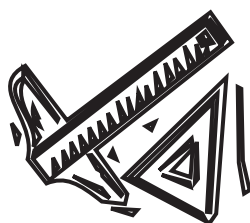




New York State Testing Program

Mathematics

Book 1



Due to differences in computer equipment, graphic depictions (e.g., maps, diagrams, graphs) may not print according to scale.

The State Education Department provides schools with manipulatives in the form of a sheet of punch-out tools for students to use when taking the Grade 4 or 8 Mathematics Tests. For Grade 4, the tools are a ruler, counters, and pattern blocks. For Grade 8, the tools are a ruler and a protractor. Manipulatives are not included with this sample test because differences in computer equipment may prevent printing according to scale.

Sample Test

**Mc
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Part 1

Sample A

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

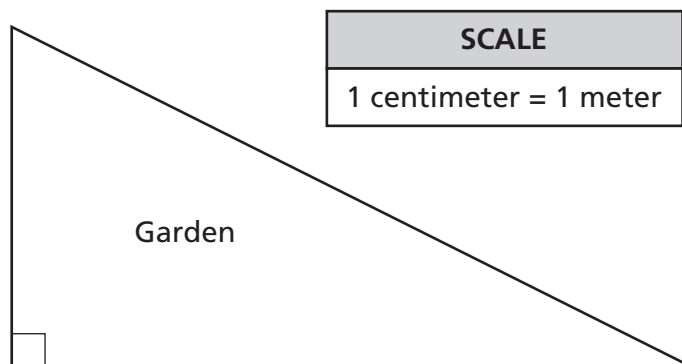
- A 7.8%
- B 37.5%
- C 62.5%
- D 87.5%

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 The distance between Earth and Mars is about 4.8732×10^7 miles. What is the standard written form of this distance?

- A** 4,873,200 miles
- B** 48,732,000 miles
- C** 487,320,000 miles
- D** 4,873,200,000 miles

2 Which property does the equation below demonstrate?

$$7(6 + 4) = 42 + 28$$

- F** associative
- G** commutative
- H** distributive
- J** identity

3 Which value of x will make the equation below true?

$$3^x = 243$$

- A** 3
- B** 5
- C** 8
- D** 9

4 Which rational number is the multiplicative inverse of $3\frac{1}{2}$?

- F** $\frac{2}{7}$
- G** $-\frac{2}{7}$
- H** $\frac{7}{2}$
- J** $-\frac{7}{2}$

5 Which number is equivalent to the expression below?

$$|-15 + 4|$$

- A** -19
- B** -11
- C** 11
- D** 19

6 An ocean sunfish lays about thirty million eggs at one time. If 1% hatch, approximately what number of eggs will hatch?

- F** 30,000
- G** 300,000
- H** 3,000,000
- J** 30,000,000

7 At the end of the annual book fair, the students at Water Middle School found that they had \$1,488.80 in the cash register. Their teacher had given them a loan of \$92.89 to buy supplies for the fair. What is the best estimate of the amount of money they had after they paid the money back to the teacher?

- A** \$1,300.00
- B** \$1,400.00
- C** \$1,500.00
- D** \$1,600.00

8 Maria and Toni are sisters and Jacob and Marcel are brothers. Maria's age plus Toni's age equals 36. Jacob's age plus Marcel's age equals 33. Maria's age plus Jacob's age equals 29. Toni's age is 21. How old is Marcel?

- F** 14
- G** 15
- H** 19
- J** 21

9 To make 3 dozen cookies, a recipe calls for 4 eggs and $\frac{1}{2}$ cup of chocolate chips. Ben wants to make 12 dozen cookies for a class picnic. How many eggs and how many cups of chocolate chips does he need?

- A** 4 eggs, 1 cup chocolate chips
- B** 4 eggs, 2 cups chocolate chips
- C** 16 eggs, 1 cup chocolate chips
- D** 16 eggs, 2 cups chocolate chips

10 The students in a math class measured and recorded their heights on a chart in the classroom. Keith's height was 1.62 meters. Which is another way to show Keith's height?

