



New York State Testing Program

Mathematics Test Book 1

Grade **6**

March 12–16, 2007

1

Which proportion is correct?

A $\frac{4}{5} = \frac{7}{15}$

B $\frac{7}{15} = \frac{10}{15}$

C $\frac{4}{5} = \frac{20}{25}$

D $\frac{10}{15} = \frac{20}{25}$

2

Shirley's wading pool holds 368 quarts of water. How many gallons of water does it hold?

| |
|---------------------|
| 1 gallon = 4 quarts |
|---------------------|

A 92

B 364

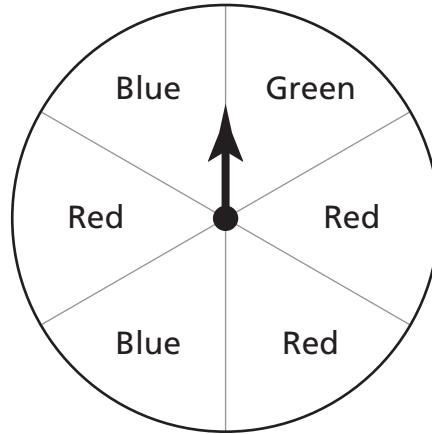
C 372

D 1,472

Go On

3

The spinner below is divided into 6 equal sections. Isabel spins the arrow on the spinner once.



What is the probability the arrow will land on green?

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

4

Gabe invited 4 girls and 7 boys to a party. Each of Gabe's guests received a certain number of candy bars, c . Which expression represents the total number of candy bars given to Gabe's guests?

- A $11c$
- B $28c$
- C $4c + 7$
- D $4c \times 7c$

5What value of x makes the proportion below correct?

$$\frac{x}{9} = \frac{9}{27}$$

- A 1
- B 3
- C 6
- D 9

6

Chen records the number of crayons in her art supply box by color. The results are shown in the table below.

CHEN'S CRAYONS

| Color | Number of Crayons |
|--------|-------------------|
| Blue | 2 |
| Red | 3 |
| Yellow | 1 |
| Green | 4 |

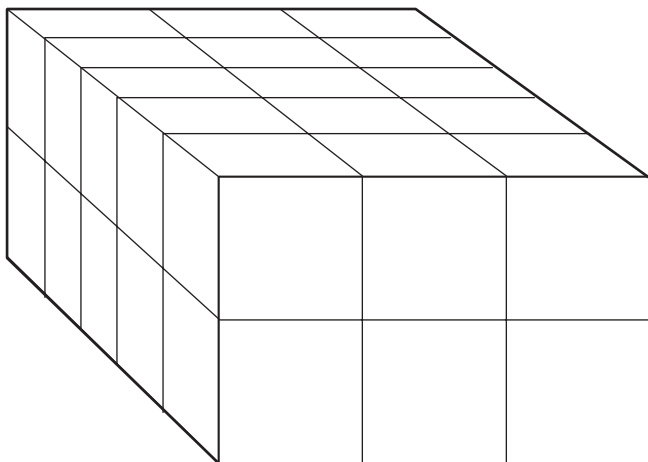
What is the ratio of the number of red crayons compared to the number of yellow crayons?

- A 1:3
- B 3:1
- C 1:10
- D 3:10

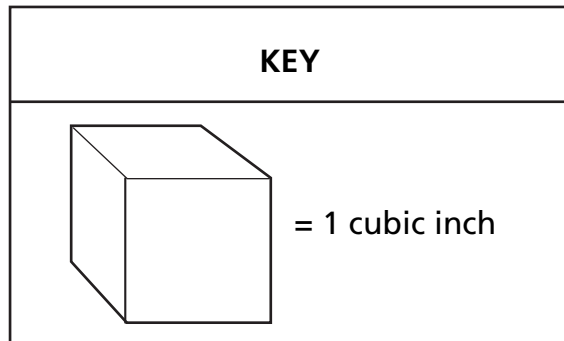
Go On

7

The diagram below shows a rectangular prism that Gayle built using blocks.



[not drawn to scale]



What is the volume of the rectangular prism?

