New York State Testing Program

Mathematics Test
Book 3

Grade **8**

March 6–12, 2008

Name _____

20303

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Book 3

Tips for Taking the Test

Here are some suggestions to help you do your best:

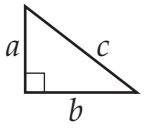
- Be sure to read carefully all the directions in the test book.
- Read each question carefully and think about the answer before writing your response.
- Be sure to show your work when asked. You may receive partial credit if you have shown your work.
- Use your calculator to help you solve the problems 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

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

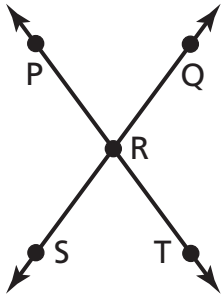
$C = \frac{5}{9}(F - 32)$

Measurement Conversions

1 mile = 5,280 feet
1 yard = 3 feet

■ SECURE MATERIAL ■
Do not reproduce. Do not discuss contents until end of designated makeup schedule.

34 In the diagram below, ∠PRQ measures 73°.



[not drawn to scale]

What is the measure of ∠QRT ?

Show your work.

Answer _____ degrees

Go On

35 What is the polynomial resulting from the subtraction below?

$$(3x^2 + 4x - 7) - (x^2 - 2x + 6)$$

Show your work.

Answer _____

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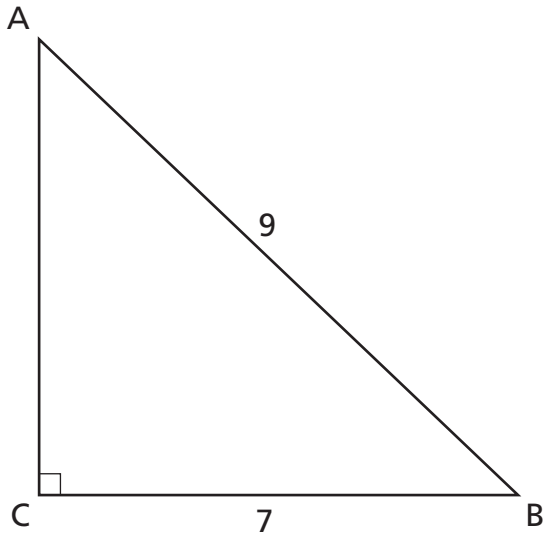
36 In triangle ABC below, $\overline{AB}$ is 9 meters long and $\overline{BC}$ is 7 meters long. Use the Pythagorean theorem to find the length of $\overline{AC}$ to the **nearest tenth** of a meter.



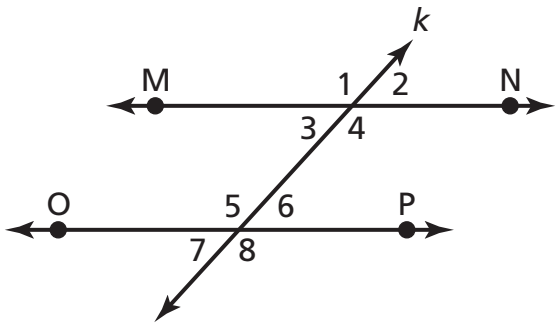
[not drawn to scale]

Show your work.

Answer _____ meters

Go On

37 In the diagram below, $\overleftrightarrow{MN} \parallel \overleftrightarrow{OP}$, and transversal k intersects both lines.



[not drawn to scale]

Name two angles in the diagram that are congruent to $\angle 4$.

Answer $\angle$ _____ and $\angle$ _____

On the lines below, explain how you determined these angles are congruent to $\angle 4$.

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38 Tyrone travels internationally on business. On a trip to Japan, Tyrone uses the exchange rates in the tables shown below.

