



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

## **Mathematics Test Book 1**

Grade **8**

**March 6–12, 2008**



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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?



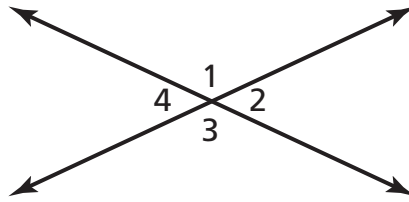
- A 15
- B 17
- C 30
- D 34

**STOP**



**1**

In the diagram below, which pair of angles has the same measure?



[not drawn to scale]

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

**2**

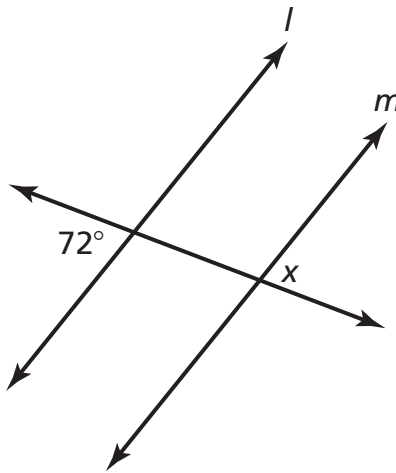
Which situation is **best** represented by the expression  $4h + 2$ ?

- A Keba spends 4 hours babysitting and 2 hours traveling.
- B Keba spends 4 hours babysitting and receives \$2 in travel expenses.
- C Keba will be paid \$4 for babysitting and spends 2 hours traveling.
- D Keba will be paid \$4 for every hour of babysitting plus \$2 for travel costs.

**Go On**

**3**

In the diagram below, line  $l$  and line  $m$  are parallel.



[not drawn to scale]

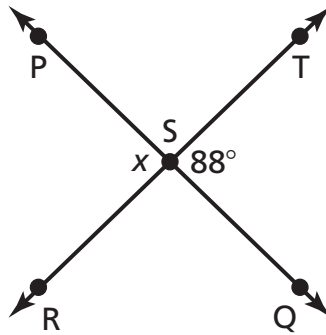
What is the measure of  $\angle x$ ?

- A  $18^\circ$
- B  $72^\circ$
- C  $108^\circ$
- D  $162^\circ$



4

In the diagram below,  $\overleftrightarrow{PQ}$  intersects  $\overleftrightarrow{RT}$  at point S, and the measure of  $\angle TSQ$  is  $88^\circ$ .



[not drawn to scale]

What is the measure, in degrees, of  $\angle x$ ?

- A 88
- B 92
- C 178
- D 268

5

Simplify the expression below.

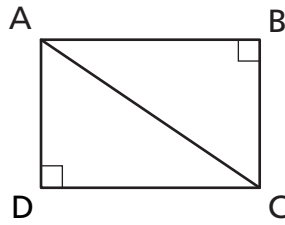
$$5x(2x - 5)$$

- A  $10x - 5$
- B  $10x^2 - 5$
- C  $10x - 25x$
- D  $10x^2 - 25x$

**Go On**

**6**

Rectangle ABCD is formed by triangle ABC and triangle ACD, as shown below.



Which side of triangle ABC is the hypotenuse?

- A  $\overline{AB}$
- B  $\overline{AC}$
- C  $\overline{BC}$
- D  $\overline{CD}$

**7**

What is the simplified form of the expression below?

$$\frac{8x^6 - 6x^3}{2x^2}$$

- A  $4x^3 - 3$
- B  $4x^4 - 3$
- C  $4x^3 - 3x$
- D  $4x^4 - 3x$

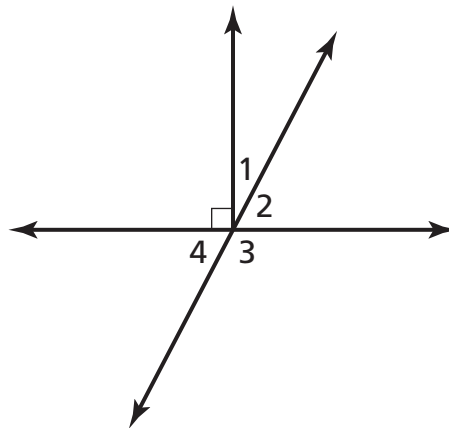
8

Lamar claims that the weight,  $w$ , of her cat is **at most** 11 pounds. What inequality represents her claim?

- A  $w \leq 11$
- B  $w \geq 11$
- C  $w < 11$
- D  $w > 11$

9

In the diagram below, which pair of angles is complementary?



[not drawn to scale]

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

**Go On**

**10**

Jessica went shopping for a new watch. She found a watch that was originally priced at \$50 on sale for \$40. By what percent had the watch been marked down?

