



New York State Testing Program

Mathematics Test Book 1

Grade **8**

May 5–7, 2010



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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.

Sample A

What is the shape of each base of a cylinder?

- A circle
- B rectangle
- C triangle
- D square

Sample B



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

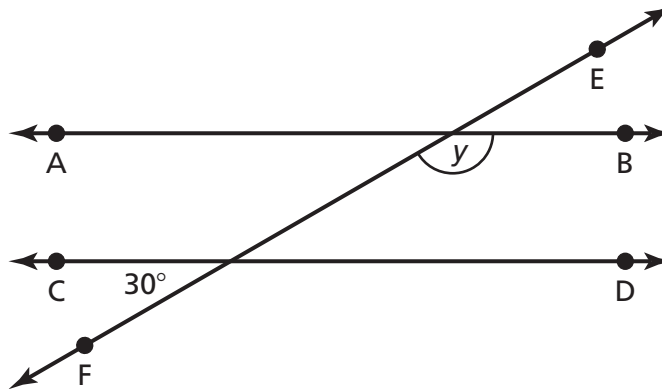
STOP

1

Simplify the expression below.

$$12ab + 8ab + 5ab$$

- A $3ab$
- B $25ab$
- C $25(3ab)$
- D $25 + ab$

2In the diagram below, $\overleftrightarrow{AB} \parallel \overleftrightarrow{CD}$, and \overleftrightarrow{EF} intersects both lines.

[not drawn to scale]

What is the measure of $\angle y$?

- A 30°
- B 60°
- C 120°
- D 150°

Go On

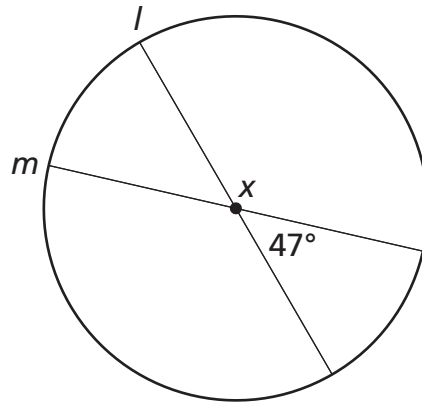
3

Which situation is **best** represented by the expression $2c - 5$?

- A Alicia walked 2 miles fewer than 5 times the number of miles, c , Courtney walked.
- B Alicia walked 5 miles fewer than 2 times the number of miles, c , Courtney walked.
- C Alicia walked 2 more than 5 times the number of miles, c , Courtney walked.
- D Alicia walked 5 more than 2 times the number of miles, c , Courtney walked.

4

In the diagram below, line segment l and line segment m intersect at the center of the circle. What is the measure of $\angle x$?



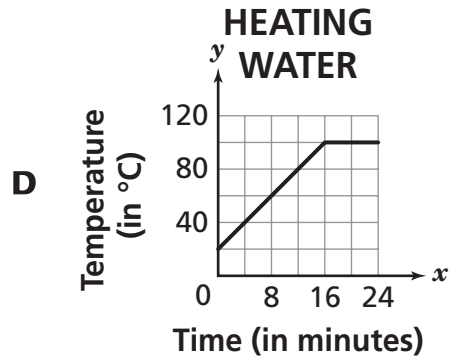
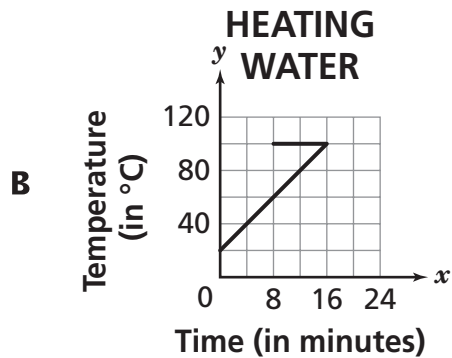
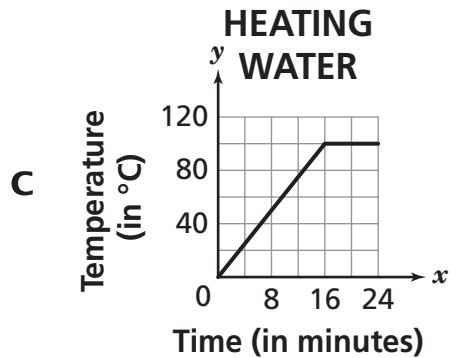
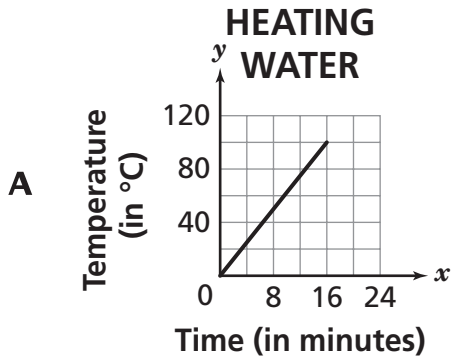
[not drawn to scale]

- A 120°
- B 133°
- C 137°
- D 143°

5

In Mr. Jenkin's science class, the students heated a beaker of water on a burner. When the experiment began, the temperature of the water was 20°C . After 8 minutes, the temperature was 60°C . Sixteen minutes after the start of the experiment, the temperature was 100°C and remained at 100°C for the next 8 minutes.