U.S. Dollar	Japanese Yen
$1.00	115.19¥

Japanese Yen	U.S. Dollar
1¥	$0.008681

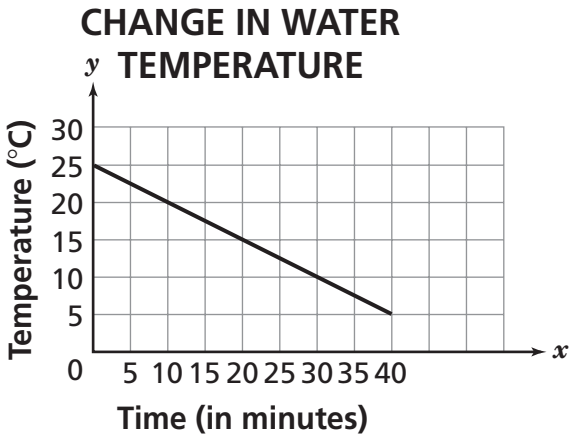
What is the value of 75 U.S. dollars in Japanese yen? **Round** your answer to the nearest yen.

Show your work.

Answer _____ ¥

Go On

39 The graph below shows the change in water temperature of a glass of tap water placed into a freezer.



Use information in the graph to determine how many **total minutes** it takes the water to reach 0°C.

Answer _____ minutes

On the lines below, explain how you determined your answer.

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40 Ramona is a travel agent. She receives a 6% commission on vacation package sales.

Part A

How much commission will Ramona make if she sells $3,600 in vacation packages?

Show your work.

