



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

## **Mathematics Test Book 3**

Grade **8**

**May 5–7, 2010**

Name \_\_\_\_\_



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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 writing your response.
- Be sure to show your work when asked. You may receive partial credit if you have shown your work.
- Use your calculator to help you solve the problems on this part of the test.

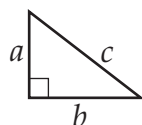


This picture means that you will use your ruler.

## Mathematics Reference Sheet

### FORMULAS

Pythagorean Theorem



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

Simple Interest

$$I = prt$$

Distance Formula

$$d = rt$$

### CONVERSIONS

Temperature Conversions

$$F = \frac{9}{5}C + 32$$

$$C = \frac{5}{9}(F - 32)$$

Measurement Conversions

$$1 \text{ mile} = 5,280 \text{ feet}$$

$$1 \text{ yard} = 3 \text{ feet}$$



**34** Solve the equation below for  $x$ .

$$20x + 5x - 20 = 21x + 4$$

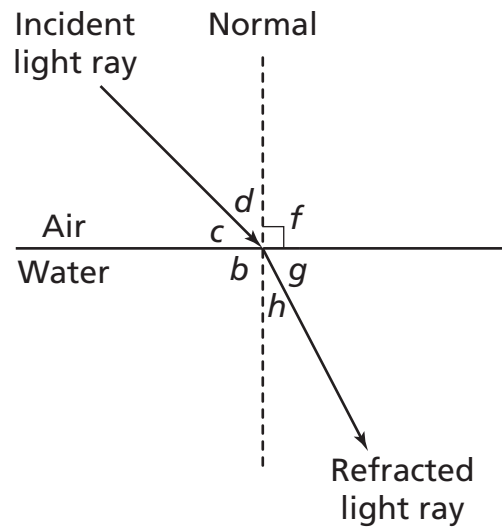
**Show your work.**

**Answer**  $x =$  \_\_\_\_\_

**Go On**

35

John reviewed the diagram below to study the angle of refraction of light as it passes through the air into the water.



[not drawn to scale]

What angles are complementary?

**Answer**  $\angle$  \_\_\_\_\_ and  $\angle$  \_\_\_\_\_

$\angle$  \_\_\_\_\_ and  $\angle$  \_\_\_\_\_

- 36** Simplify the expression below, using the laws of exponents.

$$(5^4 \times 5^7) \div 5^8$$

**Show your work.**

**Answer** \_\_\_\_\_

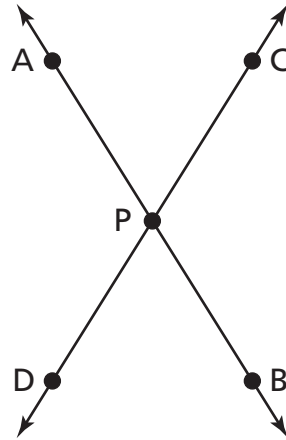
- 37** What is the sum of  $(x^2 - 3x + 2)$  and  $(5x^2 - 3x - 8)$ ?

**Show your work.**

**Answer** \_\_\_\_\_

**Go On**

In the diagram below, line AB and line CD intersect at point P.



[not drawn to scale]

Name the angle that is always congruent to  $\angle APC$ .

**Answer** \_\_\_\_\_

On the lines below, explain why the two angles are congruent.

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**39**

Ms. Lembright ordered the types of muffins below for a class party.

- 12 blueberry muffins for \$7.20
- 8 chocolate muffins for \$4.40
- 6 raisin muffins for \$4.50

What type of muffin costs the **least**?

**Show your work.**

**Answer** \_\_\_\_\_ muffin

**Go On**

**40**

Michael drew a triangle with the sides measuring 12.5 centimeters, 30 centimeters, and 32.5 centimeters. Using the Pythagorean theorem, determine if Michael's triangle is a right triangle. On the lines below, explain how you determined your answer.

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**41**

What is the product of  $-8x^2y$  and  $-2xy^3$ ? Use the law of exponents to find the product.