- A 10%
- B 20%
- C 25%
- D 40%

**11**

Multiply  $(a + 2)(3a - 1)$ .

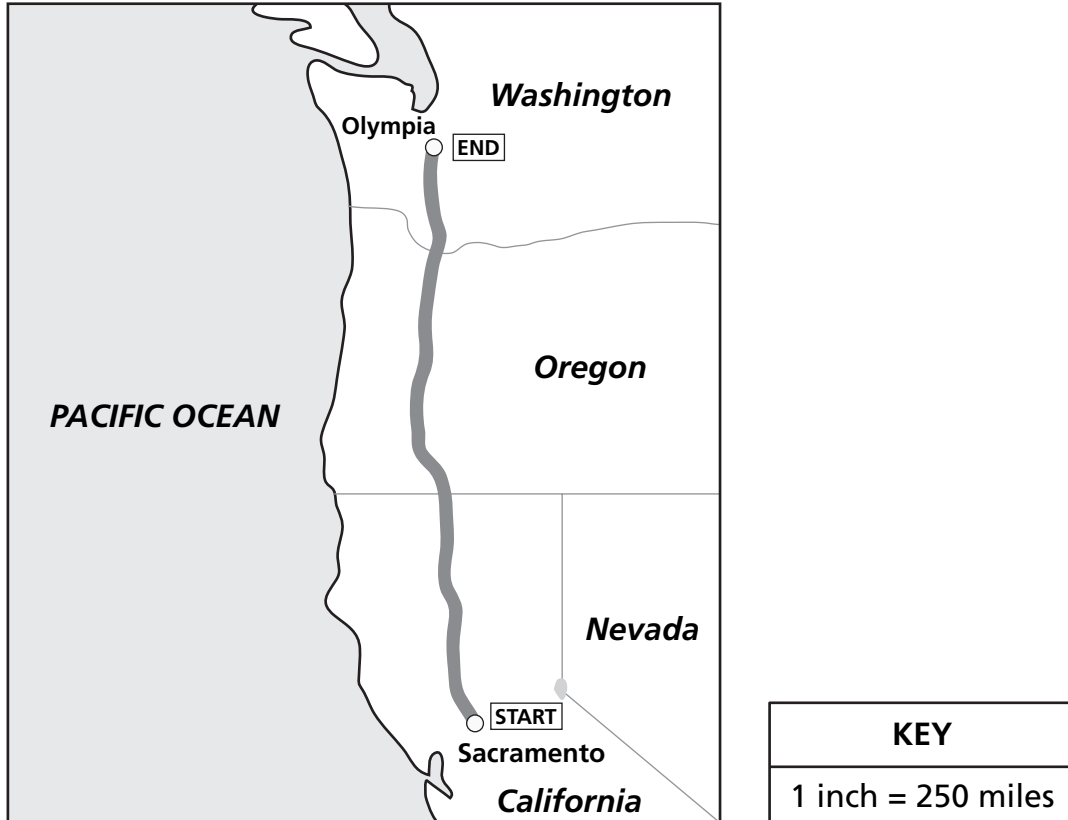
- A  $3a^2 - 2$
- B  $3a^2 + 5a$
- C  $3a^2 + 4a - 2$
- D  $3a^2 + 5a - 2$

12



Use your ruler to help you solve this problem.

Diane is taking a trip from Sacramento, California, to Olympia, Washington. Her route is shown on the map below.

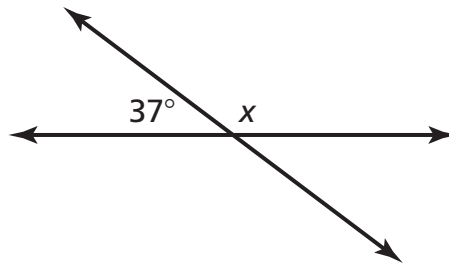


According to the map, what is the **approximate** distance from Sacramento, California, to Olympia, Washington?

- A 625 miles
- B 750 miles
- C 875 miles
- D 1,000 miles

**Go On**

- 13** In the diagram below, what is the measure of angle  $x$ ?