Answer $ _____

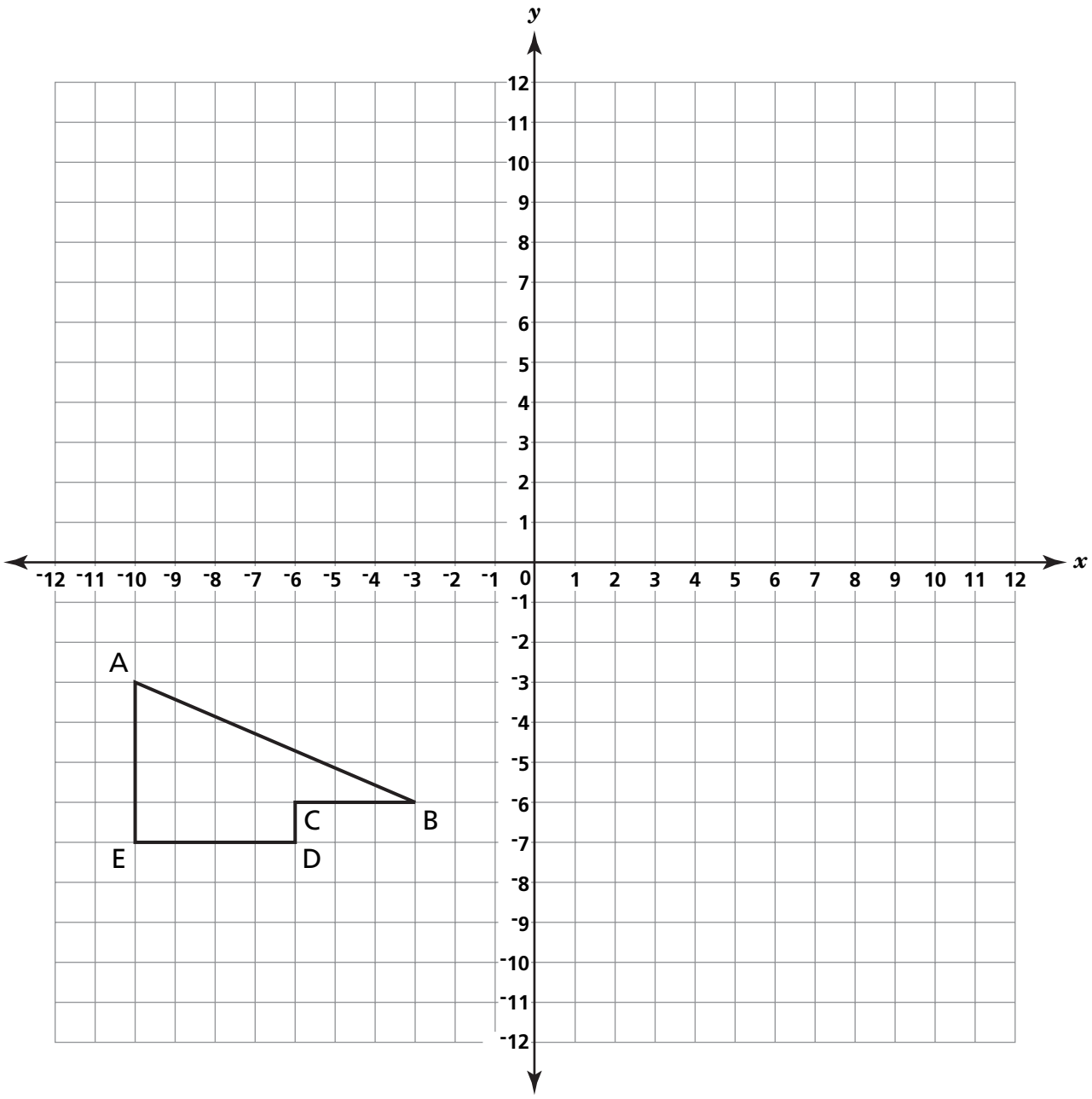
Part B

Ramona receives an additional 2% bonus on the sale of vacation packages during February. What would be her combined commission and bonus if she sells $3,600 in vacation packages during February?

Answer $ _____

Go On

41 On the coordinate plane below, draw the image of polygon ABCDE translated 8 units to the right and 4 units up. Label the image A′B′C′D′E′.



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42 Consuelo is grocery shopping and sees that the price of 4 melons is $7.00. Write a proportion that Consuelo can use to find the price of 1 melon.

Proportion _____

Use your proportion to find the price of 1 melon.

Show your work.

Answer $ _____

Go On

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43 The table below shows the coordinates of triangle RST and the coordinates of R′ in triangle R′S′T′. Triangle R′S′T′ is a dilation of triangle RST.

Triangle RST		Triangle R′S′T′	
R	(–2, –3)	R′	(–6, –9)
S	(0, 2)	S′	
T	(2, –3)	T′	

Part A

What are the coordinates of point S′ and point T′?

Answer S′ = (_____ , _____)

T′ = (_____ , _____)