- A 10 cubic inches
- B 15 cubic inches
- C 30 cubic inches
- D 31 cubic inches

8

What property is shown in the equation below?

$$4 \times (8 \times 6) = (4 \times 8) \times 6$$

- A inverse property of multiplication
- B identity property of multiplication
- C associative property of multiplication
- D commutative property of multiplication

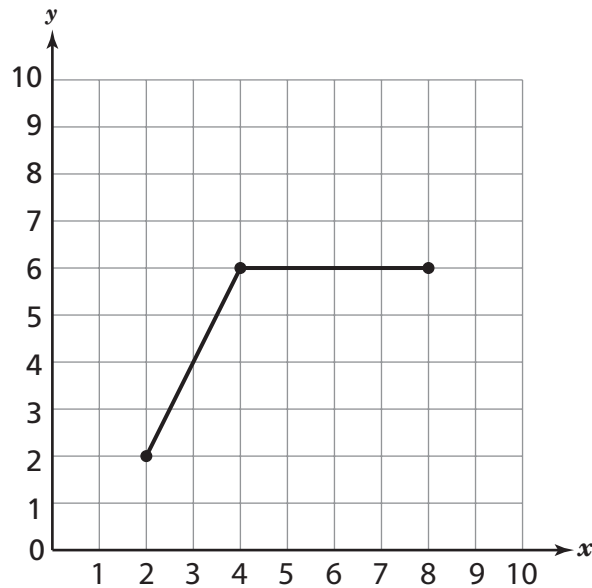
9

There are 80 sixth-grade students at Howard Elementary School. If 25% of the students have green eyes, how many sixth-grade students have green eyes?

- A 16
- B 20
- C 40
- D 55

10

Michael plots three points on the grid below and connects the points.



What coordinates should Michael plot next if he wants to draw a parallelogram?

- A (10, 2)
- B (6, 2)
- C (2, 8)
- D (2, 6)

Go On

11

A sixth-grade class completed a survey about favorite foods. Of the students in the class, $\frac{2}{6}$ chose hamburgers, and $\frac{3}{8}$ chose pizza. What fraction of the class chose either hamburgers or pizza as the favorite food?

A $\frac{1}{24}$

B $\frac{6}{48}$

C $\frac{5}{14}$

D $\frac{17}{24}$

12

The table below shows the average lengths of different types of beetles.

BEETLE LENGTHS

| Beetle Name | Length |
|------------------------|--------|
| Bacon beetle | 8 mm |
| Green tiger beetle | 16 mm |
| Ground beetle | 16 mm |
| Rove beetle | 8 mm |
| Soldier beetle | 10 mm |
| Maritime beetle | 20 mm |
| Green dock leaf beetle | 6 mm |

What is the median, in millimeters, of the data?

A 8

B 10

C 12

D 14

- 13** Kathy buys 6 cups of ice cream. How many pints of ice cream does Kathy buy?

| |
|-----------------|
| 1 pint = 2 cups |
|-----------------|

- A 3
- B 4
- C 6
- D 12

- 14** Hector and his friends collect baseball cards. The number of cards in each person's collection is shown below.

36, 61, 55, 72, 47, 12, 32, 44, 55

What is the range of the data?

- A 60
- B 55
- C 47
- D 46

- 15** In a sixth-grade music class, $\frac{1}{5}$ of the class wants to play the drums. Which decimal is equivalent to $\frac{1}{5}$?

- A 0.02
- B 0.15
- C 0.2
- D 1.5

Go On

16

A hen lays an average of 5.5 eggs each week. If she lays eggs for a certain number of weeks, w , which expression can be used to determine the total number of eggs she lays?

- A $5.5 \div w$
- B $5.5 + w$
- C $5.5 - w$
- D $5.5 \times w$

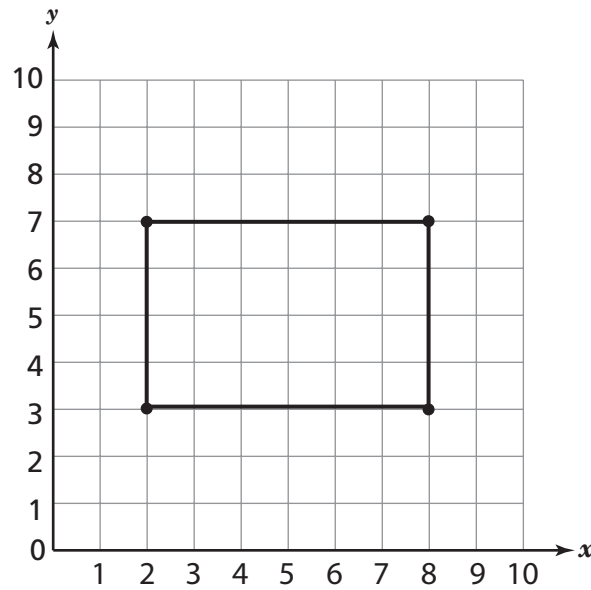
17

Bobby is sorting some nails by their lengths. The lengths of the nails are $2\frac{1}{2}$ inches, $2\frac{3}{4}$ inches, $\frac{3}{4}$ inch, $3\frac{1}{2}$ inches, and $2\frac{1}{4}$ inches. Which list of lengths is in order from **shortest** to **longest**?

