Alabama Reading and Mathematics Test

Item Specifications

for

Mathematics
Grade 3

Dr. Joseph B. Morton
State Superintendent of Education
Alabama State Department of Education
Montgomery, Alabama
Bulletin 2005, No. 82

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Published by Harcourt Assessment, Inc.

Produced in the United States of America.

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INTRODUCTION

This bulletin provides specific information about the *Alabama Reading and Mathematics Test* (ARMT). Educators representing each State Board of Education district as well as both city and county school systems served on committees to determine the content standards on which the ARMT is based. In addition, educators from throughout the state of Alabama served on committees to review the content of the tests, including selecting and reviewing specific mathematics test items, and determining achievement levels.

Teachers must be familiar with the information in this bulletin so that they may incorporate effective teaching of the mathematics content standards with classroom assessments. Using classroom assessments with similar test formats from time to time will help to enable students to demonstrate proficiency on the various content standards in mathematics.

Two item types are included in the ARMT. Multiple-choice and open-ended items assess student performance on the ARMT in mathematics. Multiple-choice items carry a point value of 1, while open-ended items carry a point value of 3. In this document, teachers will see representative item types for each mathematics content standard.

Content Standard	A statement of what students should know and be able to do by the end of the academic year
Item Type	Multiple-choice, open-ended items
Additional Information	Further information about the test items for the content standard
Sample Items	A collection of item types for each content standard
Answer Key	Answers for multiple-choice items
Scoring Rubrics for Open-Ended Items	Scoring guide for open-ended items

CONTENT STANDARDS
Grade 3

CONTENT STANDARD	POINTS POSSIBLE
Number and Operations	
1- Demonstrate number sense by comparing, ordering, and expanding whole numbers through 9,999.	4
2- Solve addition and subtraction problems, including word problems, involving two- and three-digit numbers with and without regrouping.	9
3- Multiply whole numbers with and without regrouping using single-digit multipliers.	4
4- Divide whole numbers using two-digit dividends and one-digit divisors.	4
5- Model equivalent fractions with concrete objects or pictorial representations.	4
6- Use coins to make change up to $1.00.	5
	30
Algebra	
7- Complete a given numeric or geometric pattern.	6
	6
Geometry	
8- Identify geometric representations for points, lines, perpendicular lines, parallel lines, angles, and rays.	4
9- Specify locations on a coordinate grid by using horizontal and vertical movements.	6
	10
Measurement	
10- Measure length in metric units.	3
11- Determine elapsed time to the day with calendars and to the hour with a clock.	3
	6
Data Analysis and Probability	
12- Recognize data as either categorical or numerical.	3
13- Determine the likelihood of different outcomes in a simple experiment.	3
	6
TOTAL POINTS POSSIBLE	**58**

ITEMS BY CONTENT STANDARD

DIRECTIONS (These are the directions given to students.)

Read the problem and find the answer.

If the problem has a multiple-choice answer, darken the bubble in the correct space in your answer document.

For the problems that ask you to show your work, use the space given in your answer document. Be sure to show all your work or explain how you got your answer in the space given.

For all problems, be sure to check your answers.

NUMBER AND OPERATIONS

Content Standard 1

Demonstrate number sense by comparing, ordering, and expanding whole numbers through 9,999.

Item Type

Multiple-choice

Additional Information

Word problems/real-life situations may be used.
Tables and charts may be used only for graphic organization of information.
In comparing numbers, *greater than*, *less than*, *greatest*, *least*, *more than*, or *between* may be used.

Sample Multiple-Choice Items

1. Which of the following is the greatest?

A 7,676
B 7,695 *
C 7,689
D 7,668

2. Which sum has the same value as 8904?

A 89 + 4
B 800 + 90 + 4
C 8,000 + 90 + 4
D 8,000 + 900 + 4 *

The chart below shows the number of zoo memberships people bought during a 7-day period.

Zoo Memberships

Day	Number Bought
Sunday	46
Monday	21
Tuesday	44
Wednesday	83
Thursday	50
Friday	79
Saturday	63

3. Which two days each had more than 65 zoo memberships bought?

A Sunday and Friday
B Wednesday and Friday *
C Thursday and Saturday
D Wednesday and Saturday

4. Which of the following is <u>less</u> than 5,487?

A 5,482 *
B 5,505
C 5,492
D 5,489

The chart shows the total number of miles driven by different school bus drivers over a 5-day period.

School Bus Drivers

Driver	Number of Miles
Lois	516
Henry	564
John	652
Earl	617
Elaine	583

5. Which driver on the chart drove between 550 miles and 580 miles over this 5-day period?

A Lois
B John
C Henry *
D Elaine

6. Which of the following is greater than 6,211?

A 6,207
B 6,199
C 6,235 *
D 6,010

7. Which of the following is the least?

A 4,124
B 4,029
C 4,120
D 4,023 *

Answer Key

Content Standard 1

Sample Multiple-Choice

1. B
2. D
3. B
4. A
5. C
6. C
7. D

NUMBER AND OPERATIONS

Content Standard 2

Solve addition and subtraction problems, including word problems, involving two- and three-digit numbers with and without regrouping.

Item Type

Multiple-choice
Open-ended

Additional Information

Word problems/real-life situations may be used.
Tables and charts may be used only for graphic organization of information.
Multiple steps may be used.
Time may be used.
One of the options may be NH, which means "Not Here."

Sample Multiple-Choice Items

1. $156 + 34 + 19 = \square$

A 109
B 199
C 686
D NH *

2.
$$\begin{array}{r} 92 \\ -\ 35 \\ \hline \end{array}$$

A 57 *
B 63
C 127
D NH

3. Scott listened to his radio for 23 minutes on Tuesday morning and for 49 minutes on Tuesday night.

   How many total minutes did Scott listen to his radio on Tuesday?

A 26
B 63
C 72 *
D NH

4. Pamela had 17 charms on her bracelet. Stefany had exactly 14 more charms than Pamela.

   How many charms did Stefany have?

A 48
B 31 *
C 21
D 3

5. On Monday, Melina answered a total of 47 phone calls by 10:00 A.M. By 2:00 P.M. she had answered a total of 84 phone calls.

   How many phone calls did Melina answer between 10:00 A.M. and 2:00 P.M. on Monday?

A 131
B 121
C 47
D 37 *

6. Brian delivered 139 newspapers on Saturday. On Sunday, Tom delivered 234 newspapers.

   How many more newspapers did Tom deliver than Brian?

A 95 *
B 105
C 163
D 373

Sample Open-Ended Items

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

1. Sandra had 171 boxes of paper in her store.

   a. She received 240 more boxes of paper. How many boxes of paper did she have then?

   b. Sandra sold 193 boxes of paper to the school. How many boxes of paper did Sandra have left?

Show all your work and/or explain each part in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

2. Vincent had 476 baseball cards.

   a. His parents gave him 50 more baseball cards. How many baseball cards did Vincent have then?

   b. If Vincent gives 36 baseball cards to his friends, how many baseball cards should Vincent have left?

Show all your work and/or explain each part in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

3. Luke, Megan, and Amber are each bringing cookies for a class bake sale. Luke is bringing 40 cookies, Megan is bringing 35 cookies, and Amber is bringing 48 cookies.

   a. How many cookies are they bringing all together?

   b. If they sell 85 cookies at the bake sale, how many cookies should be left?

Show all your work and/or explain each part in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

4. Brett bought a bag of jelly beans for an art project. The chart below shows the different colors and how many of each color are in the bag.