**Show your work.**

**Answer** \_\_\_\_\_

**42**

Scott bought a watch for 48 U.S. dollars. What is the cost of the watch in Swiss francs? Use the conversion formula below.

$1 \text{ U.S. dollar} = 1.02 \text{ Swiss francs}$
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**Show your work.**

**Answer** \_\_\_\_\_ Swiss francs

Scott would like to buy a battery for 10 U.S. dollars. He has 10.20 Swiss francs remaining after buying the watch. On the lines below, determine whether Scott has enough money to buy the battery. Explain how you determined your answer.

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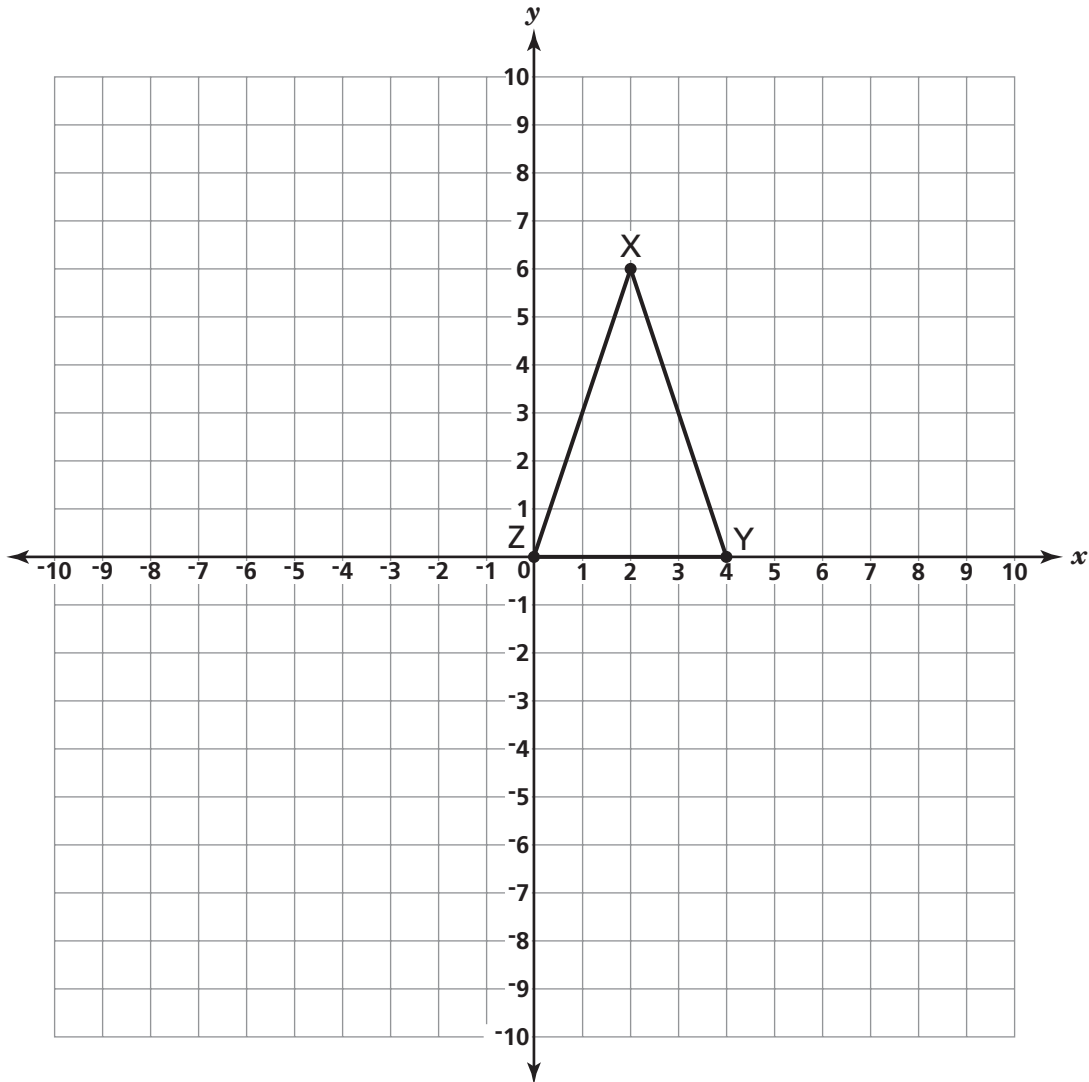
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**Go On**

**43**

Triangle XYZ is plotted on the grid below.



