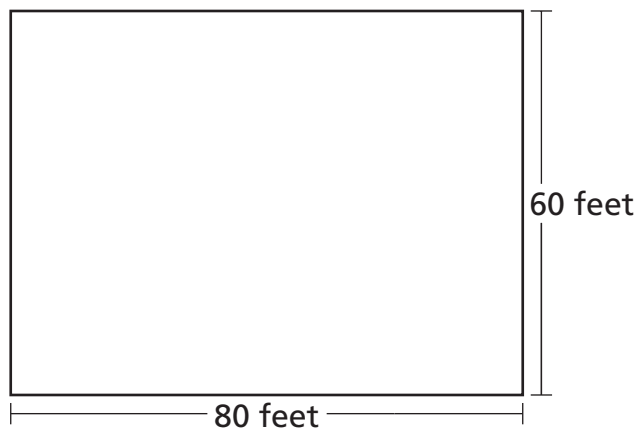


- A -6
- B -7
- C -9
- D -10

STOP

A diagram of Mr. Hill's yard is shown below.

MR. HILL'S YARD



[not drawn to scale]

Mr. Hill wants to plant grass seed in his yard. He needs to know how much seed he should buy. What is the area of Mr. Hill's yard?

Answer _____ square feet

On the lines below, explain your answer.

Go On

27

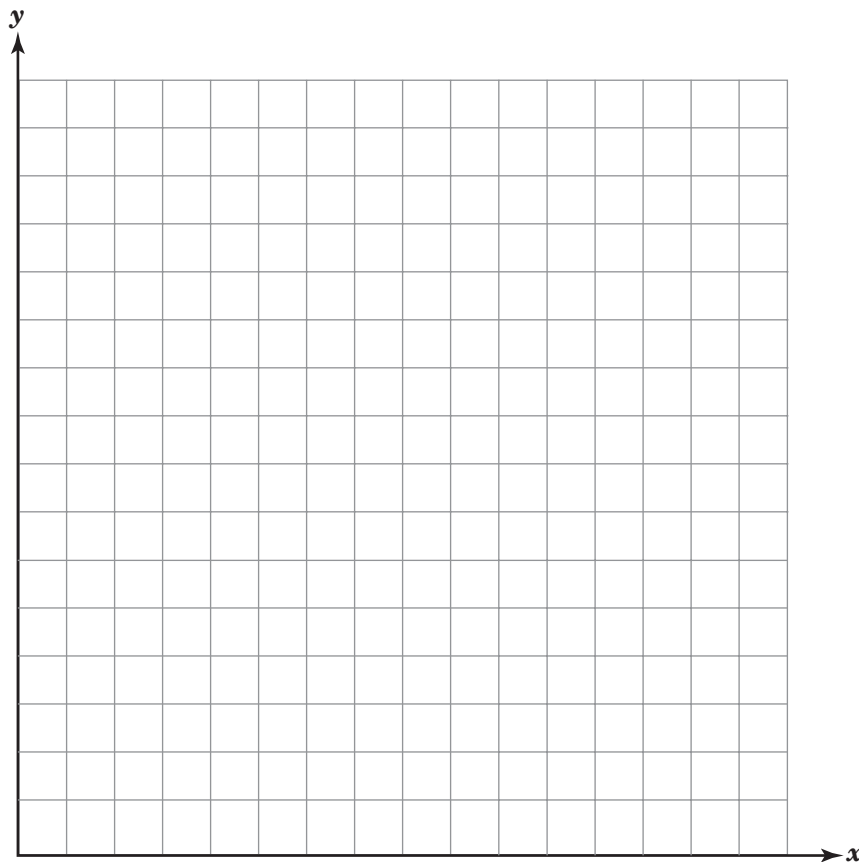
In Ms. Fletcher's class, 7 of the 20 students attend an after school art program. What percent of the students attend the after school art program?

Show your work.

Answer _____ %

Part A

On the grid below, draw a rectangle with a perimeter of 34 units.



Part B

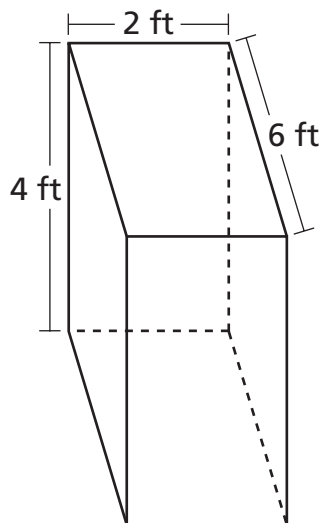
What are the lengths of each side of the rectangle?