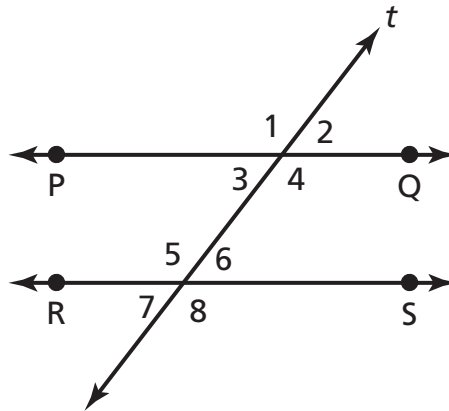


[not drawn to scale]

- A**  $37^\circ$
- B**  $53^\circ$
- C**  $127^\circ$
- D**  $143^\circ$
- 
- 14** The cost of Cynthia's dinner is \$15.20. She pays an additional tip that is 20% of the cost of the dinner. What is the **best** estimate for the amount of the tip?
- A** \$2.00
- B** \$3.00
- C** \$4.00
- D** \$5.00

**15**

In the diagram below,  $\overleftrightarrow{PQ} \parallel \overleftrightarrow{RS}$ , and transversal  $t$  intersects both lines.



[not drawn to scale]

Which angle is the same size as  $\angle 7$ ?

- A  $\angle 1$
- B  $\angle 3$
- C  $\angle 4$
- D  $\angle 5$

**16**

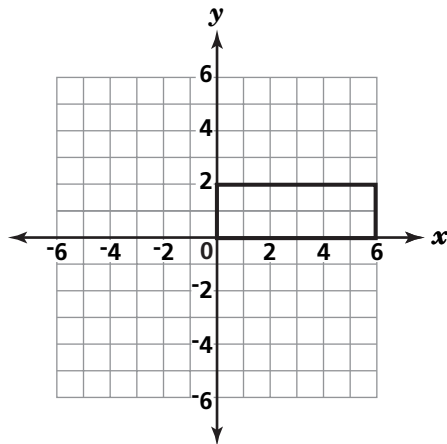
Find the value of  $x$  in the equation below.

$$3(x + 2) = x$$

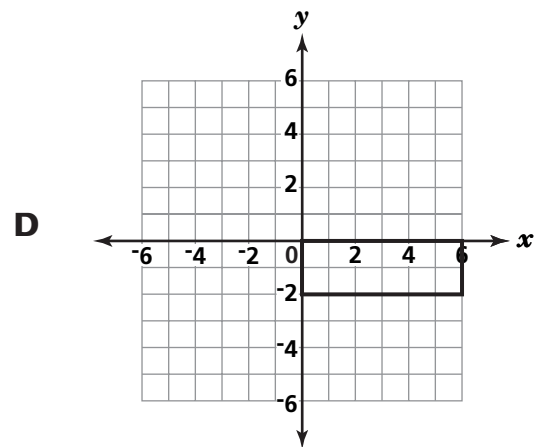
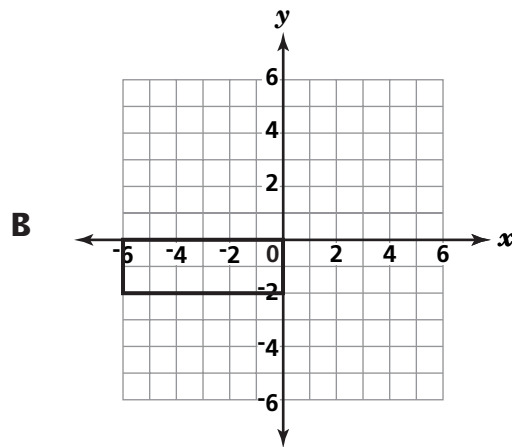
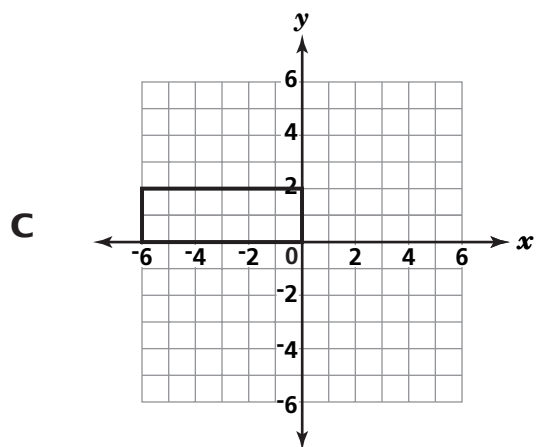
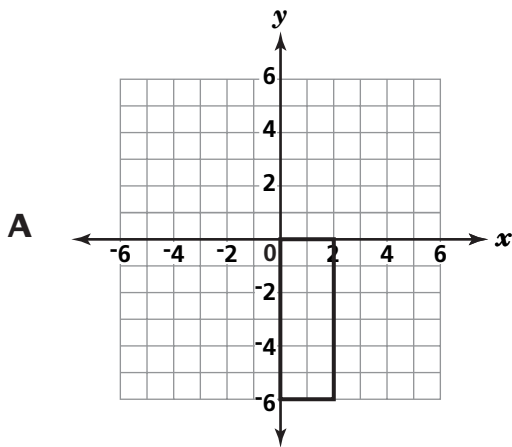
- A  $-3$
- B  $-1$
- C  $2$
- D  $3$

**Go On**

A rectangle is plotted on the coordinate plane below.