Jelly Beans

Color	Number
White	15
Red	18
Purple	9
Green	21
Yellow	13

   a. How many total jelly beans are in the bag Brett bought?

   b. Brett needs a total of 95 jelly beans for his art project. The remaining jelly beans need to be black. How many black jelly beans does he need?

Show all your work and/or explain each part in the space provided in the answer document.

Answer Key

Content Standard 2

Sample Multiple-Choice

1. D
2. A
3. C
4. B
5. D
6. A

Sample Open-Ended

1. Sample Response(s):

a. $171 + 240 = 411$

OR

Sandra had 171 boxes and added 240 more so she had a total of 411 boxes.

b. $411 - 193 = 218$

OR

Sandra had a total of 411 boxes from **part a**. Take that total (411) and subtract 193.

Sandra had a total of 218 boxes of paper left.

Score Point	Response Attributes
3	All is correct.
2	Both logics are correct. OR One logic and both answers are correct.
1	One or both answers are correct. OR One logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

2. Sample Response(s):

a. $476 + 50 = 526$

OR

Vincent had 476 baseball cards and added 50 more from his parents for a total of 526 cards.

b. $526 - 36 = 490$

OR

Take the total from **part a** (526) and subtract 36 for a total of 490 cards that Vincent has left.

Score Point	Response Attributes
3	All is correct.
2	Both logics are correct. OR One logic and both answers are correct.
1	One or both answers are correct. OR One logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

3. Sample Response(s):

a. $40 + 35 + 48 = 123$

OR

Take all three numbers (40, 35, and 48) and add them up for a total of 123 cookies.

b. $123 - 85 = 38$

OR

The total from **part a** is 123. Take that total and subtract 85. There are 38 cookies left.

Score Point	Response Attributes
3	All is correct.
2	Both logics are correct. OR One logic and both answers are correct.
1	One or both answers are correct. OR One logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

4. Sample Response(s):

a. There are 76 jelly beans in the bag. (15 + 18 + 9 + 21 + 13 = 76)

b. Brett needs 19 black jelly beans for his project. To get this answer, I subtracted the total from **part a** from the total he needed in **part b**. (95 − 76 = 19)

Score Point	Response Attributes
3	All is correct.
2	Both logics are correct. OR One logic and both answers are correct.
1	One or both answers are correct. OR One logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

NUMBER AND OPERATIONS

Content Standard 3

Multiply whole numbers with and without regrouping using single-digit multipliers.

Item Type

Multiple-choice

Additional Information

No word problems/real-life situations will be used.
Bare computational problems will be used.
One- to three-digit multiplicands will be used.
Regrouping may be required.
One of the options may be NH, which means "Not Here."

Sample Multiple-Choice Items

1. $7 \times 6 = \square$

42	49	56	NH
A *	**B**	**C**	**D**

2. $376 \times 4 = \square$

1,204	1,284	1,484	1,504
A	**B**	**C**	**D** *

3. $78 \div 3 = \square$

25	26	27	29
A	**B** *	**C**	**D**

4. $23 \times 6 = \square$

89	129	138	NH
A	**B**	**C** *	**D**

5. $273 \times 6 = \square$

1,638	1,628	1,238	1,228
A *	**B**	**C**	**D**

Answer Key

Content Standard 3

Sample Multiple-Choice

1. A
2. D
3. B
4. C
5. A

NUMBER AND OPERATIONS

Content Standard 4

Divide whole numbers using two-digit dividends and one-digit divisors.

Item Type

Multiple-choice

Additional Information

No word problems/real-life situations will be used.
Bare computational problems will be used.
No remainders will be used.
One of the options may be NH, which means "Not Here."

Sample Multiple-Choice Items

1. $72 \div 8 = \square$

A *	B	C	D
9	8	7	NH

2. $28 \div 4 = \square$

A	B	C *	D
32	24	7	6

3. $35 \div 7 = \square$

A	B *	C	D
4	5	6	7

4. $36 \div 6 = \square$

A	B *	C	D
5	6	7	8

Answer Key

Content Standard 4

Sample Multiple-Choice

1. A
2. C
3. B
4. B

NUMBER AND OPERATIONS

Content Standard 5

Model equivalent fractions with concrete objects or pictorial representations.

Item Type

Multiple-choice

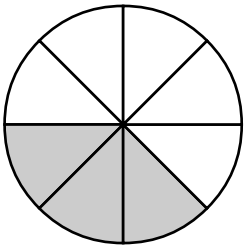
Additional Information

Graphics will be used.
Items will give fraction and graphic display.
Reasonable denominators will be used.

Sample Multiple-Choice Items

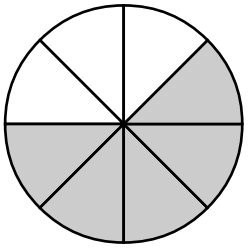
(continued on next page)