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

18

On the grid below, Shina drew a diagram of a rectangular table top.



What is the perimeter, in units, of the rectangular table top?

- A 10
- B 12
- C 20
- D 24

19

In her garden, Rachel has a water barrel shaped like a cylinder. The radius of the barrel is 1 foot, and the height is 4 feet. What is the volume, in cubic feet, of the water barrel?

Leave your answer in terms of π .

$$V = \pi r^2 h$$

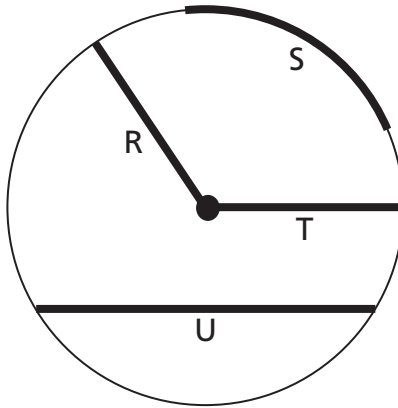
- A 4π
- B 8π
- C 16π
- D 64π

Go On

20 Which expression is equivalent to $|-11| + |-3|$?

- A** $11 + 3$
- B** $11 - 3$
- C** $-11 + -3$
- D** $-11 + 3$

21 The circle below has four labeled parts.



Which part of the circle does segment U represent?

- A** arc
- B** chord
- C** diameter
- D** radius

- 22** Simplify the expression below.

$$4^3 \times 3^2$$

- A 35
- B 72
- C 384
- D 576

- 23** In Mr. Martin's science class, brine shrimp are hatching in a container of 255 milliliters of salt water. How many liters of salt water are in the container?

| |
|-----------------------------|
| 1 liter = 1,000 milliliters |
|-----------------------------|

- A 0.255
- B 2.55
- C 2,550
- D 25,500

Go On

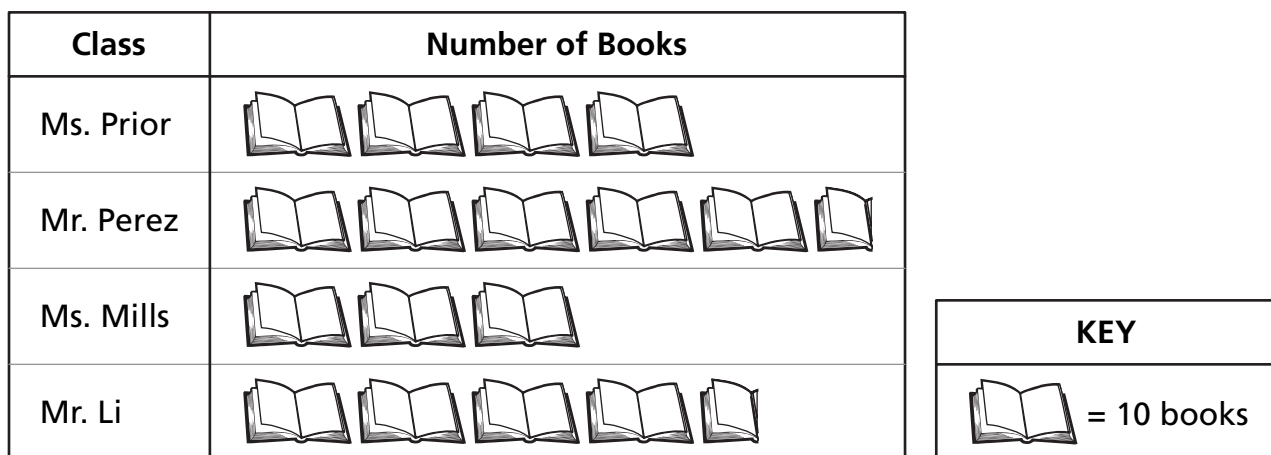
- 24** Simplify the expression below.

$$6 \times (5^3 + 2)$$

- A 762
- B 752
- C 102
- D 92

- 25** The pictograph below shows the number of books read by sixth-grade students in four different reading classes.

READING TOTALS



How many more books did the students in Mr. Perez's class read than the students in Ms. Mills's class?