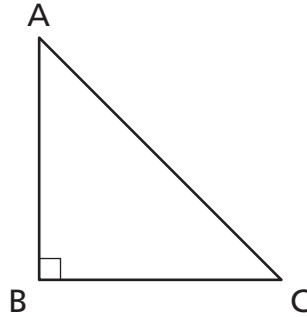
Which graph shows the change in temperature of the water in the beaker, y , over time in minutes, x ?



Go On

6

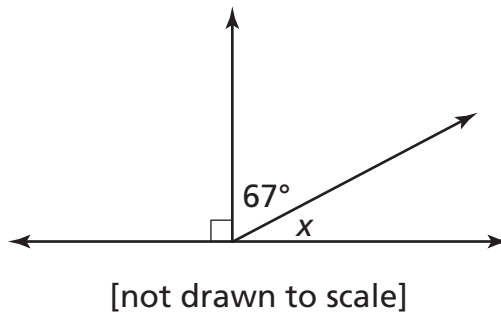
Which term **best** describes \overline{AC} in the right triangle shown below?



- A leg
- B base
- C altitude
- D hypotenuse

7

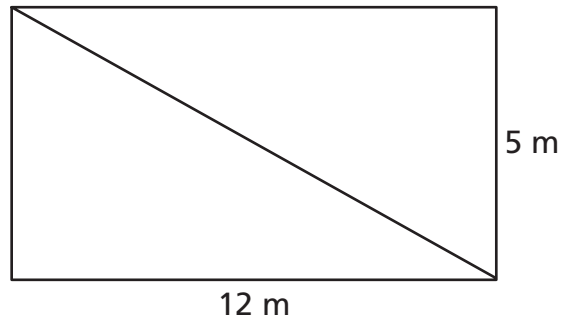
What is the measure of $\angle x$ in the diagram shown below?



- A 23°
- B 33°
- C 113°
- D 157°

8

Mr. Sanders used a diagonal board to divide a rectangular garden into two equal sections as shown in the diagram below.



[not drawn to scale]

What is the length of the diagonal?

$$c^2 = a^2 + b^2$$

- A 12 meters
- B 13 meters
- C 14 meters
- D 15 meters

9

Solve the equation below for x .

$$9(x - 5) = 4x - 5$$

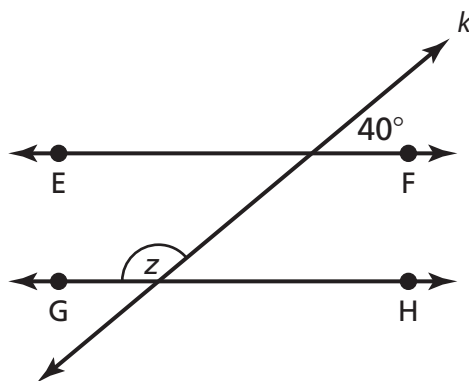
- A 8
- B 10
- C -8
- D -10

Go On

10 If $P = a^2 + a - 1$ and $R = -a - 1$, which expression represents $P + R$?

- A** $a^2 + 2$
- B** $a^2 - 2$
- C** $a^2 + 2a$
- D** $a^2 + 2a - 2$

11 In the diagram below, $\overleftrightarrow{EF} \parallel \overleftrightarrow{GH}$, and line k intersects both lines.

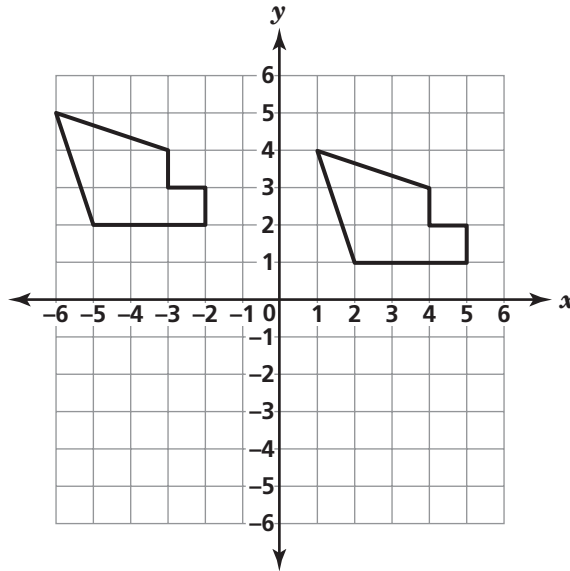


[not drawn to scale]

What is the measure of $\angle z$?