- F** 0.162 cm
- G** 16.20 cm
- H** 162 cm
- J** 1,620 cm

11 Mr. Frank wants to mix yellow paint and blue paint to get 15 ounces of green paint. The shade of green he wants requires 2 parts yellow paint and 3 parts blue paint. How many ounces of yellow paint does he need for his mix?

- A** 2
- B** 6
- C** 9
- D** 10

12 Julie has an after-school job in a local hardware store. Today she is restocking sockets for socket wrench sets. If the sockets are to be arranged in size from smallest to largest, which list is in the correct order?

- F** $\frac{1}{2}$, $\frac{3}{4}$, $\frac{5}{8}$, $\frac{9}{16}$
- G** $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{3}{4}$
- H** $\frac{3}{4}$, $\frac{5}{8}$, $\frac{9}{16}$, $\frac{1}{2}$
- J** $\frac{9}{16}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{1}{2}$

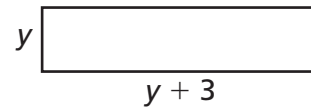
13 Bill picked $\frac{1}{2}$ of the apples on his grandmother's tree. After Bill finished, Sally picked $\frac{1}{3}$ of the apples that were left on the tree. After Sally finished, there were 40 apples left on the tree. How many apples were on the tree before they picked apples?

- A** 40
- B** 60
- C** 80
- D** 120

14 The conductor of Elm Middle School's chorus wants to arrange the chorus in groups of 3 or 5 or 9. Each time he arranges the chorus members into groups of 3 or 5 or 9, he has 2 members left over. Which could be the total number of students who are in the chorus?

- F** 17
- G** 19
- H** 47
- J** 135

15 The width of the rectangle below is represented by a certain positive number y . Its length is represented by $y + 3$.



Which expression represents the area of the rectangle?

- A** $y + (y + 3)$
- B** $y(y + 3)$
- C** $2y + 2(y + 3)$
- D** $2y + (y + 3)$

16 An odometer shows the distance a car has been driven. The odometer does not work correctly on Peter's car, and it registers only 2 miles for every 3 miles it has been driven. If his odometer shows 48 miles, how many miles has the car *actually* been driven?

- F** 16
- G** 24
- H** 32
- J** 72

17 The Suez Canal links the Mediterranean Sea to the Red Sea and is 108 miles long. If a ship is traveling the canal at a speed of 1.5 miles per hour, how many hours will it take to travel the length of the canal?

- A** 72
- B** 90
- C** 110
- D** 162

18 A drawing of the Greensburg Airport uses a scale of 1 centimeter = 300 meters. Runway A is drawn 12 centimeters long. How many meters is the actual length of the runway?

- F** 300
- G** 360
- H** 3,000
- J** 3,600

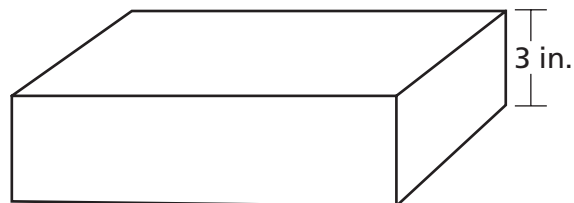
19 How does the perimeter of a rectangle change when each side is increased by 2 units?

- A** The perimeter doubles.
- B** The perimeter quadruples.
- C** The perimeter increases by 4 units.
- D** The perimeter increases by 8 units.

20 Roger is on the basketball team at Ocean View Middle School. In eleven games he scored the following number of points: 8, 10, 16, 7, 13, 8, 5, 6, 7, 10, and 8. Which statement is correct about the points Roger scored?

- F** mean = mode
- G** mean < mode
- H** median = mode
- J** median < mode

21 The volume of the rectangular solid below is 1,440 cubic inches.



What could be the length and width of this rectangular solid?

- A** 4 inches by 10 inches
- B** 8 inches by 20 inches
- C** 10 inches by 48 inches
- D** 30 inches by 40 inches

22

Marilyn has a bag of coins. The bag contains 25 wheat pennies, 15 Canadian pennies, 5 steel pennies, and 5 Lincoln pennies. She picks a coin at random from the bag. What is the probability that she picked a wheat penny?

