New York State Testing Program

Mathematics Test
Book 1

Grade **7**

March 6–12, 2008

CTB McGraw-Hill

TIPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

- Be sure to read carefully all the directions in the test book.

- Read each question carefully and think about the answer before choosing your response.

This picture means that you will use your ruler.

This picture means that you will use your protractor.

Sample A

Use your ruler to help you solve this problem.

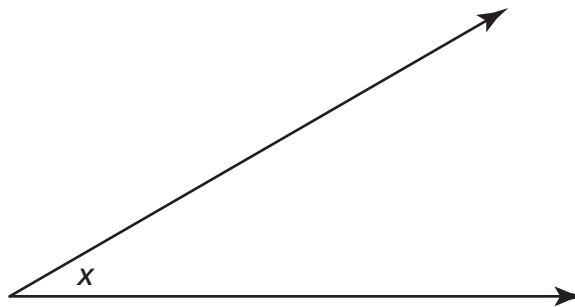What is the area, in square centimeters, of the rectangle shown below?

A   15

B   17

C   30

D   34

Sample B

Use your protractor to help you solve this problem.

What is the measure of angle x shown below?

A   30°

B   45°

C   90°

D   150°

STOP

1   What are the coordinates of point P?

A   (2, 3)

B   (3, 2)

C   (–2, 3)

D   (3, –2)

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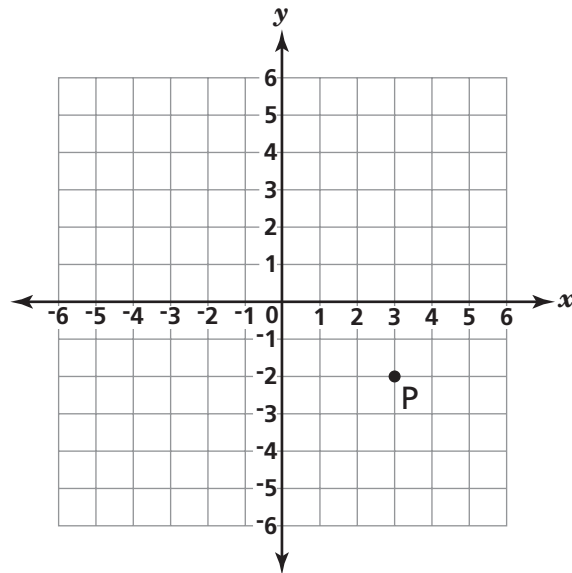
2   What is 6,200 milliliters converted to liters?

