

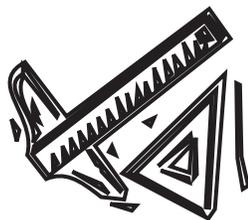


# ***New York State Testing Program***

---

## **Mathematics**

### **Book 1**



**May 4–5, 2004**



Developed and published by CTB/McGraw-Hill LLC, a subsidiary of The McGraw-Hill Companies, Inc., 20 Ryan Ranch Road, Monterey, California 93940-5703. Copyright © 2004 by New York State Education Department. All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of New York State Education Department.

## Part 1

### Sample A

The school auditorium was  $\frac{7}{8}$  full. What percent of the auditorium was full?

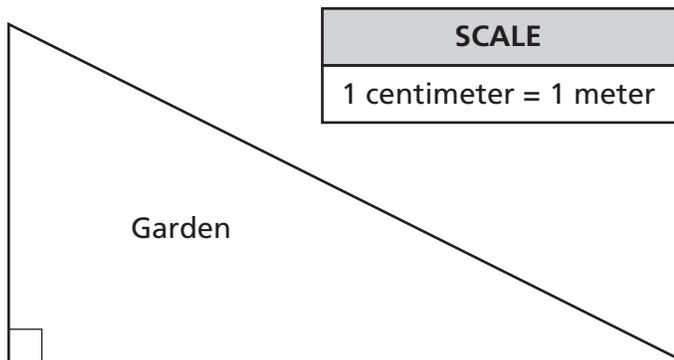
- A 7.8%
- B 37.5%
- C 62.5%
- D 87.5%

### Sample B



Use your ruler to help you solve this problem.

A garden is in the shape of a triangle as shown in the figure below. The garden is to be enclosed by a fence.



Based on the scale, how much fencing is needed to enclose the garden?

- F 19.1 meters
- G 20.7 meters
- H 23.5 meters
- J 26.6 meters

# STOP

**1** What is the value of the expression  $3a + 2b$ , if  $a = 4$  and  $b = 9$ ?

- A 18
- B 23
- C 25
- D 30

**2** Clara's class is going on a trip to the local science museum. Twenty-five students, one teacher, and three parents are going on the trip. The museum charges \$3.50 admission for each student and \$5.00 for each adult. How much will it cost for all the students and the adults to enter the museum?

- F \$87.50
- G \$101.50
- H \$102.50
- J \$107.50

**3** Hummingbirds migrate across the Gulf of Mexico. If the distance across the Gulf of Mexico is about 525 miles and hummingbirds fly at a speed of 25 miles per hour, how long does it take a hummingbird to cross the Gulf of Mexico?

- A 8.75 hours
- B 10.5 hours
- C 21.0 hours
- D 25.0 hours

- 4** A company that manufactures shoes experienced a decline in shoe sales for a 5-month period, as shown in the table below.

SHOE SALES

Month	Sales (in thousands)
July	\$18.6
August	\$17.4
September	\$16.2
October	\$15.0
November	\$13.8

If sales continue to decline at the same rate, what would be the company's sales, in thousands, for December?

- F \$15.0
- G \$13.8
- H \$12.6
- J \$11.4

- 5** What is the prime factorization of 72?

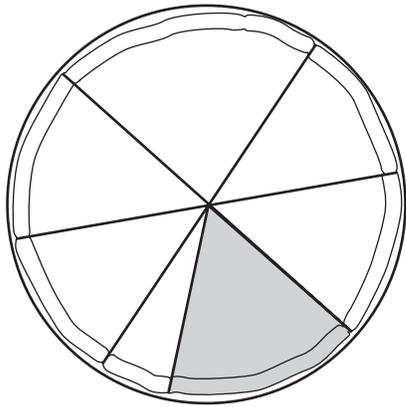
- A  $2^3 \cdot 3^2$
- B  $2^3 + 3^2$
- C  $2 \cdot 3^2 \cdot 4$
- D  $2^5 + 3^3 + 13$

- 6** In Marta's class, the ratio of students who ate tacos for lunch to the students who ate burritos was 12:18. Which fraction is an equivalent form of this ratio?

- F  $\frac{2}{8}$
- G  $\frac{4}{9}$
- H  $\frac{2}{3}$
- J  $\frac{3}{4}$

**Go On**

- 7** Juliet's dad made the mushroom pizza pictured below.



The slice that is shaded has 9 pieces of mushroom on it. What is the most reasonable estimate for the number of pieces of mushroom on the whole pizza?

- A** 100–125
- B** 75–100
- C** 50–75
- D** 25–50

- 8** Manuel and Jerry are trying to find the value of the expression  $(5 + 7)^2$ .

Jerry plans to first square 5, then square 7, and then add the products together.

Manuel plans to add five and seven together, then square the sum.