- A** 40°
- B** 50°
- C** 130°
- D** 140°

- 12 Which term **best** describes the transformation shown below?



- A dilation
- B rotation
- C reflection
- D translation

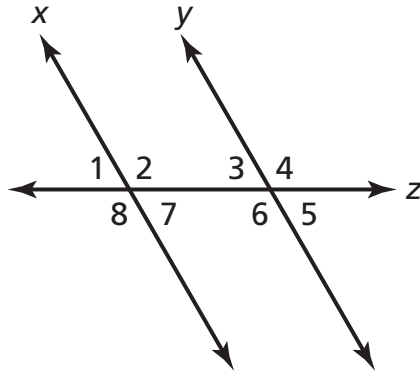
- 13 Jerome surveyed 643 skateboarders and found that 209 of them preferred wood skateboards to plastic or aluminum skateboards. Based on the number of people surveyed, what is the **most reasonable estimation** of the percent of skateboarders who preferred wood skateboards?

- A 10%
- B 30%
- C 40%
- D 50%

Go On

14

In the diagram below, line x is parallel to line y , and line z is a transversal.



[not drawn to scale]

Which angles are alternate interior angles?

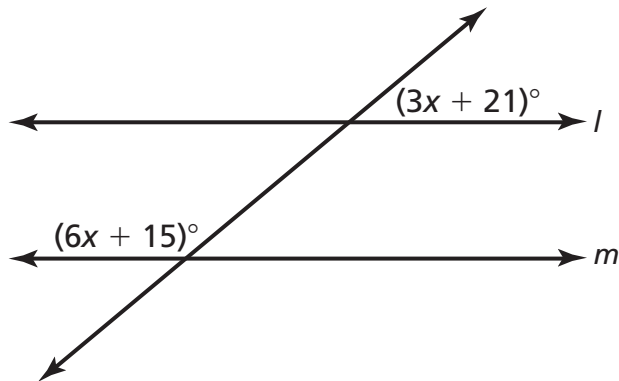
- A** $\angle 1$ and $\angle 7$
- B** $\angle 3$ and $\angle 7$
- C** $\angle 2$ and $\angle 3$
- D** $\angle 4$ and $\angle 8$

15

Kevin reflects square $ABCD$ on a coordinate plane over the y -axis to create image $A'B'C'D'$. Which property changed when he created image $A'B'C'D'$?

- A** the measure of $\angle ABC$
- B** the area of square $ABCD$
- C** the position of figure $ABCD$
- D** the perimeter of square $ABCD$

- 16** In the diagram below, line l and line m are parallel.



[not drawn to scale]

Which equation could be used to solve for x ?

- A** $6x + 3x = 15 + 21$
- B** $6x + 15 = 3x + 21$
- C** $6x + 15 + 3x + 21 = 90$
- D** $6x + 15 + 3x + 21 = 180$

- 17** Simplify the expression below.

