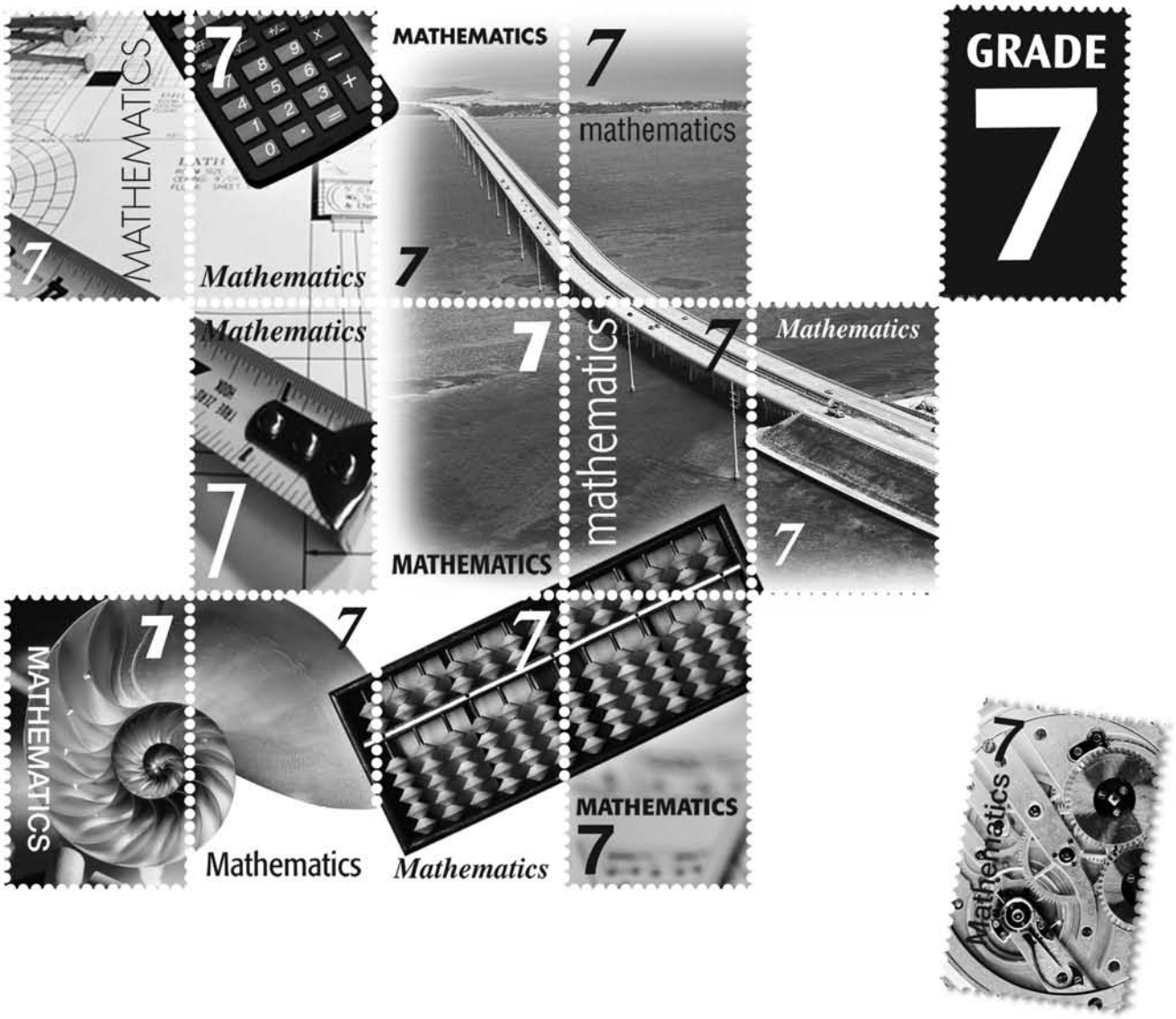
2006

FCAT

Florida Comprehensive Assessment Test

Student Name

MATHEMATICS
SAMPLE TEST BOOK



999-8242-98-3

FCAT Sample Test Materials

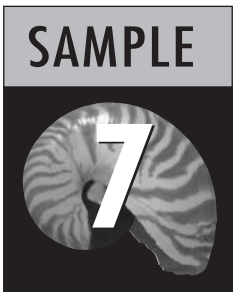
These sample test materials are designed to help you prepare to answer FCAT questions. These materials introduce you to the kinds of questions you will answer when you take FCAT and include hints for responding to the different kinds of FCAT questions. The FCAT Mathematics sample test materials for Grade 7 are composed of the books described below:

☑ **Sample Test and Answer Book**
Includes a mathematics sample test, a sample answer sheet, and instructions for completing the sample test. (Copies are available for all students in the tested grade.)

☐ **Sample Answer Key**
Includes answers and explanations for the questions in the sample test. (Copies are available for classroom teachers only.)