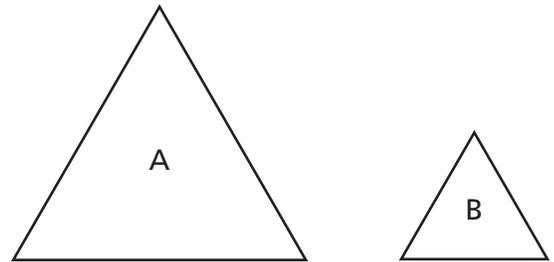
Which statement is true?

- F** Only Jerry has a correct strategy.
- G** Only Manuel has a correct strategy.
- H** Both Manuel and Jerry have a correct strategy.
- J** Neither Manuel nor Jerry has a correct strategy.

- 9** The expression  $\frac{1}{15} \div \left(\frac{4}{15} + \frac{1}{3}\right)$  is equivalent to

- A**  $\frac{1}{9}$
- B** 9
- C**  $\frac{1}{5}$
- D** 5

- 10** The lengths of the sides of equilateral triangle A are twice the lengths of the sides of equilateral triangle B. How many of triangle B can fit in triangle A?



- F** 2
- G** 3
- H** 4
- J** 6

**11** Jane's class is trying to raise money for their class trip to Washington, D.C., by holding a car wash. On Saturday the class washed 25 cars, charging \$6.50 for each car. Their expenses for the day were \$12.25. Which expression can Jane use to figure out how much money the class had left after the expenses were paid?

- A  $25 \times (\$6.50 + \$12.25)$
- B  $\$12.25 - (25 \times \$6.50)$
- C  $(25 \times \$6.50) + \$12.25$
- D  $(25 \times \$6.50) - \$12.25$

**12** Jacob stood in line to pick up a souvenir postcard at the museum. All the postcards were either blue, white, or green, with a picture of a fish, insect, or bird. There was an equal number of each type of postcard. What is the probability that Jacob was randomly handed a green postcard with a fish on it?

- F  $\frac{1}{2}$
- G  $\frac{1}{3}$
- H  $\frac{1}{6}$
- J  $\frac{1}{9}$

**13** Which mathematical expression is equivalent to the expression "nine less than six times the number  $t$ "?

- A  $6t - 9$
- B  $6 - 9t$
- C  $9 - 6t$
- D  $9t - 6$

**Go On**

**14** Bethany watched a movie about a spaceship that traveled 93 million miles through space. What is the number of miles the spaceship traveled in scientific notation?

- F  $9.3 \times 10^6$
- G  $93 \times 10^6$
- H  $9.3 \times 10^7$
- J  $93 \times 10^7$

**15** The Bulls and the Lions are high school basketball teams. The table below shows the final scores of their playoff games.

**BASKETBALL SCORES**

	Game 1	Game 2	Game 3	Game 4	Game 5
Bulls	50	28	63	48	39
Lions	49	35	64	40	45

Based on the scores in the table, which statement is true?

- A The Bulls won 20% of the games.
- B The Bulls won 30% of the games.
- C The Lions won 40% of the games.
- D The Lions won 60% of the games.

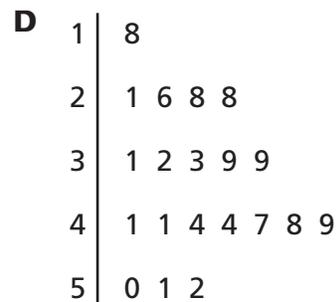
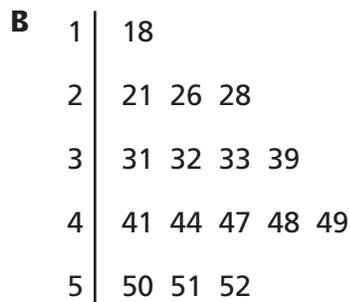
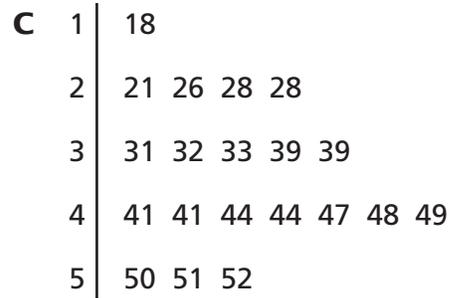
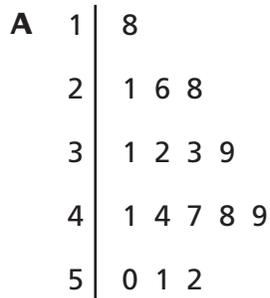
**16** Marilyn's teacher allowed her to take a makeup test. She scored  $\frac{24}{60}$  on the original test and  $\frac{28}{40}$  on the makeup test. By what percentage did Marilyn increase her score?

- F 4%
- G 20%
- H 30%
- J 52%

- 17** Trent measured the humidity outside his house every day at noon for 20 days. These were his results:

33 21 39 49 44  
28 18 41 50 48  
26 31 44 52 41  
28 32 51 47 39

Which is a correct stem-and-leaf plot for Trent's measures?