- A $2\frac{1}{2}$
- B $8\frac{1}{2}$
- C 25
- D 85

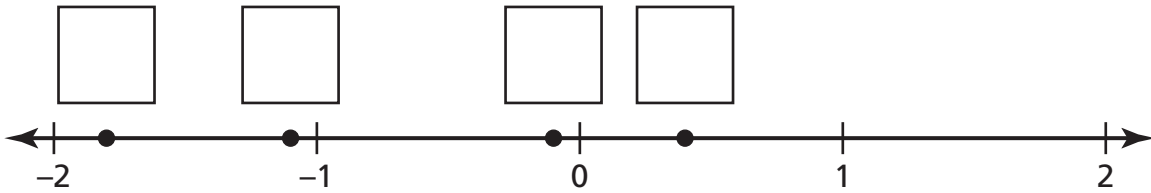
STOP

26

Komiko wants to plot the numbers below on a number line.

 -1.8 0.4 -0.1 -1.1

In the boxes above the points on the number line, write the correct number for each point.

***Go On***

27

On Tuesday, Grace’s Flower Shop sold 124 flowers. At the end of the day, there were 237 flowers left in the shop. Grace used the equation below to find the total number of flowers, f , that were in the shop at the beginning of the day.

$$f - 124 = 237$$

Part A

What was the total number of flowers in the shop at the beginning of the day?

Show your work.

Answer _____ flowers

Part B

On the lines below, explain how you determined the value of f .

28

Carlos burns 75 calories for every 15 minutes he walks.

Part A

How many calories will Carlos burn if he walks for 45 minutes?

Show your work.

Answer _____ calories

Part B

Carlos wants to burn 300 calories. How many minutes must Carlos walk in order to burn 300 calories?

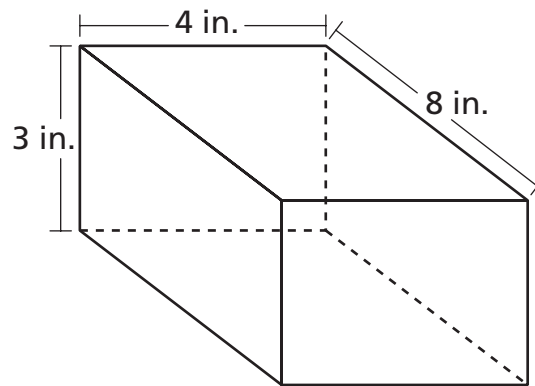
Show your work.

Answer _____ minutes

Go On

29

Ava has a jewelry box in the shape of the rectangular prism shown below.



[not drawn to scale]

$$V = lwh$$

What is the volume, in cubic inches, of Ava's jewelry box?

Show your work.

Answer _____ cubic inches

30

A bag of dog biscuits contains 7 flavored biscuits. There are 2 cheese biscuits, 3 bacon biscuits, and 2 beef biscuits. Melissa randomly picks one biscuit out of the bag. What is the probability that Melissa picks either a cheese biscuit or a beef biscuit?

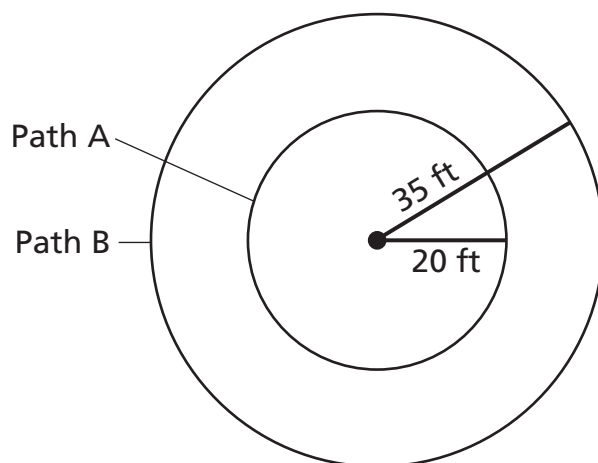
Show your work.

Answer _____

Go On

31

The diagram below shows the paths of two riders on a merry-go-round.



[not drawn to scale]

$$C = 2\pi r$$

How much **greater**, in feet, is the circumference of Path B than Path A?

Leave your answer in terms of π .

Show your work.

Answer _____ feet

32

Ms. Chen asked Tanya to find the value of the expression below.

$$5 \times 4^2$$

Part A

What value should Tanya write for the expression?