| 1 liter = 1,000 milliliters |

A   62

B   6.2

C   620

D   0.62

3   What value of *x* makes the equation below true?

$$6x - 9 = 39$$

A   5

B   8

C   13

D   24

Book 1

4 A polygon is plotted on the coordinate plane below.
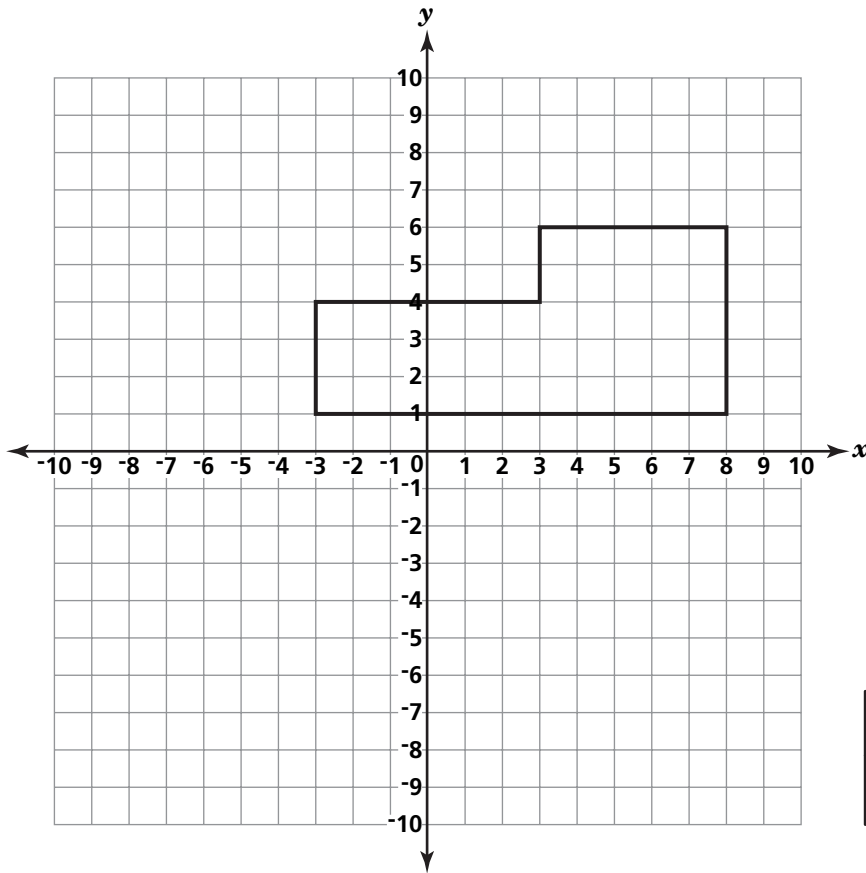
KEY

☐ = 1 square unit

What is the area, in square units, of the polygon?

A 25

B 32

C 43

D 55

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5 Michael enters a 120-mile bicycle race. He bikes 24 miles an hour. What is Michael's finishing time, in hours, for the race?

$$d = rt$$

A 2

B 5

C 0.2

D 0.5

6 Which of these is an irrational number?

A −2

B $\sqrt{56}$

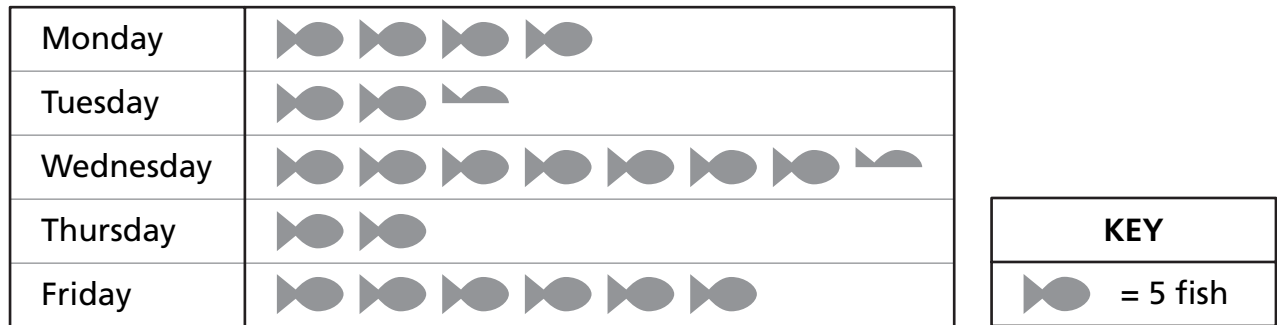**C** $\sqrt{64}$

D 3.14

7 What is the least common multiple (LCM) of 8, 12, and 18?

A 24

B 36

C 48

D 72

8 The number of fish sold at a fish market during a certain week is shown in the pictograph below.

FISH SOLD

Monday	▶◐ ▶◐ ▶◐ ▶◐
Tuesday	▶◐ ▶◐ ◡
Wednesday	▶◐ ▶◐ ▶◐ ▶◐ ▶◐ ▶◐ ▶◐ ◡
Thursday	▶◐ ▶◐
Friday	▶◐ ▶◐ ▶◐ ▶◐ ▶◐ ▶◐

KEY	
▶◐	= 5 fish

What is the total number of fish sold on Tuesday and Wednesday?

A   10

B   25

C   45

D   50

9 What is the value of the expression $r^2 + s^3$ when $r = 5$ and $s = 3$?

A   19

B   34

C   52

D   85

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10 Veronica has a box that contains 24 pictures of her family, 6 pictures of her dog, and 12 pictures of her friends. Veronica randomly chooses one picture from the box. Which statement **best** describes what will likely occur?

A   She will definitely pick a picture of her family.

B   She will most likely pick a picture of her family.

C   She is equally likely to pick a picture of her family or of her dog.

D   She is equally likely to pick a picture of her family, of her dog, or of her friends.