1. Which of the following is equivalent to the fraction below?



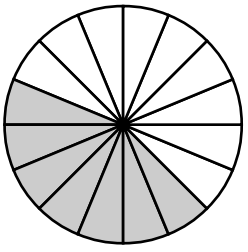
$\frac{3}{8}$

A



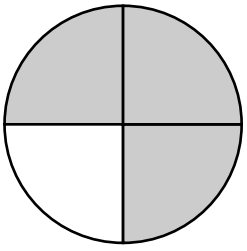
$\frac{5}{8}$

B



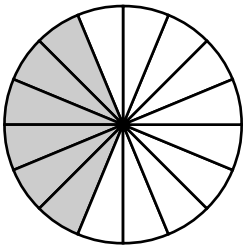
$\frac{7}{16}$

C



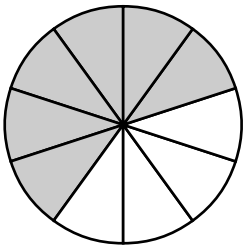
$\frac{3}{4}$

D *

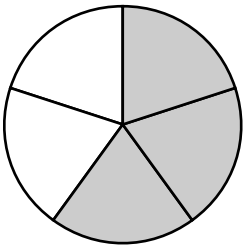


$\frac{6}{16}$

2. Which of the following is equivalent to the fraction below?

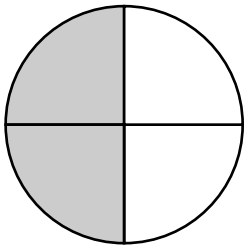


$\frac{6}{10}$



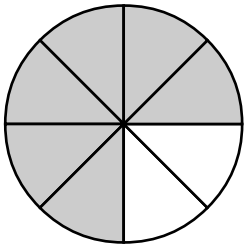
$\frac{3}{5}$

A *



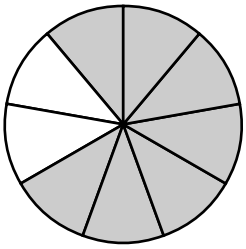
$\frac{2}{4}$

C



$\frac{6}{8}$

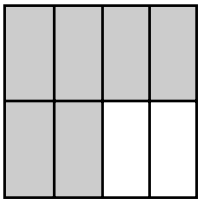
B



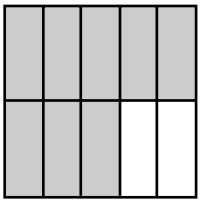
$\frac{7}{9}$

D

3. Which of the following is equivalent to the fraction below?

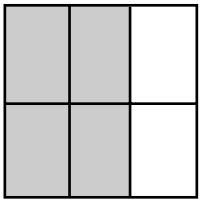


$\frac{6}{8}$



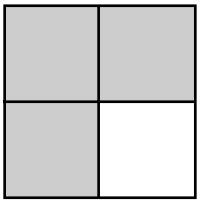
$\frac{8}{10}$

A



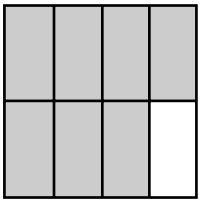
$\frac{4}{6}$

C



$\frac{3}{4}$

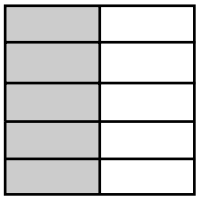
B *



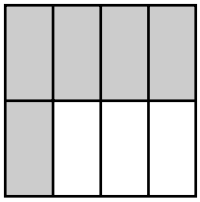
$\frac{7}{8}$

D

4. Which of the following is equivalent to the figure below?

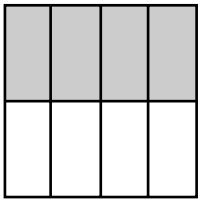


$\frac{5}{10}$



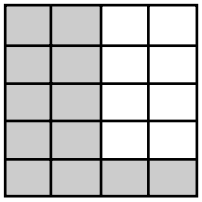
$\frac{5}{8}$

A



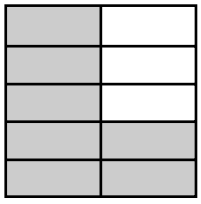
$\frac{4}{8}$

C *



$\frac{12}{20}$

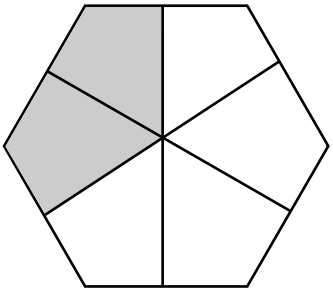
B



$\frac{7}{10}$

D

5. Which of the following is equivalent to the fraction below?



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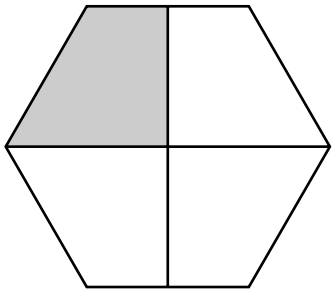
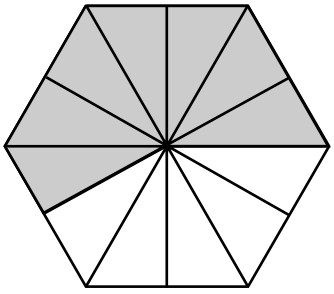


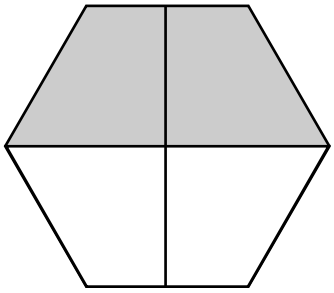
$\frac{1}{4}$

A



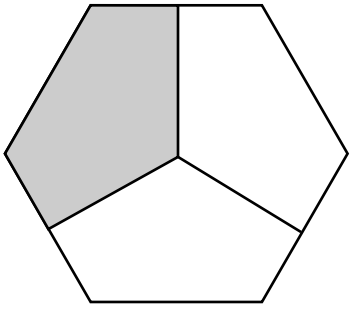
$\frac{7}{12}$

C



$\frac{2}{4}$

B



$\frac{1}{3}$

D *

Answer Key

Content Standard 5

Sample Multiple-Choice

1. D
2. A
3. B
4. C
5. D

NUMBER AND OPERATIONS

Content Standard 6

Use coins to make change up to $1.00.

Item Type

Multiple-choice
Open-ended

Additional Information

Word problems/real-life situations will be used.
Graphics may be used.

Sample Multiple-Choice Items

(continued on next page)

1. Andrew bought a package of stickers that costs a total of 63 cents, including tax. He gave the salesperson a 1-dollar bill.

   Which shows the amount of change Andrew should have received?

A

C

B

D *

2. Jessica bought a notebook that cost 48 cents, including tax. She paid for it with a 1-dollar bill.

   Which group of coins below shows the amount of change that Jessica should have received?

A

C

B *

D

3. Sharon bought a card for \$0.57, including tax. She gave \$0.75 to the salesperson for the card.

   Which group of coins below shows the amount of change Sharon should have received?

A

C *

B

D

4. Angelina bought a cookie that cost 30 cents, including tax. She paid for it with two quarters.

   Which group of coins below shows the amount of change that Angelina should have received?

A

C

B *

D

Sample Open-Ended Items

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

1. Clarence had 85 cents when he went to the post office. He bought one stamp that cost 37 cents. There was no tax.

   a. How much money should Clarence have left?

   b. Using words or pictures, show two different groups of coins that show the amount of money Clarence has left.

Show all your work and/or explain each part in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

2. Sarah bought a bag of candy for 72 cents, including tax. She gave the salesperson a 1-dollar bill for the candy.

   a. How much change should Sarah have received?

   b. Using words or pictures, show two different groups of coins that Sarah could have received as her change.

Show all your work and/or explain each part in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

3. Christopher bought an orange that costs $0.52. There was no tax. He gave the salesperson $0.75 for the orange.

   a. How much change should Christopher have received?

   b. Using words or pictures, show two different groups of coins that Christopher could have received as his change.

Show all your work and/or explain each part in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

4. Sherry used $1.00 to buy gum. The gum costs $0.56, including tax.

   a. How much change should Sherry have received from her gum purchase?

   b. Using words or pictures, show two different groups of coins that Sherry could have received as change.

Show all your work and/or explain each part in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

5. Beth bought a gum ball and a piece of taffy for a total of $0.84, including tax. She paid for the items with a one-dollar bill.

   a. How much change should Beth have received?

   b. Using words or pictures, show two <u>different</u> groups of coins that Beth could have received as his change.

Show all your work and/or explain <u>each</u> <u>part</u> in the space provided in the answer document.

Answer Key

Content Standard 6

Sample Multiple-Choice

1. D
2. B
3. C
4. B

Sample Open-Ended

1. Sample Response(s):

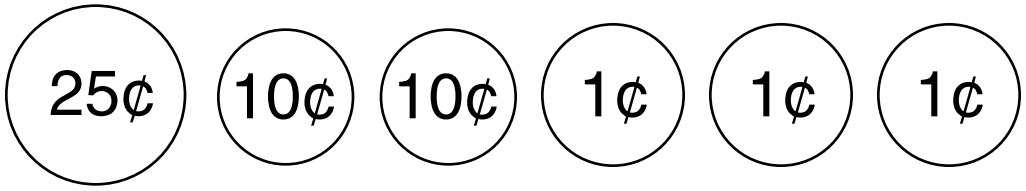
a. $0.85 − $0.37 = $0.48

OR

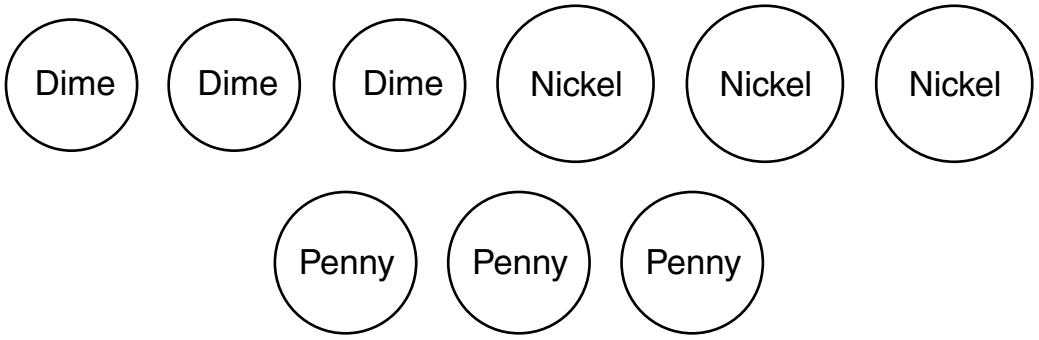
Subtract 37 cents from 85 cents and Clarence should have 48 cents left.