Answer _____

Part B

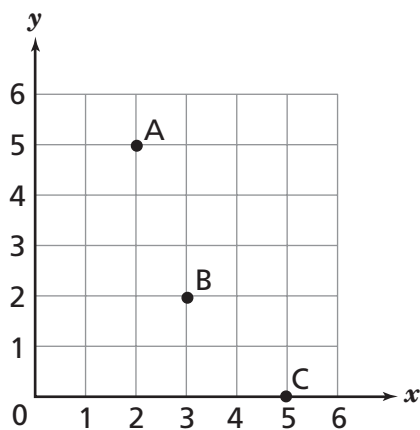
What is the value of the expression if the exponent is changed from the digit 2 to the digit 3?

Answer _____

Go On

33

Ellen plotted three points on the grid below.



What are the coordinates of point C?

Answer (_____ , _____)

On the lines below, explain how you determined the coordinates of point C.

34

Tyrone saved \$24 of the \$60 he earned mowing lawns. What percent of his earnings did Tyrone save?

Show your work.

Answer _____ %

Go On

35

Adrian correctly solved two equations in math class.

Part AWhat value did Adrian find for n in her first equation?

$$38 + n = 57$$

Show your work.**Answer** _____**Part B**What value did she find for y in her second equation?

$$\frac{y}{5} = 103$$

Show your work.**Answer** _____**STOP**

**Standard and Performance Indicator Map with Answer Key
2007 Grade 6 Mathematics**

| Question | Type | Points | Strand | Content Performance Indicator | Answer Key |
|---------------|-----------------|--------|-----------------------------|-------------------------------|------------|
| Book 1 | | | | | |
| 1 | Multiple Choice | 1 | Number Sense and Operations | 6.N.7 | C |
| 2 | Multiple Choice | 1 | Measurement | 6.M.3 | A |
| 3 | Multiple Choice | 1 | Statistics and Probability | 5.S.5 | D |
| 4 | Multiple Choice | 1 | Algebra | 6.A.1 | A |
| 5 | Multiple Choice | 1 | Number Sense and Operations | 6.N.9 | B |
| 6 | Multiple Choice | 1 | Statistics and Probability | 5.S.6 | B |
| 7 | Multiple Choice | 1 | Measurement | 6.M.1 | C |
| 8 | Multiple Choice | 1 | Number Sense and Operations | 6.N.2 | C |
| 9 | Multiple Choice | 1 | Number Sense and Operations | 6.N.12 | B |
| 10 | Multiple Choice | 1 | Geometry | 5.G.13 | B |
| 11 | Multiple Choice | 1 | Number Sense and Operations | 6.N.16 | D |
| 12 | Multiple Choice | 1 | Statistics and Probability | 6.S.5 | B |
| 13 | Multiple Choice | 1 | Measurement | 6.M.3 | A |
| 14 | Multiple Choice | 1 | Statistics and Probability | 6.S.6 | A |
| 15 | Multiple Choice | 1 | Number Sense and Operations | 6.N.21 | C |
| 16 | Multiple Choice | 1 | Algebra | 5.A.2 | D |
| 17 | Multiple Choice | 1 | Number Sense and Operations | 6.N.15 | B |
| 18 | Multiple Choice | 1 | Geometry | 5.G.14 | C |
| 19 | Multiple Choice | 1 | Algebra | 6.A.6 | A |
| 20 | Multiple Choice | 1 | Number Sense and Operations | 6.N.13 | A |
| 21 | Multiple Choice | 1 | Geometry | 6.G.5 | B |
| 22 | Multiple Choice | 1 | Number Sense and Operations | 6.N.25 | D |
| 23 | Multiple Choice | 1 | Measurement | 6.M.5 | A |
| 24 | Multiple Choice | 1 | Number Sense and Operations | 6.N.22 | A |
| 25 | Multiple Choice | 1 | Statistics and Probability | 6.S.7 | C |

**Standard 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 | Number Sense and Operations | 6.N.15 | n/a |
| 27 | Extended Response | 3 | Algebra | 5.A.5 | n/a |
| 28 | Extended Response | 3 | Number Sense and Operations | 6.N.9 | n/a |
| 29 | Short Response | 2 | Measurement | 6.M.1 | n/a |
| 30 | Short Response | 2 | Statistics and Probability | 5.S.7 | n/a |
| 31 | Extended Response | 3 | Geometry | 6.G.7 | n/a |
| 32 | Short Response | 2 | Number Sense and Operations | 6.N.25 | n/a |
| 33 | Short Response | 2 | Geometry | 5.G.12 | n/a |
| 34 | Short Response | 2 | Number Sense and Operations | 6.N.11 | n/a |
| 35 | Extended Response | 3 | Algebra | 5.A.4 | n/a |