☑ = This book

FCAT Mathematics Sample Test Book



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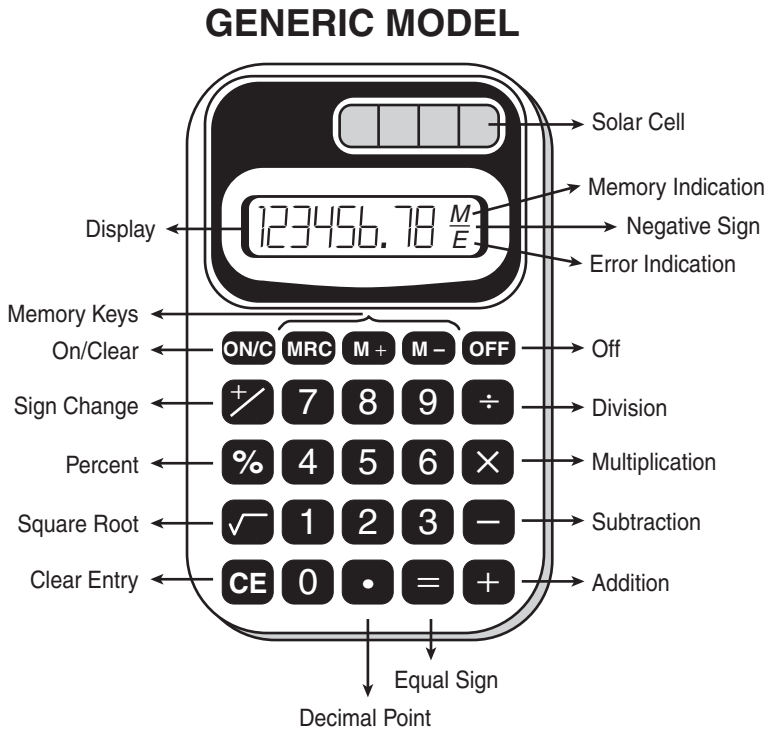
Calculator Instructions

This is a picture of a generic calculator and its parts.



HELPFUL HINTS FOR TAKING THE FCAT MATHEMATICS TEST

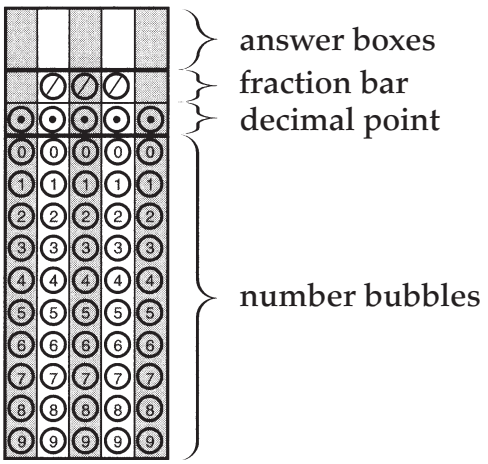
1. Read the problem very carefully. Then decide whether or not you need the calculator to help you solve the problem.
2. When starting a new problem, always clear your calculator by pressing the clear key.
3. If you see an **E** in the display, clear the error before you begin.
4. If you see an **M** in the display, clear the memory and the calculator before you begin.
5. If the number in the display is not one of the answer choices, check your work. Remember that when computing with certain types of fractions, you may have to round the number in the display.
6. Remember, your calculator will NOT automatically perform the algebraic order of operations.
7. Calculators might display an incorrect answer if you press the keys too quickly. When working with calculators, use careful and deliberate keystrokes, and always remember to check your answer to make sure that it is reasonable.
8. The negative sign may appear either to the left or to the right of the number.
9. Always check your answer to make sure that you have completed all of the necessary steps.

How to Complete the Response Grids

Mathematics test questions with this symbol  require that you fill in a grid on your answer sheet. There may be more than one correct way to fill in a response grid. This section shows you different ways the response grid may be completed.

Parts of a Response Grid

For Grade 7, response grids have the following parts:



Directions

1. Work the problem and find an answer.

2. Write your answer in the answer boxes at the top of the grid.

   - Print your answer with the first digit in the left answer box, OR with the last digit in the right answer box.
   - Print only one digit or symbol in each answer box. Do NOT leave a blank answer box in the middle of an answer.
   - Be sure to write a decimal point or fraction bar in the answer box if it is a part of the answer.

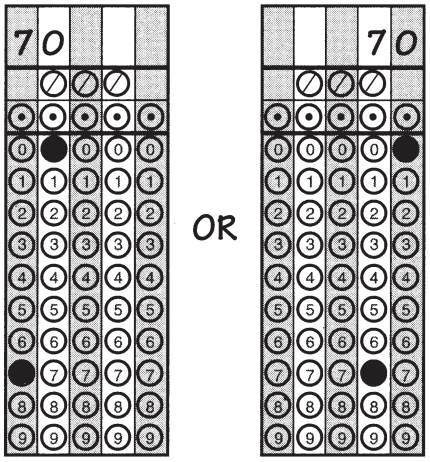
3. Fill in a bubble under each box in which you wrote your answer.