$$(x^2y^3)(x^4y^2)$$

- A** x^6y^5
- B** x^8y^6
- C** $2x^8y^6$
- D** $2x^6y^5$

Go On

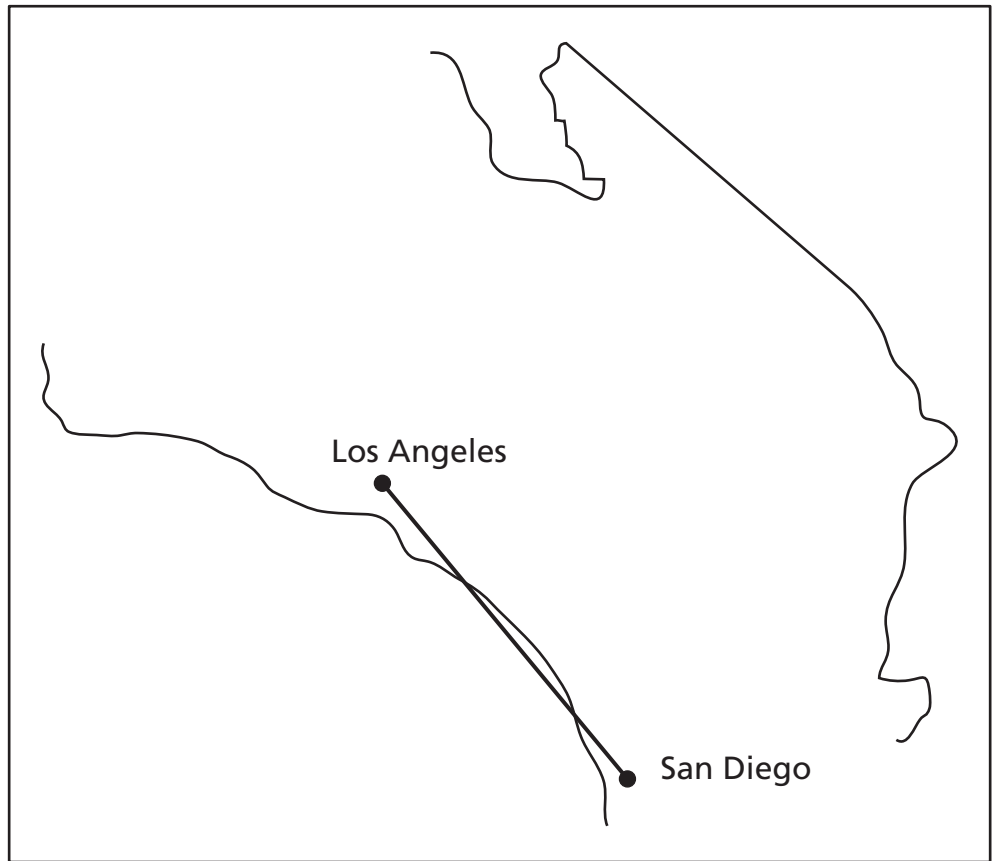
18



Use your ruler to help you solve this problem.

Sonia draws a line between Los Angeles and San Diego on the map below to find the shortest distance between the two cities.

SCALE
1 inch = 50 miles



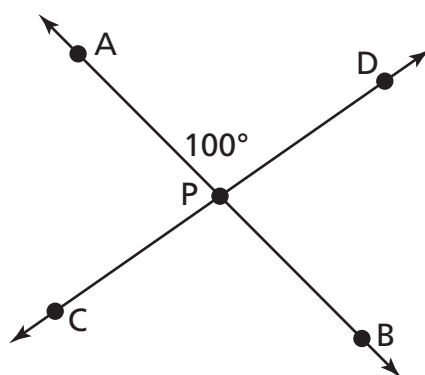
Based on the scale, what is the distance, in miles, between the two cities?

- A 25
- B 50
- C 100
- D 150

19 Which expression is a trinomial?

- A $4x^3$
- B $7x + 12$
- C $3x^3 + 3x^2$
- D $5x^3 + 3x^2 - 11$

20 In the diagram below, \overleftrightarrow{AB} intersects \overleftrightarrow{DC} at point P.



[not drawn to scale]

What is the measure of $\angle CPB$ in the figure?

- A 80°
- B 90°
- C 100°
- D 105°

Go On

21 Which is the name of the expression shown below?

$$2x^2y - 5x + 3$$

- A term
- B equation
- C coefficient
- D polynomial

22 What is the greatest common factor (GCF) of $12x$ and $(3x^2 + 6x)$?

- A 3
- B $3x$
- C $x + 2$
- D $3x(x + 2)$

23 The distance between two cities on a map is 2 inches. The map was drawn using the scale shown below.

$1 \text{ inch} = 344 \text{ miles}$

What is the actual distance, in miles, between the two cities?

- A 86
- B 344
- C 688
- D 1,032

24

Tony joined a book club. He received 8 free books when he joined. The table below shows the total number of books, n , he had each month, t , since joining the club.

TONY'S BOOKS

Month (t)	Total Number of Books (n)
0	8
1	11
2	14
3	17
4	20

Which equation can be used to find the total number of books, n , Tony will have from the book club after t months?

- A** $n = 8t$
- B** $n = 3t$
- C** $n = 8t + 3$
- D** $n = 3t + 8$

25

Which inequality represents the statement below?

One more than 2 times n is greater than 21.

- A** $2n > 21$
- B** $n + 3 > 21$
- C** $2n + 21 > 1$
- D** $2n + 1 > 21$

Go On

- 26** Simplify the expression below.

$$\frac{4x^3 + 8x^2 - 10x}{2x}$$

- A** $2x^2 + 4x - 5$
- B** $2x^2 + 4x - 10$
- C** $8x^3 + 4x^2 - 5$
- D** $8x^4 + 16x^3 - 10x^2$

- 27** Sarah went on a one-day bus tour from Las Vegas to the Grand Canyon. The cost of the bus ticket was \$80. She also paid 15% of the cost of the ticket as a tip to the bus driver. What was the amount of the tip that Sarah paid the bus driver?

- A** \$5
- B** \$12
- C** \$15
- D** \$19

STOP



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