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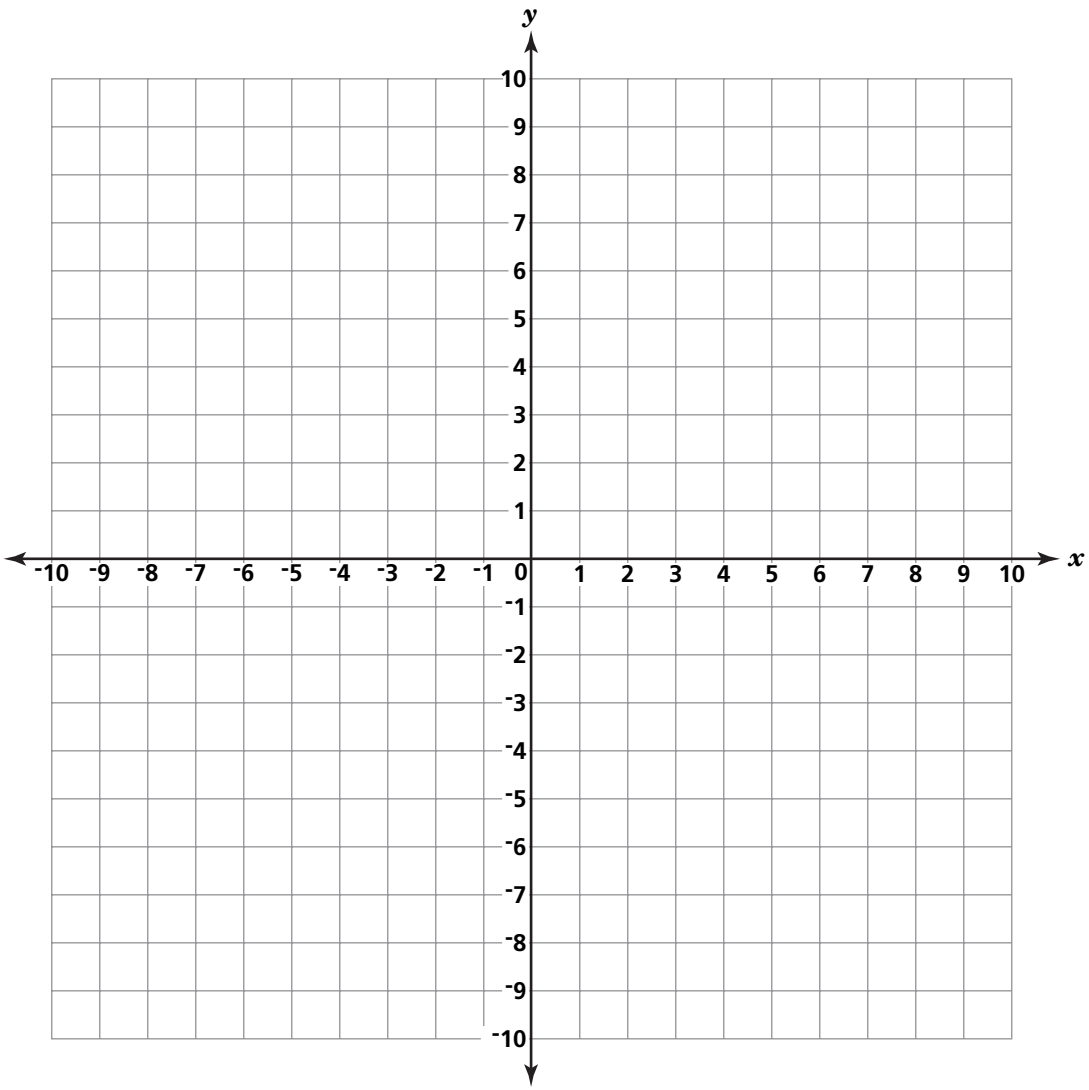
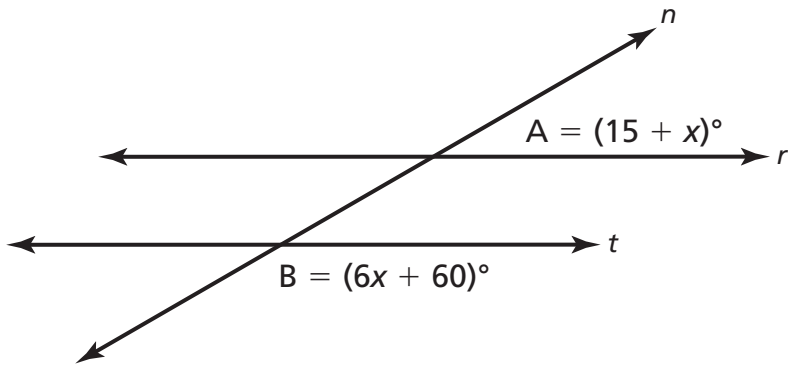
Part B

On the grid below, draw triangle RST and triangle R′S′T′.



Go On

44 In the diagram below, line *r* and line *t* are parallel. Line *n* is a transversal.



[not drawn to scale]

What is the measure, in degrees, of ∠A?

Show your work.

Answer _____ degrees

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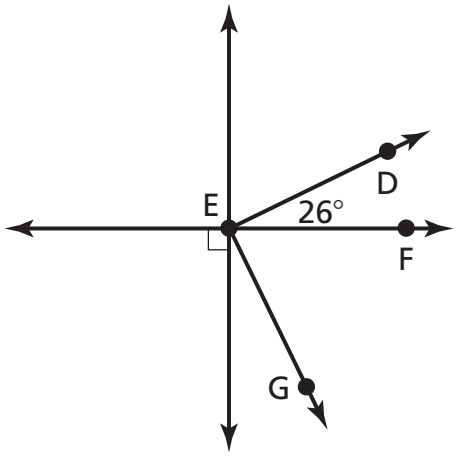
45 In the diagram below, ∠DEF and ∠FEG are complementary.



[not drawn to scale]

What is the measure of ∠FEG?

Show your work.

Answer _____ degrees

STOP

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