- Fill in one and ONLY one bubble for each answer box. Do NOT fill in a bubble under an unused answer box.
- Fill in each bubble by making a solid black mark that completely fills the circle.
- You MUST fill in the bubbles accurately to receive credit for your answer.

Examples

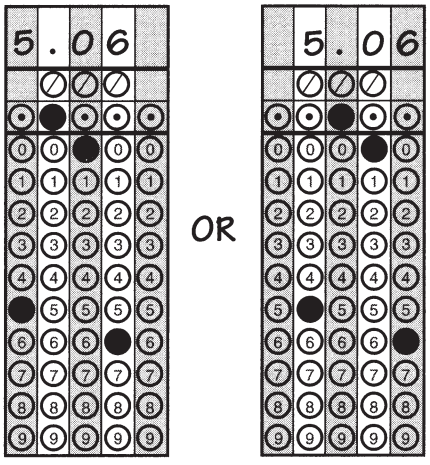
Whole Number

60 + 10 =



Decimal

Show the decimal equivalent of $5\frac{6}{100}$.

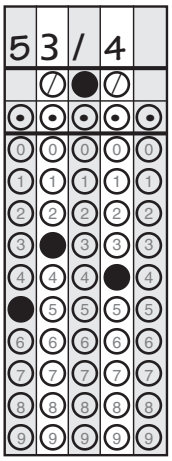


Fraction

NOTE: You may NOT write a **mixed number** such as $13\frac{1}{4}$ in the answer grid. If your answer is a mixed number, you must convert the answer to an improper fraction, such as $\frac{53}{4}$, or to a decimal number, such as 13.25. If you tried to fill in $13\frac{1}{4}$, it would be read as $\frac{131}{4}$ and would be counted wrong.

$12\frac{3}{4} + \frac{1}{2} =$

CORRECT



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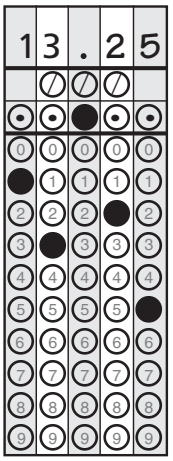
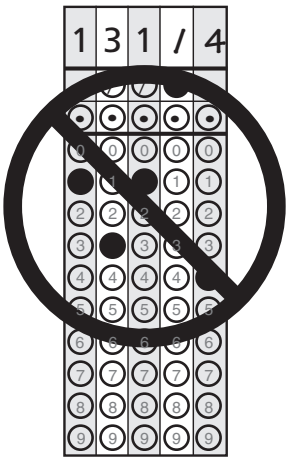


INCORRECT

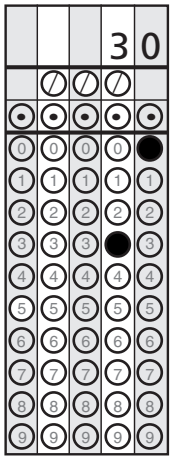


Percent

When a percent is required to answer a question, do NOT convert the percent to its decimal or fractional equivalent. Grid in the percent value without the % symbol.

30%

CORRECT



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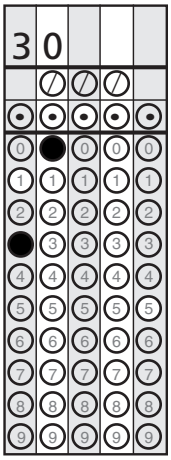

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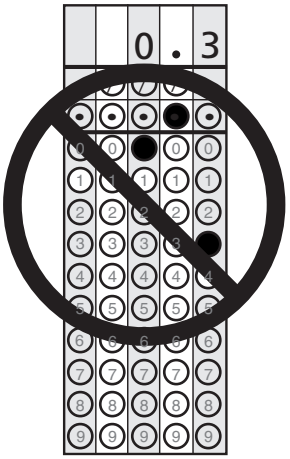

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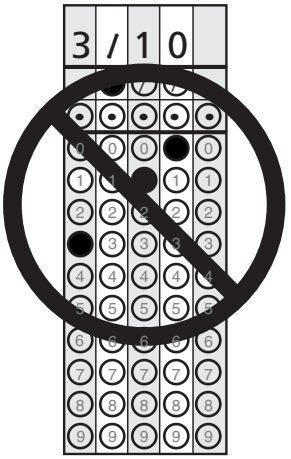
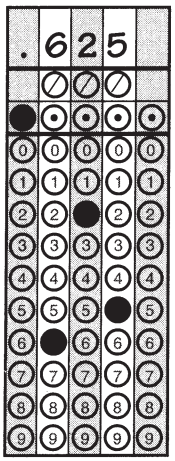


Decimal or Fraction

Many answers may be shown as either a decimal or a fraction.