11 Simplify the expression below.

$$5 + 3 \cdot 2 - 4^2 \cdot |{-}2|$$

A   43

B   48

C   −16

D   −21

12 If the circumference of a circle is 16π, what is the radius?

$$C = 2\pi r$$

A 4

B 8

C 16

D 32

13 A butterfly weighs only about 5.0×10^{-5} of a kilogram. What is this number written in standard form?

A 0.00005

B 0.000005

C 50,000

D 500,000

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14 Every day at 7 A.M., Tamara recorded the outside temperature in degrees Fahrenheit (°F). She placed the data for one week in the table below.

Day	Temperature (°F)
Monday	58
Tuesday	48
Wednesday	49
Thursday	61
Friday	58
Saturday	51
Sunday	39

What is the **range** for the temperatures given in the table?

A   19°F

B   22°F

C   38°F

D   61°F

15 Hector spent $17 for a tube of paint and 5 brushes. The tube of paint cost $8. Which equation can be used to find b, the cost of each brush?

A $17 = 5b + 8$

B $17 = 8b + 5$

C $17b = 5 + 8$

D $17 = b + 5 + 8$

16 A number cube is a cube with each side labeled with a number 1 through 6. Debbie rolled a number cube 60 times. The tally table below shows the number of times each number, 1 through 6, appeared.

ROLLING A NUMBER CUBE

Number on the Cube	Number of Rolls
1	卌 I
2	卌 卌 卌
3	卌 卌 卌 III
4	卌 卌 I
5	III
6	卌 II

Before her experiment, Debbie expected each number on the cube to appear an equal number of times. Which statement **best** compares the results of Debbie's rolls with her expectations?

A Debbie rolled more 5s than expected.

B Debbie rolled fewer 4s than expected.

C Debbie rolled more 3s than expected.

D Debbie rolled fewer 2s than expected.

17 Between which two integers does $\sqrt{29}$ lie?

A 4 and 5

B 5 and 6

C 13 and 14

D 14 and 15

Go On

18 Kasim's Video Store has received a shipment of DVDs. The table below shows the number of each type of DVD in the shipment.

DVD SHIPMENT

Type	Number of DVDs
Action	12
Science Fiction	3
Comedy	6
Western	9

Kasim selects a DVD at random from the shipment. What is the probability that he chooses a western?

A $\frac{1}{4}$

B $\frac{1}{9}$

C $\frac{9}{21}$

D $\frac{9}{30}$

19 The flower box in front of the main city library weighs 124 ounces. What does the flower box weigh in pounds?

1 pound = 16 ounces

A $7\frac{1}{2}$

B $7\frac{3}{4}$

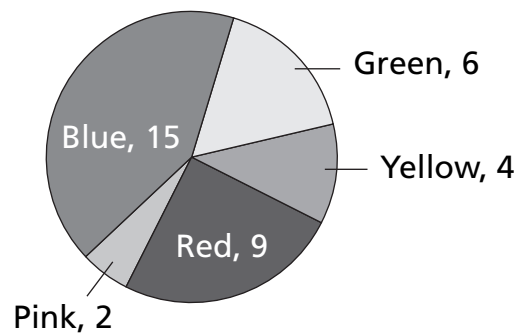C 868

D 1984

20   What is the greatest common factor (GCF) of 108 and 420?

A   6

B   9

C   12

D   18

21   Alison is doing the laundry for her family and decides to count all the T-shirts. She creates the graph below to show how many T-shirts of each color her family has placed in the laundry.
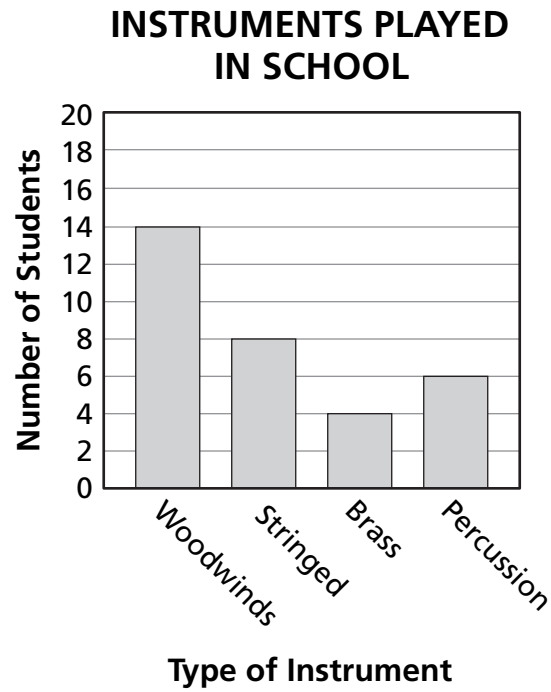

[not drawn to scale]

What percent of the total number of T-shirts is red?