- 18** The sum of two numbers is 6. The sum of the squares of the same two numbers is 26. What are the numbers?

- F** 6 and 0  
**G** 3 and 3  
**H** 2 and 4  
**J** 1 and 5

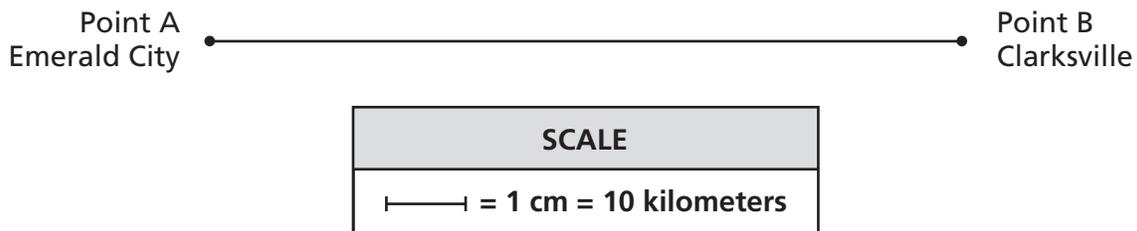
**Go On**

**19** Two angles are complementary. One angle measures 60 degrees. What is the measure of the other angle?

- A 30 degrees
- B 60 degrees
- C 90 degrees
- D 120 degrees

**20**  Use your ruler to help you solve this problem.

A family traveled by car from Point A (Emerald City) to Point B (Clarksville) in 2.5 hours. If they made no stops, what was their average rate of speed in kilometers per hour?

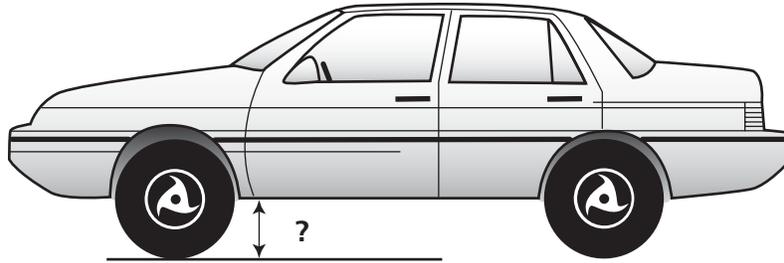


- F 10
- G 25
- H 30
- J 40

**21** Tom received a \$75 gift certificate for the local sporting goods store. He bought two baseballs for \$1.79 each, a baseball glove for \$49.99, and a baseball bat for \$12.19. About how much of his gift certificate will he have left?

- A \$9.00
- B \$11.00
- C \$64.00
- D \$66.00

- 22** In the diagram below, the distance from the ground to the bottom of the car is equal to half the height of the tire. Each tire has a circumference of 9.42 feet.



How far is the bottom of the car from the ground?

- F** 0.75 foot
- G** 1.00 foot
- H** 1.50 feet
- J** 3.00 feet

- 23** Jeremy has a box with a rectangular lid. The top of the lid has an area of 392 square centimeters. The ratio of the width to the length of the lid is 1:8. What are the dimensions of the lid?

- A** 4 cm by 98 cm
- B** 7 cm by 56 cm
- C** 8 cm by 49 cm
- D** 8 cm by 64 cm

- 24** Sam bought 6 doughnuts at the prices shown below.

Plain Doughnuts	\$0.60
Filled Doughnuts	\$0.79

Which could be the amount he spent for all the doughnuts?

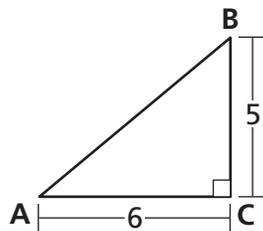
- F** \$3.38
- G** \$3.57
- H** \$3.98
- J** \$4.58

**Go On**

- 25** James has pennies, nickels, and dimes in his bank. He has *more* than \$1.60 and *less* than \$2.00 in the bank. There are 5 times as many pennies as dimes. There is an equal number of nickels and dimes. What is the exact amount of money in his bank?

- A \$1.60
- B \$1.70
- C \$1.80
- D \$1.90

- 26** What is the length of the hypotenuse of the triangle shown below?



- F  $\sqrt{61}$
- G 61
- H  $\sqrt{11}$
- J 11

- 27** Consider the real numbers M, N, P, and Q, and the following relationships:

$$\begin{aligned}M &< N \\N &< P \\Q &> P\end{aligned}$$

Which statement is always true?

- A  $Q - P > Q - N$
- B  $Q - P < N - M$
- C  $Q - N > Q - M$
- D  $Q - N < Q - M$

**STOP**



**Book 1**  
**Mathematics**  
**Grade 8**  
**May 4–5, 2004**

*The McGraw-Hill Companies*