**Part A**

On the grid, draw the image of triangle XYZ after a clockwise rotation of  $180^\circ$  about the origin. Label the new triangle  $X'Y'Z'$ .

**Part B**

On the lines below, explain how you determined the location of point  $Y'$ .

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***Go On***

**44**

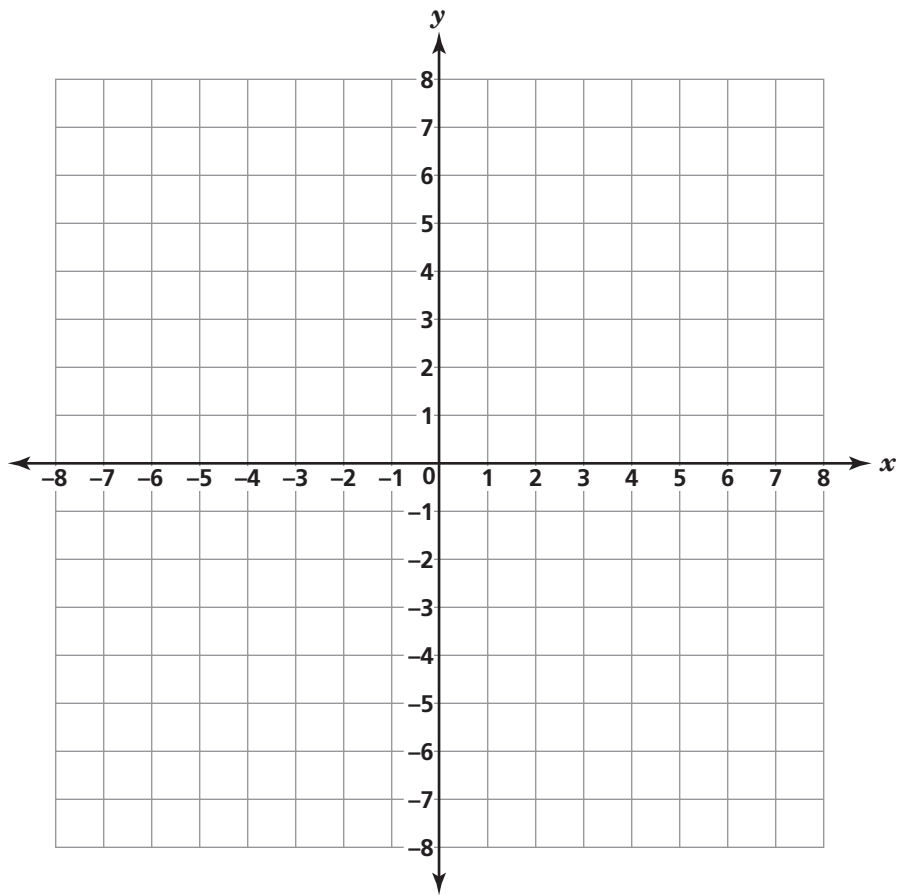
Ken used the function rule below to create a number pattern.

$$y = 2x + 2$$

Complete the table below using Ken's function rule.

$x$	$y$
-4	
-2	
0	
1	
3	

On the coordinate plane below, plot the values of  $x$  and  $y$  and connect the points with a line.



***Go On***

**45**

Estimate  $805 \cdot 11 \div 22$ .

**Estimation** \_\_\_\_\_

Calculate the value of  $805 \cdot 11 \div 22$ .

**Show your work.**

**Answer** \_\_\_\_\_

On the lines below, explain why your estimation is reasonable.

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**STOP**









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Place Student Label Here



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