Answer _____ units

Go On

29

Mia puts pictures into a box like the one shown below.



[not drawn to scale]

Part A

What is the volume of the box? Use the formula $V = lwh$.

Show your work.

Answer _____ cubic feet

Part B

If the height of the box is doubled, what will be the volume of the new box?

Answer _____ cubic feet

On the lines below, explain how you found your answer.

Go On

30

Solve the equation below for r .

$$r - 9 = 16$$

Show your work.

Answer $r =$ _____

31

On Friday, Lewis saw a certain number of hummingbirds, h . On Saturday, he saw 3 more than twice the number of hummingbirds he saw on Friday.

Write an expression for the number of hummingbirds Lewis saw on Saturday.

Expression _____

32

Avery is comparing two expressions. The first expression is 8^3 . The second expression is 3^5 . Which expression is greater?

Show your work.

Answer _____

Go On

33

At Anthony's school, 25% of the 72 sixth-grade students wear either glasses or contact lenses.

Part A

How many sixth-grade students wear either glasses or contact lenses?

Show your work.

Answer _____ students

Part B

There are 9 students who wear glasses. Of the students who wear glasses or contact lenses, what percent wear glasses?

Show your work.

Answer _____ %

34

Kyle has a container that holds 60 paperclips. Half of the paperclips are metal. The other half are colored plastic: 10 red, 10 green, and 10 blue.

Part A

If Kyle randomly takes a paperclip out of the container, what is the probability that the paperclip will be colored plastic?

Probability _____

Part B

If Kyle randomly takes a paperclip out of the container, what is the probability that the paperclip will be red or green?

Probability _____

On the lines below, explain your answer.

Go On

35 Frank's grocery bill is \$40.43. After Frank uses some coupons, the bill is \$30.35.

Part A

By rounding to the nearest dollar, **estimate** the amount of money Frank saved.

Answer \$ _____

Part B

What is the approximate percent that Frank saved on his grocery bill?

Show your work.

Answer _____%

STOP

**Strand and Performance Indicator Map with Answer Key
2006 Grade 6 Mathematics**

Question	Type	Points	Strand	Content Performance Indicator	Answer Key
Book 1					
1	Multiple Choice	1	Number Sense and Operations	6N4	D
2	Multiple Choice	1	Geometry	5G12	F
3	Multiple Choice	1	Measurement	6M5	C
4	Multiple Choice	1	Statistics and Probability	5S5	G
5	Multiple Choice	1	Number Sense and Operations	6N18	A
6	Multiple Choice	1	Geometry	6G6	H
7	Multiple Choice	1	Measurement	6M3	B
8	Multiple Choice	1	Number Sense and Operations	6N21	G
9	Multiple Choice	1	Number Sense and Operations	6N2	C
10	Multiple Choice	1	Algebra	6A2	F
11	Multiple Choice	1	Measurement	6M3	D
12	Multiple Choice	1	Number Sense and Operations	6N14	G
13	Multiple Choice	1	Statistics and Probability	6S5	B
14	Multiple Choice	1	Number Sense and Operations	6N11	H
15	Multiple Choice	1	Number Sense and Operations	6N22	D
16	Multiple Choice	1	Algebra	6A6	H
17	Multiple Choice	1	Number Sense and Operations	6N19	B
18	Multiple Choice	1	Algebra	6A6	G
19	Multiple Choice	1	Number Sense and Operations	6N25	C
20	Multiple Choice	1	Geometry	6G1	H
21	Multiple Choice	1	Geometry	6G6	B
22	Multiple Choice	1	Statistics and Probability	5S6	H
23	Multiple Choice	1	Algebra	5A3	D
24	Multiple Choice	1	Algebra	6A1	H
25	Multiple Choice	1	Number Sense and Operations	6N14	B

**Strand and Performance Indicator Map with Answer Key
Grade 6 (continued)**

Question	Type	Points	Strand	Content Performance Indicator	Answer Key
Book 2					
26	Short Response	2	Geometry	6G2	n/a
27	Short Response	2	Number Sense and Operations	6N11	n/a
28	Short Response	2	Geometry	5G14	n/a
29	Extended Response	3	Measurement	6M1	n/a
30	Short Response	2	Algebra	5A4	n/a
31	Short Response	2	Algebra	6A1	n/a
32	Short Response	2	Number Sense and Operations	6N24	n/a
33	Extended Response	3	Number Sense and Operations	6N12	n/a
34	Extended Response	3	Statistics and Probability	5S5	n/a
35	Extended Response	3	Number Sense and Operations	6N26	n/a