- F** 10%
- G** 25%
- H** 30%
- J** 50%

23

Rachel is making toothpick squares. She needs four toothpicks to make one square, seven toothpicks to make a row of two squares, and ten toothpicks to make a row of three squares.

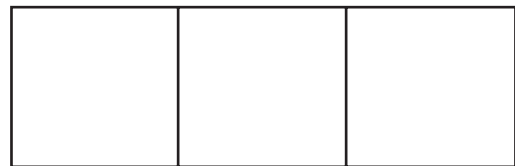
4 toothpicks



7 toothpicks



10 toothpicks



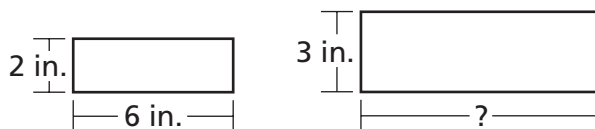
How many toothpicks will Rachel need to make a row of six squares?

- A** 22
- B** 19
- C** 16
- D** 13

24 Jane is making chocolate chip cookies for her school's bake sale. She needs one bag of chocolate chips to make 2 dozen cookies. A bag of chips costs \$2.89. Jane is planning to make 8 dozen cookies. Which expression tells Jane how much it will cost for the chips to make the cookies?

- F** $24 \times 8 \times \$2.89$
- G** $(24 \div 8) \times \$2.89$
- H** $8 \times 2 \times \$2.89$
- J** $(8 \div 2) \times \$2.89$

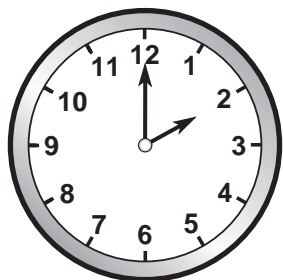
25 Melissa is creating a geometric design using similar rectangles. One of her rectangles is 2 inches wide and 6 inches long. She wants to have another rectangle that is 3 inches wide. To follow her design, how long must the second rectangle be?



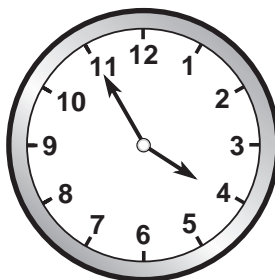
- A** 3 inches
- B** 6 inches
- C** 9 inches
- D** 12 inches

26

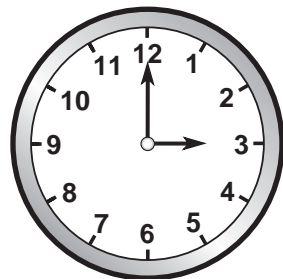
David's math class was studying angles. During class one day he looked up at the clock and noticed that the hands were making an angle of approximately 150° . Which clock face shows this angle?



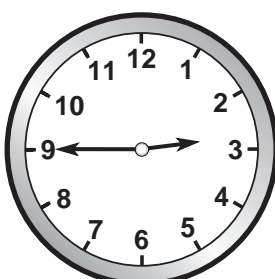
F



H



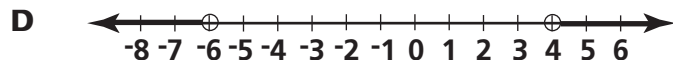
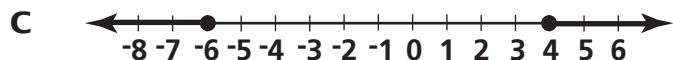
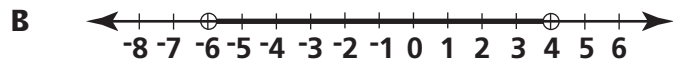
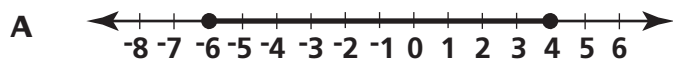
G



J

27

Which number line shows the solution to the inequality $-6 < x < 4$?



STOP

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Book 1
Mathematics
Grade 8

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