b. Possible ways Clarence could have received his change back is:
4 dimes, 1 nickel, and 3 pennies

OR



OR



Score Point	Response Attributes
3	All is correct.
2	The logics or explanations are correct.
1	One or more answers to problems are correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

2. Sample Response(s):

a. $1.00 − $0.72 = $0.28

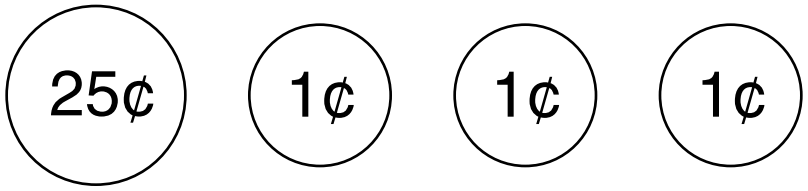
OR

Subtract 72 cents from 1 dollar, and Sarah should have received 28 cents.

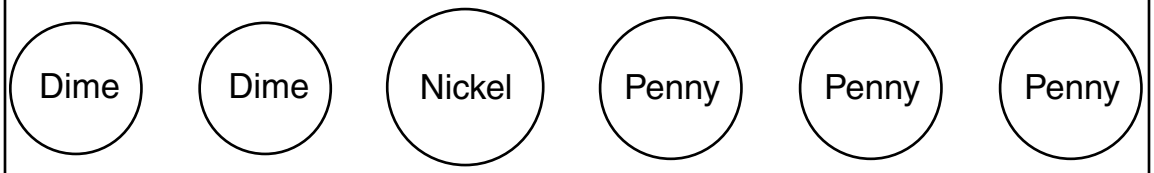
b. Possible ways Sarah could have received her change:

2 dimes, 1 nickel, and 3 pennies

OR



OR



Score Point	Response Attributes
3	All is correct.
2	Two logics or explanations are correct. OR One logic or explanation and all answers are correct.
1	One or more answers to problems are correct. AND/OR Any one logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

3. Sample Response(s):

a. $0.75 − $0.52 = $0.23

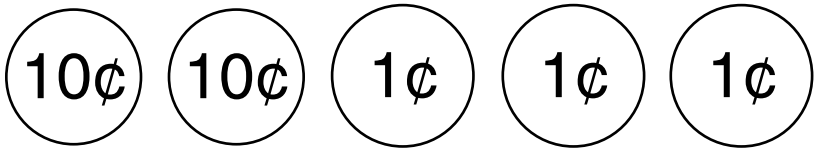
OR

Subtract 52 cents from 75 cents, and Christopher should have received 23 cents.

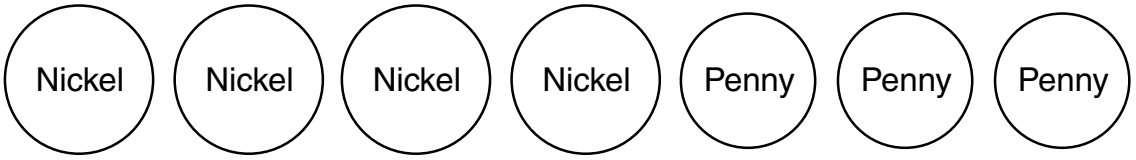
b. Possible ways Christopher could have received his change:

2 dimes and 3 pennies

OR



OR



Score Point	Response Attributes
3	All is correct.
2	The logics or explanation is correct.
1	One or more answers to problems are correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

4. Sample Response(s):

a. $1.00 − $0.56 = $0.44

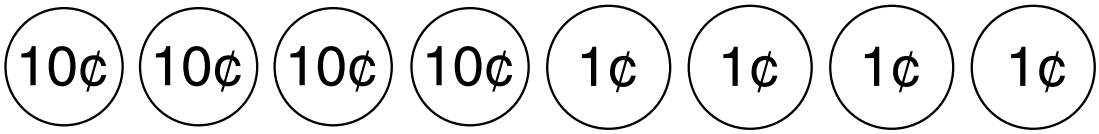
OR

Subtract 56 cents from 1 dollar to get 44 cents.

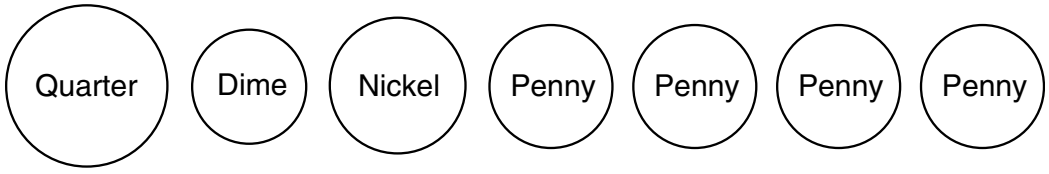
b. Possible ways Sherry could have received her change:

8 nickels and 4 pennies

OR



OR



Score Point	Response Attributes
3	All is correct.
2	The logics or explanation is correct.
1	One or more answers to problems are correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

5. Sample Response(s):

a. $1.00 − $0.84 = $0.16

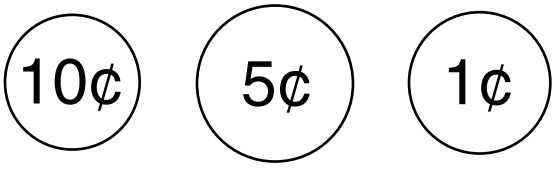
OR

Subtract 84 cents from one dollar. Beth should have received 16 cents.

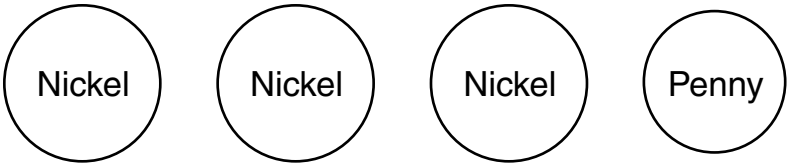
b. Possible ways Beth could have received her change:

1 dime, 1 nickel, and 1 penny

OR



OR



Score Point	Response Attributes
3	All is correct.
2	Two logics or explanations are correct. OR One logic or explanation and all answers are correct.
1	One or more answers to problems are correct. OR Any one logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

ALGEBRA

Content Standard 7

Complete a given numeric or geometric pattern.

Item Type

Multiple-choice
Open-ended

Additional Information

Word problems/real-life situations may be used.
Tables and charts may be used only for graphic organization of information.
Graphics may be used.

Sample Multiple-Choice Items

(continued on next page)

The chart below shows the cost of different numbers of books at a bookstore.