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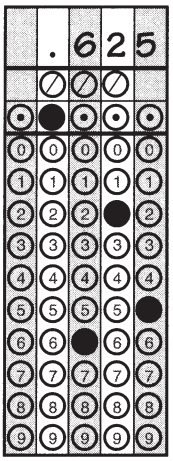

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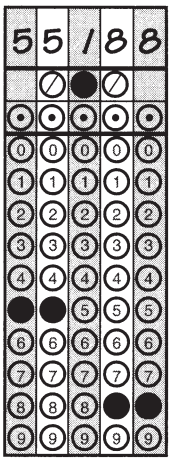

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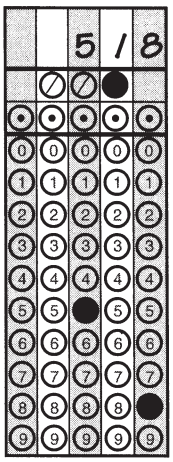
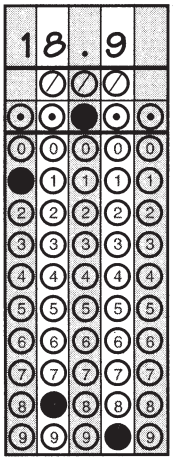


Ranges

A correct answer within a range of values may be represented in various ways. For example, for the inequality

$$18.8 < n < 19.2$$

values of n could be written as shown below.



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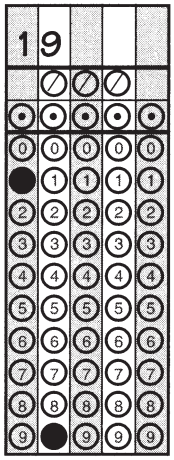

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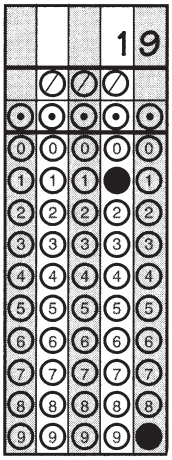

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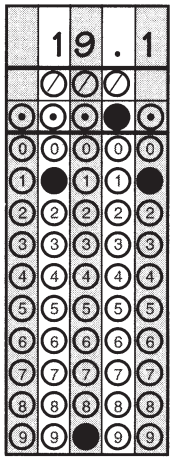


There are also other correct answers.

Taking the FCAT Mathematics Sample Test

Hints for Taking the FCAT Mathematics Test

Here are some hints to help you do your best when you take the FCAT Mathematics test. Keep these hints in mind when you answer the sample questions.

- ✓ **Read each question carefully and think about ways to solve the problem before you try to answer the question.**
- ✓ **Answer the questions you are sure about first. If a question seems too difficult, skip it and go back to it later.**
- ✓ **Be sure to fill in the answer bubbles correctly. Do not make any stray marks around answer spaces.**
- ✓ **Think positively. Some problems may seem hard to you, but you may be able to figure out what to do if you read each question carefully.**
- ✓ **When you have finished each problem, reread it to make sure your answer is reasonable.**
- ✓ **Relax. Some people get nervous about tests. It's natural. Just do your best.**

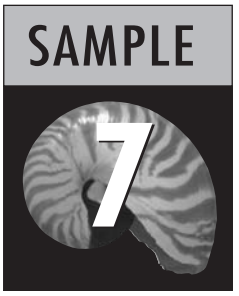
Directions for Taking the Mathematics Sample Test

This Sample Test contains the Reference Sheet and 18 questions. It should take about 20 to 25 minutes to answer all the questions. You will mark your answers on the Sample Answer Sheet on page 27 of this book. If you don't know how to work a problem, just ask your teacher to explain it to you. Your teacher has the answers to the sample test questions.

You may need formulas and conversions to help you solve some of the problems. You may refer to the Reference Sheet on page 11 as often as you like.

Use the space in your Mathematics Sample Test Book to do your work, but be sure to mark your answers on the Sample Answer Sheet.

FCAT *Mathematics*
Sample
Test



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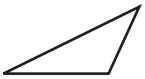
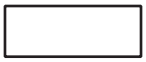
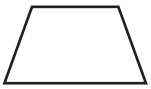
Grades 6–8 FCAT Mathematics Reference Sheet

Fold and Tear Carefully Along Dotted Line.

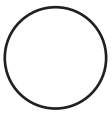
Area


Triangle $A = \frac{1}{2}bh$


Rectangle $A = lw$


Trapezoid $A = \frac{1}{2}h(b_1 + b_2)$


Parallelogram $A = bh$


Circle $A = \pi r^2$

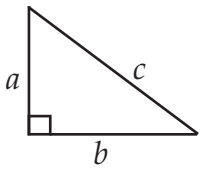
In a polygon, the sum of the measures of the interior angles is equal to $180(n-2)$, where n represents the number of sides.

KEY	
b = base	d = diameter
h = height	r = radius
l = length	A = area
w = width	C = circumference
$S.A.$ = surface area	V = volume
Use 3.14 or $\frac{22}{7}$ for π.	