A   20%

B   25%

C   36%

D   90%

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Page 15

22 The graph below shows the type of instruments played by students in the school.
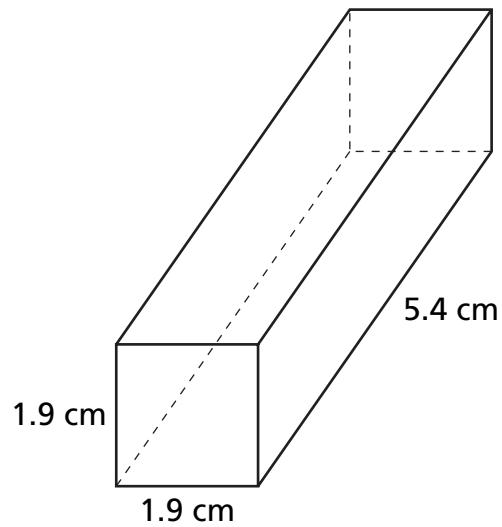
**INSTRUMENTS PLAYED
IN SCHOOL**

Janelle is chosen to perform a solo. What is the probability that she plays a stringed instrument?

A $\dfrac{6}{24}$

B $\dfrac{8}{24}$

C $\dfrac{6}{32}$

D $\dfrac{8}{32}$

23 What is the best **estimation**, in square centimeters, for the surface area of the rectangular prism shown below?

5.4 cm

1.9 cm

1.9 cm

[not drawn to scale]

Surface area $= 2wl + 2lh + 2wh$

A 14

B 20

C 32

D 48

24 A box contains 3 pens, 2 markers, and 1 highlighter. Tara selects one item at random and does not return it to the box. She then selects a second item at random. What is the probability that Tara selects 1 pen and then 1 marker?

A $\dfrac{5}{36}$

B $\dfrac{27}{30}$

C $\dfrac{6}{30}$

D $\dfrac{6}{36}$

25 A school store's expenses and sales for a three-month period are shown in the table below.

Month	Expense	Sales
September	$125.00	$47.00
October	$0.00	$65.00
November	$57.00	$28.00

Based on the data in the table, what is the loss or profit for the store for the three-month period?

A $182.00 loss

B $42.00 loss

C $15.00 profit

D $140.00 profit

26 Which expression has the **greatest** value?

A 1.045×10^2

B 1.45×10^2

C 8.4×10^{-2}

D -8.4×10^2

27 Which tool is **most** appropriate for measuring the mass of a serving of cheese?

A ruler

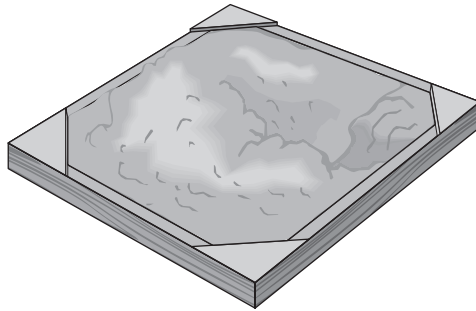**B** thermometer

C measuring cup

D weighing scale

28 There are 500 students in Andrew's school. Andrew wants to survey a sample of students to determine the most popular school subject. Which sampling method is the **best** to use to predict the most popular school subject?

A randomly select 50 students from the student list of 500

B randomly select 10 students having lunch in the cafeteria

C select the first 50 girls entering the auditorium for an assembly

D select the first 25 students leaving the building after school

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29 Carlos used 4 cubic yards of sand to fill his sandbox.

How many cubic feet of sand are in 4 cubic yards?

1 cubic yard = 27 cubic feet

A 9

B 12

C 64

D 108

30 Which shape could be the base of a cone?

A circle

B square

C triangle

D octagon

STOP

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