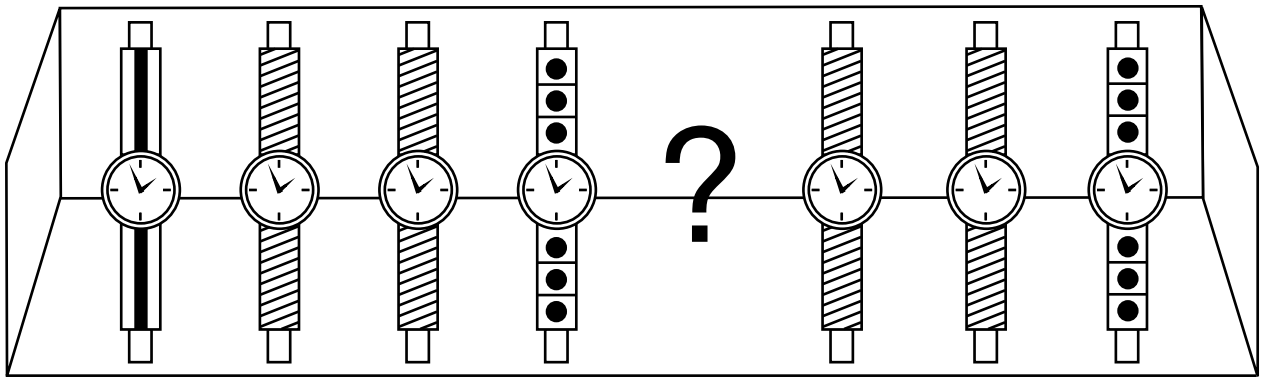
Bookstore

Number of Books	Total Cost (in dollars)
3	9
6	18
9	?
12	36
15	45

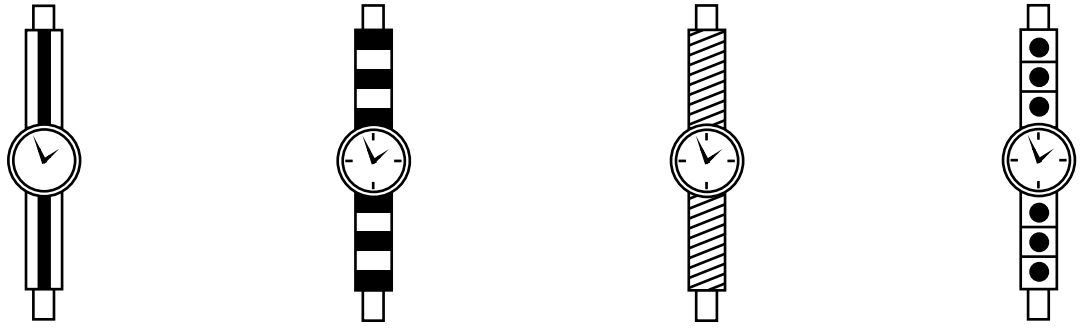
1. What will be the total cost of 9 books at this bookstore?

A $19
B $21
C $27 *
D $35

The bands on the watches shown below make a repeating pattern.



2. What watch band should come next to complete the pattern?



A * **B** **C** **D**

3. Jason is using the same subtraction rule to find each number in the pattern below.

   99, 83, 67, _____ , 35

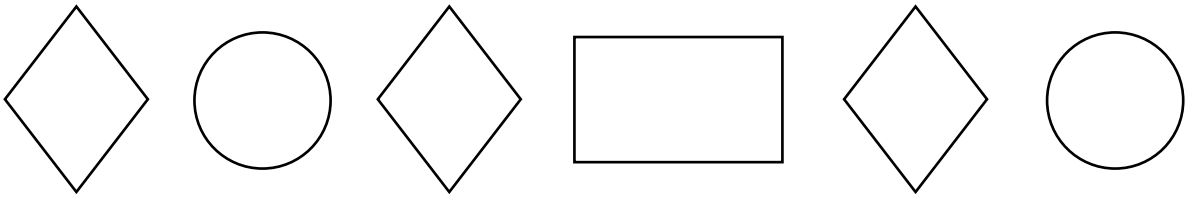
   What number is missing in the pattern?

A 49
B 51 *
C 53
D 57

Sample Open-Ended Items

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

1. A repeating pattern of 4 is shown below.



   a. What are the next three shapes in this pattern?

   b. Explain how you decided on the next three shapes in this pattern.

Show all your work and/or explain your answer for each part in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

2. Sarah wrote this pattern on the board.

58, 57, 55, 52, 48, __, __

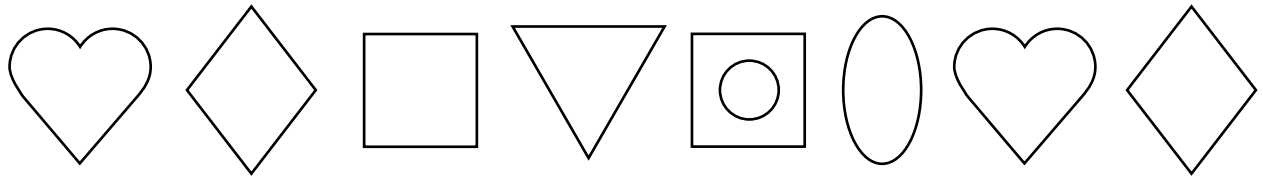
   a. What two numbers come next in the pattern?

   b. Explain how you completed this pattern.

Show all your work and explain how you completed this pattern in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

3. Shon created a pattern that repeats every 6th shape. His pattern is shown below.



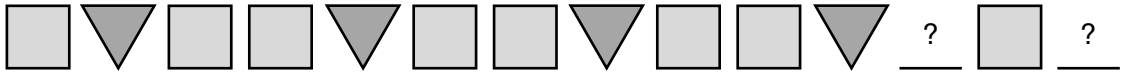
a. What shape should be next in Shon's pattern?

b. What should be the 16th shape in Shon's pattern?

Show all your work and/or explain your answer <u>for each part</u> in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

4. A repeating pattern of 3 is shown below.



a. What are the missing 2 shapes in the pattern?

b. Explain how you completed this pattern.

Show all your work and explain how you completed this pattern in the space provided in the answer document.

Answer Key

Content Standard 7

Sample Multiple-Choice

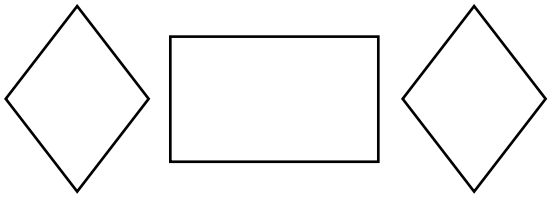
1. C
2. A
3. B

Sample Open-Ended

1. Sample Response(s):

a. Rhombus, rectangle, and rhombus come next in the pattern.

OR



b. This is a four-shape repeating pattern of a rhombus, circle, rhombus and rectangle. The pattern then starts over again at the 5th and 6th shapes in **part a**. A rhombus, rectangle and a rhombus must be the next three shapes in the pattern.

Score Point	Response Attributes
3	All is correct.
2	Two logics or explanations are correct. OR One logic or explanation and all answers are correct.
1	One or more answers to problems are correct. AND/OR Any one logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

2. Sample Response(s):

a. The next two numbers in the pattern are 43 and 37.

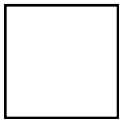
b. I completed this pattern by taking the difference between the numbers. The pattern is decreasing and the difference between the numbers continues to increase by 1. To get the first missing number in the pattern I subtracted 5 from 48 to get 43. To get the second missing number in the pattern I subtracted 6 from 43 to get 37.