Circumference

$C = \pi d$ or $C = 2\pi r$

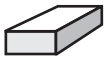
Pythagorean Theorem



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

Volume/Capacity


Right Circular Cylinder $V = \pi r^2 h$


Rectangular Prism $V = lwh$

Total Surface Area

Right Circular Cylinder $S.A. = 2\pi rh + 2\pi r^2$

Rectangular Prism $S.A. = 2(lw) + 2(hw) + 2(lh)$

Conversions

1 yard = 3 feet = 36 inches
1 mile = 1760 yards = 5280 feet
1 acre = 43,560 square feet
1 hour = 60 minutes
1 minute = 60 seconds

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 liter = 1000 milliliters = 1000 cubic centimeters
1 meter = 100 centimeters = 1000 millimeters
1 kilometer = 1000 meters
1 gram = 1000 milligrams
1 kilogram = 1000 grams

1 pound = 16 ounces
1 ton = 2000 pounds

Metric numbers with four digits are presented without a comma (e.g., 9960 kilometers). For metric numbers greater than four digits, a space is used instead of a comma (e.g., 12 500 liters).

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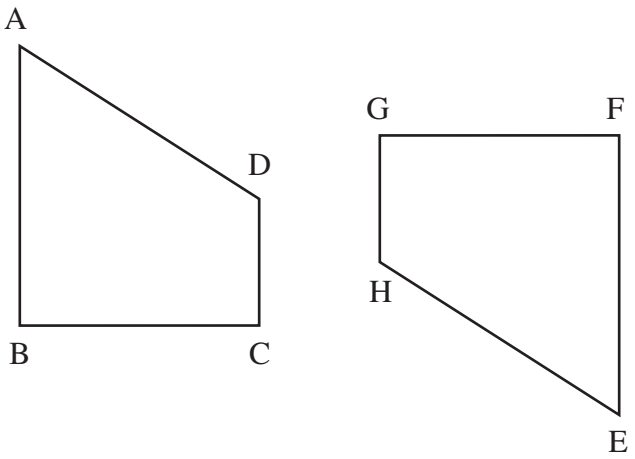
Fold and Tear Carefully Along Dotted Line.

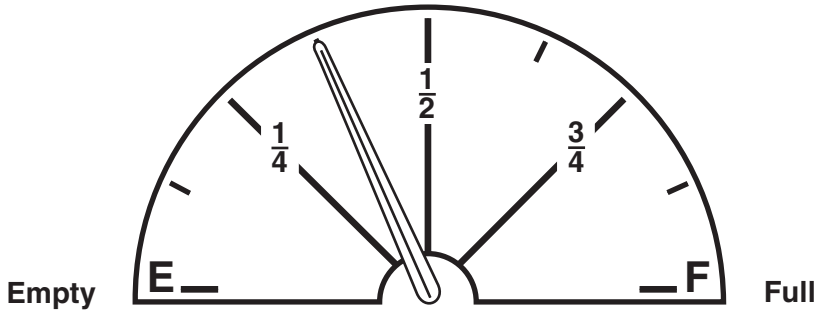
1 Quadrilateral ABCD is congruent to quadrilateral EFGH.



What side of quadrilateral EFGH corresponds to $\overline{CD}$?

A. $\overline{EF}$
B. $\overline{EH}$
C. $\overline{FG}$
D. $\overline{GH}$

2 Mrs. Suarez looks at the gas gauge to see about how much gas she has left in her tank.



If the gas tank holds 18 gallons when full, what is the most reasonable ESTIMATE of the number of gallons of gas Mrs. Suarez has **left** in her tank?

F. 4
G. 7
H. 8
I. 11

3 Ronda recorded the daily low temperatures as shown in the table.

DAILY LOW TEMPERATURES

Day	Temperature (In Degrees Fahrenheit)
Monday	$^{-}10^{o}$
Tuesday	$^{-}5^{o}$
Wednesday	$^{-}20^{o}$
Thursday	$^{-}1^{o}$

Which of the following lists the temperatures in order from **lowest** to **highest**?

A. $^{-}1^{\circ}, ^{-}5^{\circ}, ^{-}10^{\circ}, ^{-}20^{\circ}$

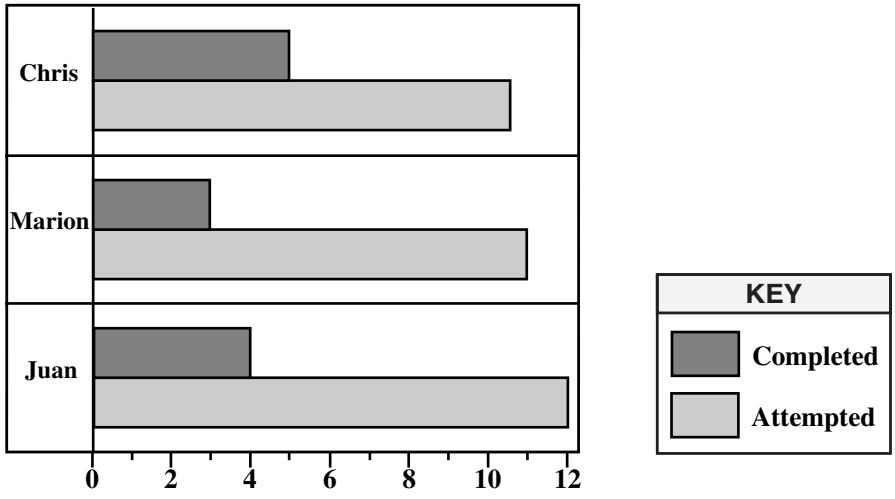
B. $^{-}20^{\circ}, ^{-}10^{\circ}, ^{-}5^{\circ}, ^{-}1^{\circ}$