Which image shows a  $90^\circ$  clockwise rotation about the origin?





- 18** What verbal expression is the same as the algebraic expression below?

$$8 - 3x$$

- A three times a number minus eight
- B three minus eight times a number
- C eight times a number minus three
- D eight minus three times a number

- 19** Simplify the expression below.

$$\frac{12x^2y^3}{3xy}$$

- A  $4xy^2$
- B  $4x^2y^2$
- C  $\frac{4}{xy^2}$
- D  $\frac{4x}{y^2}$

***Go On***

**20**

Simplify the expression below.

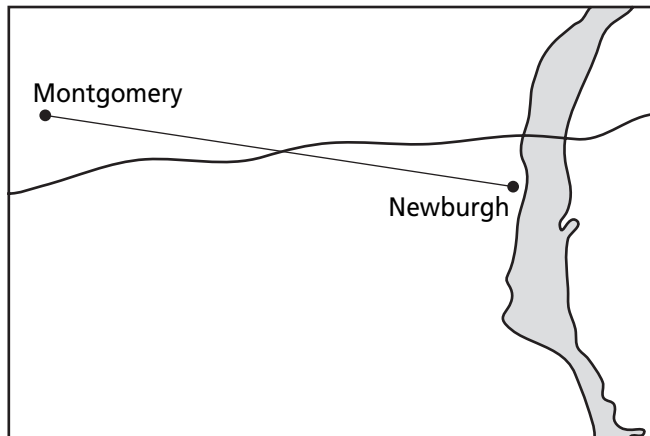
$$10y^2 - 15y^2$$

- A -5
- B 5
- C  $-5y^2$
- D  $-5y^4$

**21**

Use your ruler to help you solve this problem.

Each morning, a bird flies from his tree in Montgomery to his favorite feeder in Newburgh, as shown in the scale drawing below.

**SCALE**

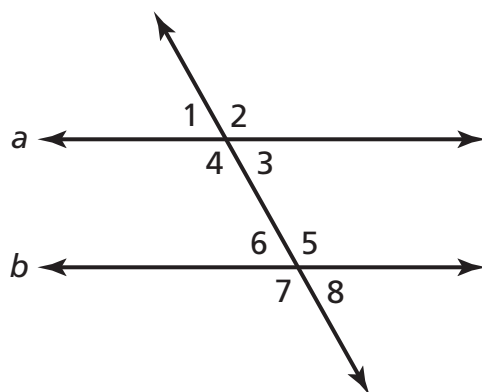
1 inch = 5 miles

**Approximately** how many miles does the bird fly from the tree to the feeder each morning?

- A 2
- B 6
- C 13
- D 18

**22**

In the diagram below, lines  $a$  and  $b$  are parallel.



[not drawn to scale]

Which angle is supplementary to  $\angle 2$ ?

- A  $\angle 3$
- B  $\angle 4$
- C  $\angle 5$
- D  $\angle 7$

**23**

Factor the expression below using the greatest common factor (GCF).

$$12n^5 + 8n^3 + 6n$$

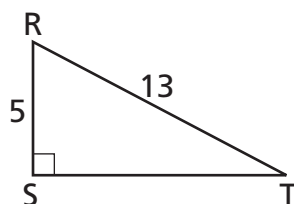
- A  $2n(6n^4 + 4n^2 + 3)$
- B  $2n(6n^5 + 4n^3 + 3n)$
- C  $2n(12n^5 + 4n^2 + 6)$
- D  $2n(6n^4 + 8n^3 + 6n)$

**Go On**

**24** Which of these phrases **best** describes a polynomial?

- A** a decimal that is non-terminating or non-repeating
- B** an algebraic expression containing one or more terms
- C** a close-planed figure formed by three or more line segments
- D** a number greater than one that has exactly two different factors

**25** Triangle RST is shown below.



[not drawn to scale]

Pythagorean theorem:

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

What is the length of  $\overline{ST}$ ?

- A** 5
- B** 8
- C** 12
- D** 18

**26**

The area of triangle RST is 36 square inches. Under which transformation could the area of the image, triangle R'S'T', be greater than 36 square inches?

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

**27**

Simplify the expression below.

$$4k^2 + 5k - 3 + 5k^2 + 2$$

- A  $4k^2 + 10k - 1$
- B  $9k^2 + 5k - 1$
- C  $9k^2 + 7k - 3$
- D  $14k^2 + 5k - 1$

**STOP**







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