Score Point	Response Attributes
3	All is correct.
2	Two logics or explanations are correct. OR One logic or explanation and all answers are correct.
1	One or more answers to problems are correct. AND/OR Any one logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

3. Sample Response(s):

a. The shape that comes next in Shon's pattern is a square.

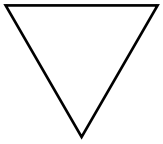
OR



It is a square because the pattern is every 6 shapes. So since there are 2 more shapes after the 6th shape, the shape after the rhombus is a square.

b. The 16th shape in Shon's pattern should be a triangle.

OR



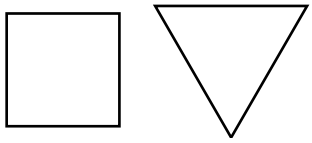
It is a triangle because the 15th shape is a square. After the square is the triangle.

Score Point	Response Attributes
3	All is correct.
2	Two logics or explanations are correct. OR One logic or explanation and all answers are correct.
1	One or more answers to problems are correct. AND/OR Any one logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

4. Sample Response(s):

a. The first missing shape is a square and the second missing shape is a triangle. I know this because it is a three-shape repeating pattern.

OR



b. Since it is a three-shape repeating pattern, the pattern is square, triangle, square.

Score Point	Response Attributes
3	All is correct.
2	Two logics or explanations are correct. OR One logic or explanation and all answers are correct.
1	One or more answers to problems are correct. AND/OR Any one logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

GEOMETRY

Content Standard 8

Identify geometric representations for points, lines, perpendicular lines, parallel lines, angles, and rays.

Item Type

Multiple-choice

Additional Information

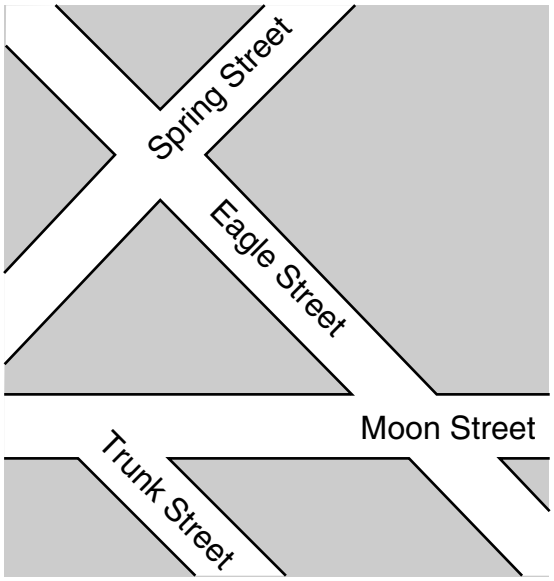
Word problems/real-life situations may be used.
Graphics will be used.

Sample Multiple-Choice Items

1. What is the name of the figure below?

A Angle
B Line
C Ray *
D Line segment

Look at the map below.



2. Which two streets are most likely parallel?

A Spring Street and Moon Street

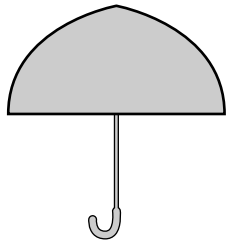
B Eagle Street and Moon Street

C Trunk Street and Spring Street

D Trunk Street and Eagle Street *

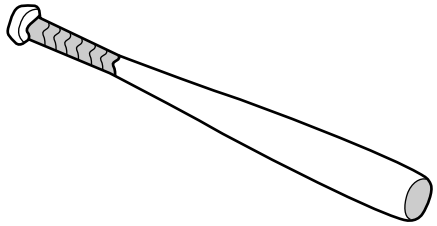
3. Darryl drew a picture that had some perpendicular line segments. Which could be Darryl's picture?

A *

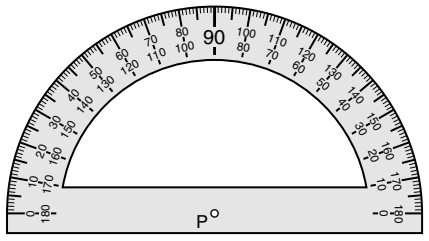


B

C

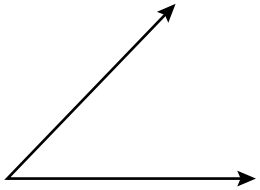


D

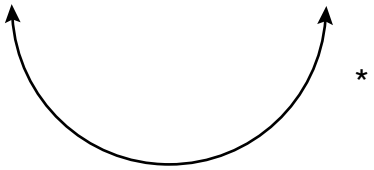


4. Which of the following is <u>not</u> an angle?

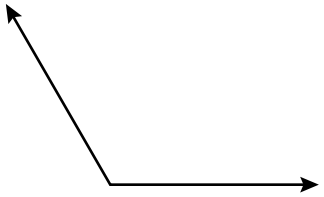
A



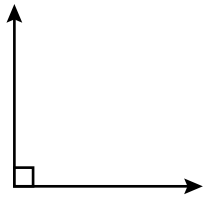
B *



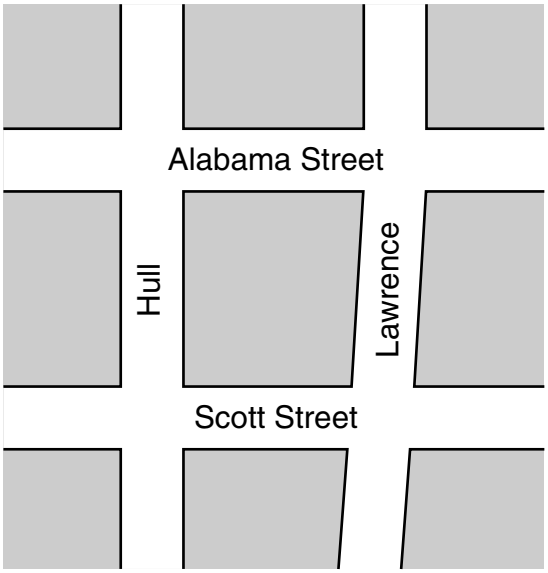
C



D



Look at the map below.



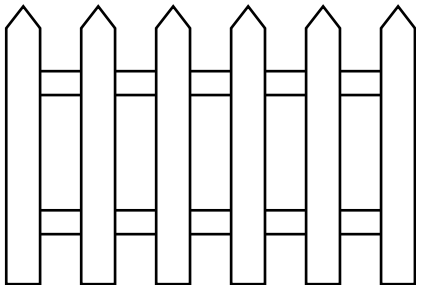
5. Which two streets below are <u>most likely</u> perpendicular?

A Scott Street and Hull *
B Scott Street and Alabama Street
C Lawrence and Hull
D Lawrence and Scott Street

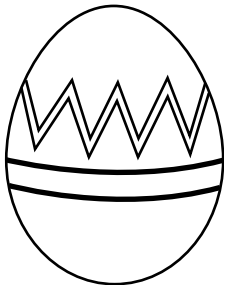
6. Which best shows an example of both perpendicular and parallel line segments?

A

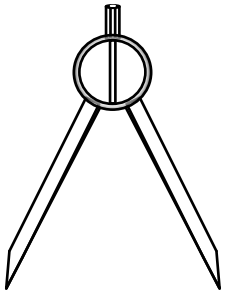
B *



C



D



Answer Key

Content Standard 8

Sample Multiple-Choice

1. C
2. D
3. A
4. B
5. A
6. B

GEOMETRY

Content Standard 9

Specify locations on a coordinate grid by using horizontal and vertical movements.