C. $^{-}1^{\circ}, ^{-}5^{\circ}, ^{-}20^{\circ}, ^{-}10^{\circ}$

D. $^{-}5^{\circ}, ^{-}10^{\circ}, ^{-}20^{\circ}, ^{-}1^{\circ}$

4 The bar graph shows the number of successful passes completed by three members of a football team.

FOOTBALL PASSES



What is the combined number of completed passes by Juan and Marion?

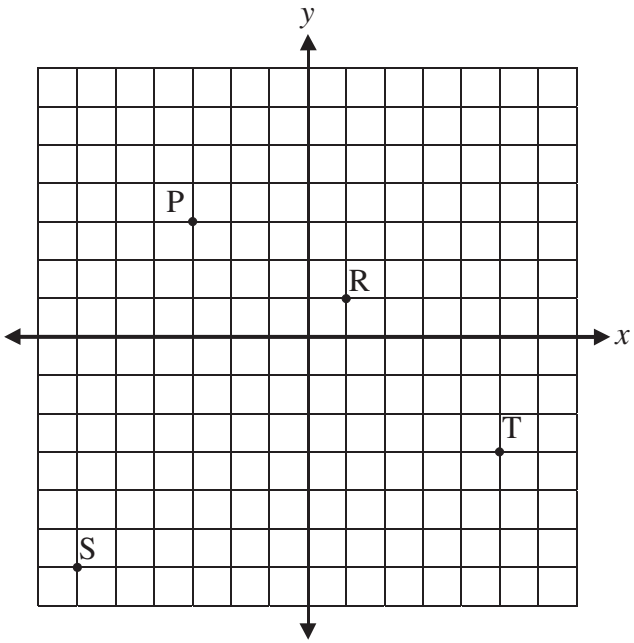
5 Rachel earns $12.50 per hour. Her company deducts 17% of her pay each week for taxes. Rachel uses the formula:

$$E = 0.83(12.50h)$$

to compute her earnings (E) after taxes for the hours (h) she works.

What will be Rachel's earnings, after taxes, if she works 40 hours?

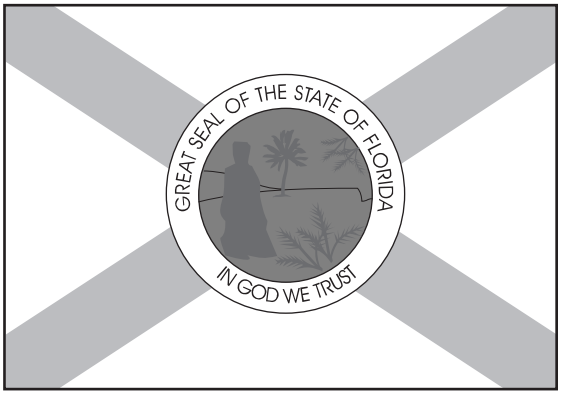
6 Points P, R, S, and T are labeled on a coordinate plane.



In what quadrant is point T located?

F. Quadrant I
G. Quadrant II
H. Quadrant III
I. Quadrant IV

7 A scale drawing of the state flag of Florida measures 2 inches by $2\frac{7}{8}$ inches.



SCALE
$\frac{1}{8}$ in. = $\frac{1}{4}$ ft

What are the dimensions of the actual flag?

A. 2 feet $\times$ $2\frac{7}{8}$ feet

B. 4 feet $\times$ $5\frac{3}{4}$ feet

C. $4\frac{7}{8}$ feet $\times$ $8\frac{1}{32}$ feet

D. 8 feet $\times$ $11\frac{1}{2}$ feet

8 Which expression represents the **least** value?

F. $478 + \frac{1}{2}$

G. $478 - \frac{1}{2}$

H. $478 \times \frac{1}{2}$

I. $478 \div \frac{1}{2}$

9 A data entry clerk earns \$6.00 per hour plus \$0.50 for each full page of data entered into the computer.

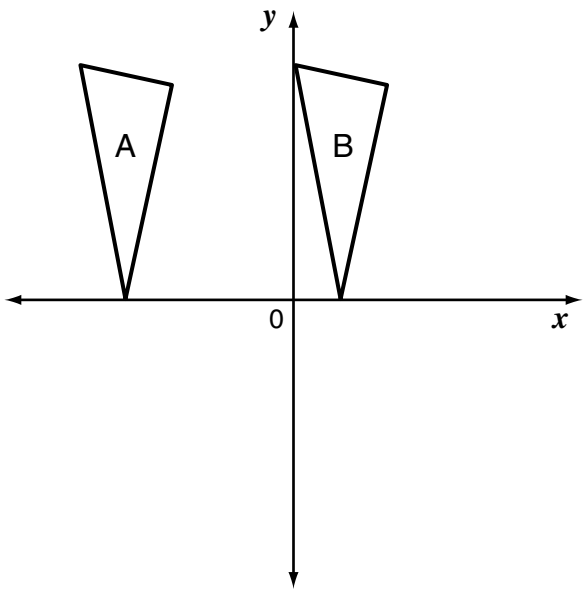
$$E = 6.00h + 0.50p$$

In the equation above, E represents the clerk's earnings, h represents the number of hours worked, and p represents the number of pages entered.

How much money, in dollars, will the clerk earn after working 40 hours and entering 240 full pages of data?

10 "Hits" is a word used to describe the number of times an Internet site is visited. A music video Internet site received about 10,000 hits per day. After a news article reviewed this site, the number of daily hits increased by 20%. How many hits per day did the site receive after the site was reviewed?

11 Triangle B is a congruent image of Triangle A.

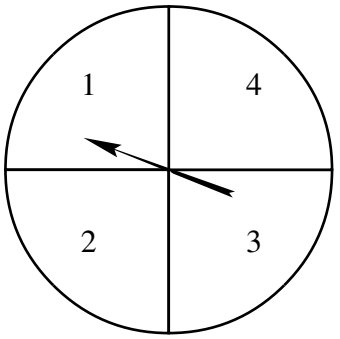


Which of the following terms identifies Triangle B as a single transformation of Triangle A?

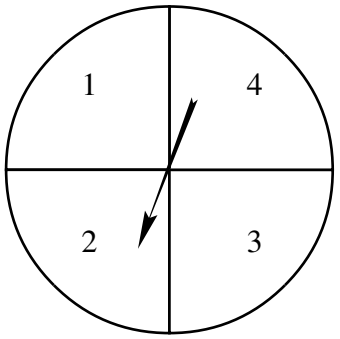
A. dilation
B. reflection
C. rotation
D. translation

12 Cathy has two spinners like those pictured below. She will spin the pointer on each of her spinners one time. She will then add the two numbers on which the pointers land. The chart shows all the possible outcomes.

Spinner 1



Spinner 2



Spinner 1 \ Spinner 2	1	2	3	4
1	2	3	4	5
2	3	4	5	6
3	4	5	6	7
4	5	6	7	8

What is the probability that the sum of the numbers from Spinners 1 and 2 will be either a 3 or a 7?

F. $\frac{1}{12}$

G. $\frac{1}{8}$

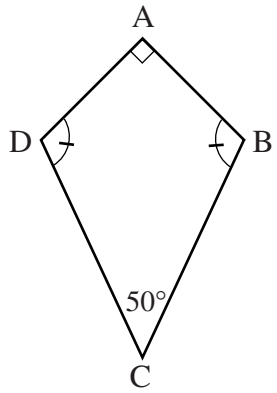
H. $\frac{1}{6}$

I. $\frac{1}{4}$

13 What is the value of the expression $\frac{5 + 15 \div (3^2 - 2^2)}{2}$?

A. 2
B. 4
C. 5
D. 6.25

14 In the quadrilateral shown below, $\angle ABC$ is congruent to $\angle ADC$.



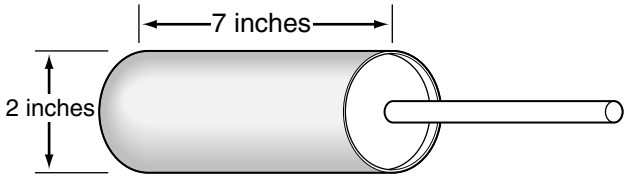
What is the measure, in degrees, of $\angle ABC$?

F. 220°
G. 160°
H. 130°
I. 110°

15 If the linear pattern continues as shown in this table, what will be the corresponding value of y when $x = 7$?

x	y
1	1
2	3
3	5
4	7
5	9

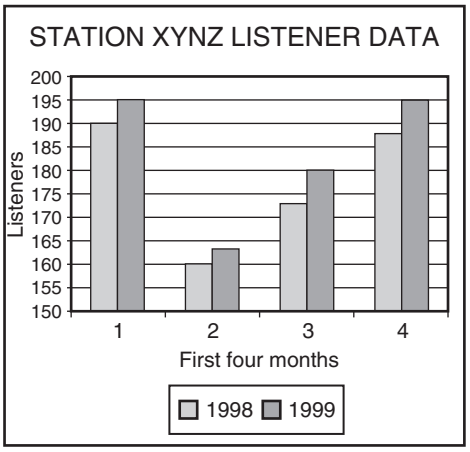
16 A frozen treat consists of a stick that pushes ice cream up a cylindrical tube that measures 7 inches long and 2 inches in diameter.