Item Type

Multiple-choice
Open-ended

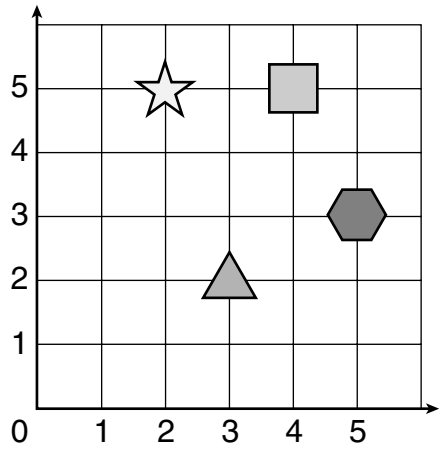
Additional Information

Word problems/real-life situations may be used.
Graphics will be used.

Sample Multiple-Choice Items

(continued on next page)

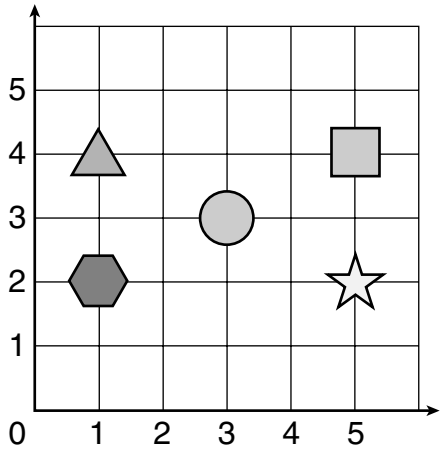
On the grid below, Travis moved from the triangle, along the grid lines, 3 spaces up, and then 1 space to the right.



1. On which figure did Travis land?

A **B** * **C** **D**

On the grid below, Debbie moved from the  , along the grid lines, 2 spaces to the left, and 1 space down.



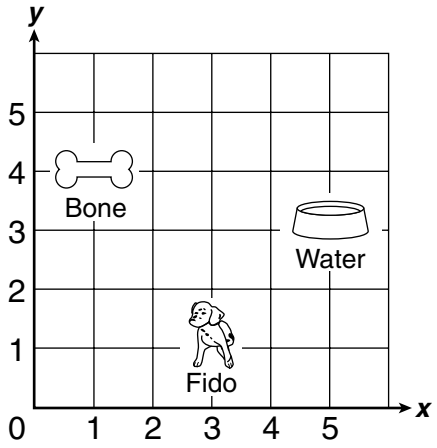
2. On which figure did Debbie land?

A **B** **C** * **D**

Sample Open-Ended Items

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

1. On the grid below, Fido wants to drink from his water dish and get his bone.



   a. Describe 1 way Fido can walk along the grid lines to go to the water dish.

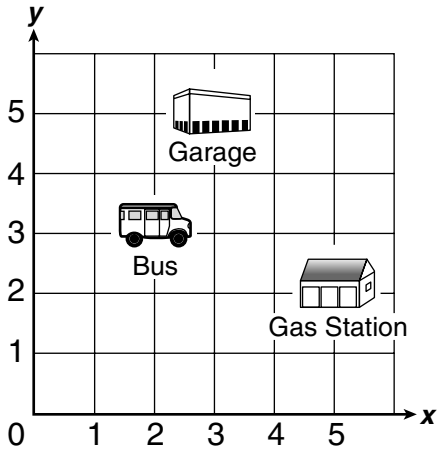
   b. Describe 1 way Fido can walk along the grid lines to go from the water dish to get his bone.

   c. Describe a different way Fido can walk along the grid lines to go from the water dish to get his bone.

Show all your work and/or explain each part in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

2. On the grid below, the bus must travel to the gas station and then to the garage.



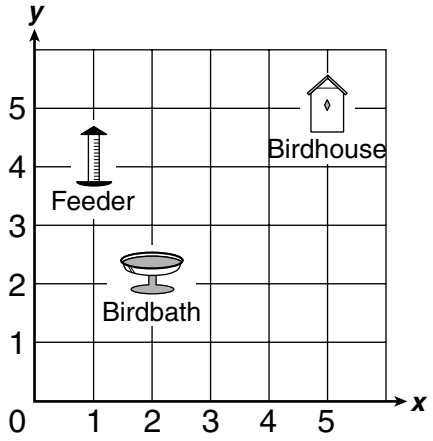
a. Describe 1 way the bus can travel along the grid lines to get to the gas station.

b. Describe 1 way the bus can travel along the grid lines to go from the gas station to the garage.

Show all your work and/or explain <u>each</u> <u>part</u> in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

3. On the grid below, the bird is going to fly from the birdhouse, drink from the birdbath, eat from the feeder, and return to the birdhouse.



a. Describe 1 way the bird can fly along the grid lines to get to the birdbath.

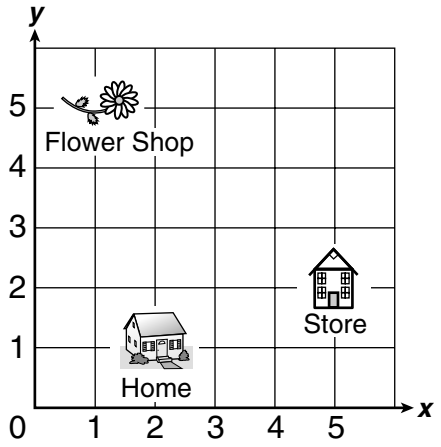
b. Describe 1 way the bird can fly along the grid lines to go from the birdbath to the feeder and return to the birdhouse.

c. Describe a <u>different</u> way the bird can fly along the grid lines to go from the birdbath to the feeder and return to the birdhouse.

Show all your work and/or explain <u>each</u> <u>part</u> in the space provided in the answer document.

You will need to show your work and/or explain your answer for this problem. You may use drawings, words, and/or numbers. Your answer should be written so that another person could read and understand it. It is important that you show all your work.

4. On the grid below, Ed's mom decided to leave the store and stop at the flower shop before going home.



   a. Describe 1 way Ed's mom can travel along the grid lines from the store to the flower shop.

   b. Describe 1 way Ed's mom can travel along the grid lines to go from the flower shop to her home.

Show all your work and/or explain <u>each</u> <u>part</u> in the space provided in the answer document.

Answer Key

Content Standard 9

Sample Multiple-Choice

1. B
2. C

Sample Open-Ended

1. Sample Response(s):

a. Fido can walk 2 spaces to the right and 2 spaces up to get to the water dish.

OR

Students can also copy the grid on their answer document and show the direction with arrows.

b. From the water dish Fido can walk 4 spaces to the left and 1 space up to get to his bone.

OR

Students can also copy the grid on their answer document and show the direction with arrows.

c. A different way Fido can go from the water dish to get his bone is 1 space up and 4 spaces to the left.

OR

Students can also copy the grid on their answer document and show the direction with arrows.

Score Point	Response Attributes
3	All is correct.
2	Two logics or explanations are correct. OR One logic or explanation and all answers are correct.
1	One or more answers to problems are correct. AND/OR Any one logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

2. Sample Response(s):

a. The bus can travel 3 spaces to the right and 1 space down to get to the gas station.

OR

Students can also copy the grid on their answer document and show the direction with arrows.

b. The bus can travel 3 spaces up and 2 spaces to the left to get to the garage.

OR

Students can also copy the grid on their answer document and show the direction with arrows.

Score Point	Response Attributes
3	All is correct.
2	Two logics or explanations are correct. OR One logic or explanation and all answers are correct.
1	One or more answers to problems are correct. AND/OR Any one logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

3. Sample Response(s):

a. A bird can fly from his birdhouse 3 spaces down and 3 spaces to the left to get to the birdbath.