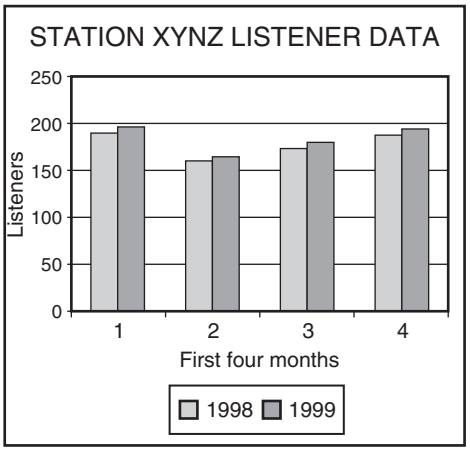


What is the approximate volume of ice cream, in cubic inches, contained in this tube?

A. 22 cubic inches
B. 44 cubic inches
C. 88 cubic inches
D. 154 cubic inches

17 Gary is the manager at radio station XYNZ. He wants to show the increase in station XYNZ listeners from 1998 to 1999. Gary made the two graphs shown below.





Which statement about the graphs is **NOT** true?

F. The graphs appear to be different.

G. The graphs contain different data.

H. The graphs use different scales.

I. The graph on the left appears to show greater gains in listeners.

18 The student council raises money each year by selling snacks at athletic events. The council took a survey to determine which snack students are most likely to buy at athletic events. The results of the survey are shown in the table below.

SNACK SURVEY

	Ice Cream	Chips	Apple	Candy Bar	Popcorn	Soda	Cookies
Number of Votes	77	31	23	100	154	66	49

Based on the survey results, what is the probability that a student, selected at random, would buy a candy bar?

A. $\frac{1}{7}$

B. $\frac{1}{6}$

C. $\frac{1}{5}$

D. $\frac{1}{4}$

This is the end of the Mathematics Sample Test.
Until time is called, go back and check your work or answer questions you did not complete. When you have finished, close your Sample Test Book.

FCAT Mathematics Sample Answer Sheet

SAMPLE 7

Name _____

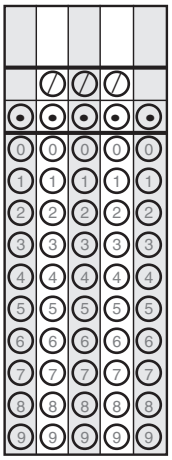
Answer all the questions that appear in the Mathematics Sample Test on this Sample Answer Sheet.

1 Ⓐ Ⓑ Ⓒ Ⓓ

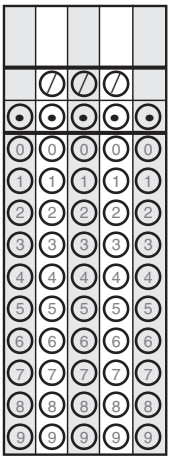
2 Ⓕ Ⓖ Ⓗ Ⓘ

3 Ⓐ Ⓑ Ⓒ Ⓓ

4



5

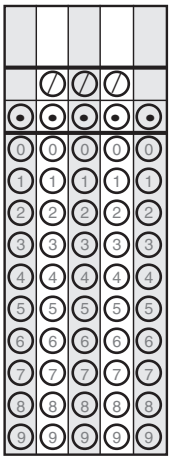


6 Ⓕ Ⓖ Ⓗ Ⓘ

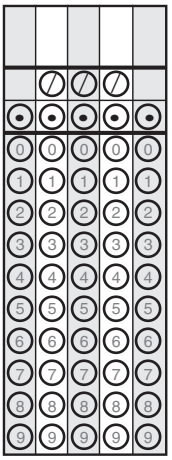
7 Ⓐ Ⓑ Ⓒ Ⓓ

8 Ⓕ Ⓖ Ⓗ Ⓘ

9



10



Fold and Tear Carefully Along Dotted Line.

Go On

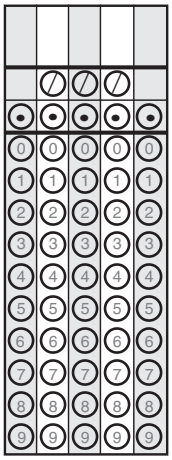
11 Ⓐ Ⓑ Ⓒ Ⓓ

12 Ⓕ Ⓖ Ⓗ Ⓘ

13 Ⓐ Ⓑ Ⓒ Ⓓ

14 Ⓕ Ⓖ Ⓗ Ⓘ

15



16 Ⓐ Ⓑ Ⓒ Ⓓ

17 Ⓕ Ⓖ Ⓗ Ⓘ

18 Ⓐ Ⓑ Ⓒ Ⓓ

Fold and Tear Carefully Along Dotted Line.

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