OR

Students can also copy the grid on their answer document and show the direction with arrows.

b. From the birdbath the bird can fly 1 space to the left and 2 spaces up to get to the feeder and then 4 spaces to the right and 1 space up to get to the birdhouse.

OR

Students can also copy the grid on their answer document and show the direction with arrows.

c. A different way the bird can fly from the birdbath is 2 spaces up and 1 space to the left to get to the feeder. Then from the feeder go 1 space up and 4 spaces to the right.

OR

Students can also copy the grid on their answer document and show the direction with arrows.

Score Point	Response Attributes
3	All is correct.
2	Two logics or explanations are correct. OR One logic or explanation and all answers are correct.
1	One or more answers to problems are correct. AND/OR Any one logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

4. Sample Response(s):

a. Ed's mom can travel 3 spaces up and 4 spaces to the left to get from the store to the flower shop.

OR

Students can also copy the grid on their answer document and show the direction with arrows.

b. Ed's mom can travel 1 space to the right and 4 spaces down to get from the flower shop to home.

OR

Students can also copy the grid on their answer document and show the direction with arrows.

Score Point	Response Attributes
3	All is correct.
2	Two logics or explanations are correct. OR One logic or explanation and all answers are correct.
1	One or more answers to problems are correct. AND/OR Any one logic is correct.
0	None correct. (Also, blanks, rewrites problem, foreign language, illegible, refusals, off-task, etc., scored as invalid.)

MEASUREMENT

Content Standard 10

Measure length in metric units.

Item Type

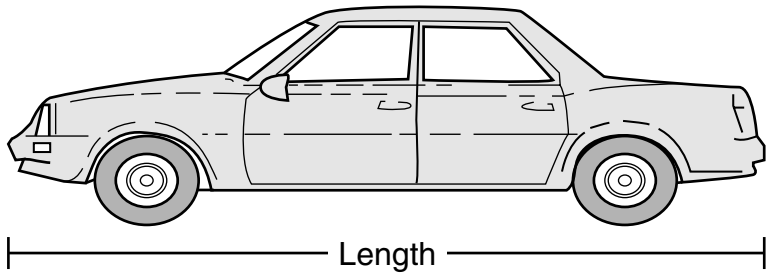
Multiple-choice

Additional Information

Word problems/real-life situations may be used.
Length will be measured to the nearer centimeter.

Sample Multiple-Choice Items

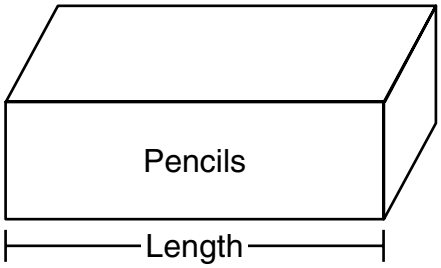
Use your centimeter ruler to measure the length of the car pictured below.



1. To the nearer centimeter, what is the length of the car?

8 cm	9 cm	10 cm	11 cm
A	**B**	**C** *	**D**

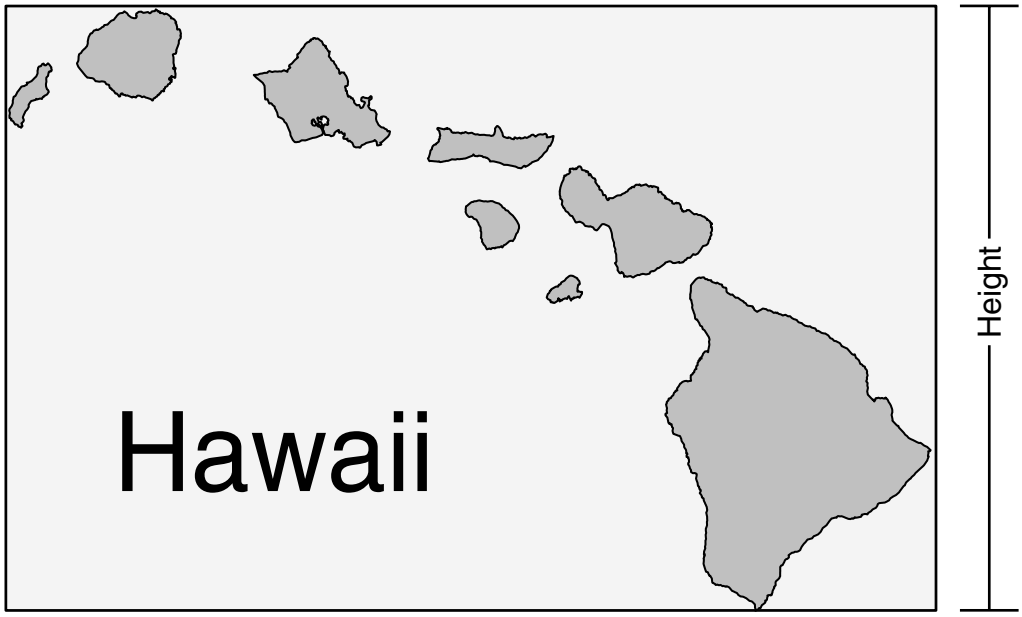
Use your centimeter ruler to measure the length of the pencil box pictured below.



2. To the nearer centimeter, what is the length of the pencil box?

A 5 cm *
B 6 cm
C 7 cm
D 8 cm

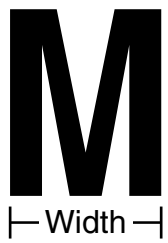
Use your centimeter ruler to measure the height of the map pictured below.



3. To the nearer centimeter, what is the height of the map?

6 cm	8 cm	12 cm	13 cm
A	**B** *	**C**	**D**

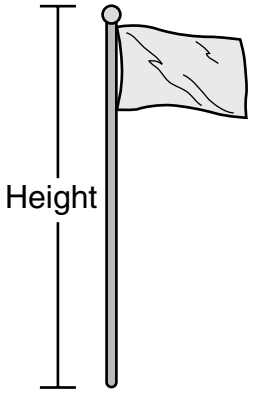
Use your centimeter ruler to measure the width of the letter M pictured below.



4. To the nearer centimeter, what is the width of the letter M?

A 1 cm
B 2 cm *
C 3 cm
D 4 cm

Use your centimeter ruler to measure the height of the flagpole pictured below.



5. To the nearer centimeter, what is the height of the flagpole?

A 5 cm *
B 4 cm
C 3 cm
D 2 cm

Answer Key

Content Standard 10

Sample Multiple-Choice

1. C
2. A
3. B
4. B
5. A

MEASUREMENT

Content Standard 11

Determine elapsed time to the day with calendars and to the hour with a clock.

Item Type

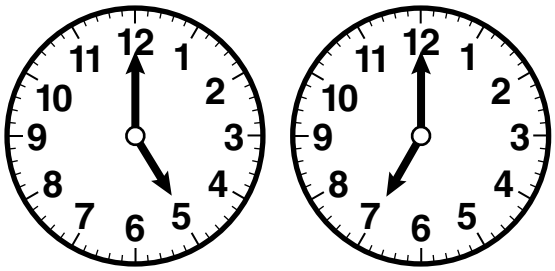
Multiple-choice

Additional Information

Word problems/real-life situations may be used.
Graphics will be used.
Analog and digital clocks will be used.

Sample Multiple-Choice Items

Dominic watched a movie Saturday afternoon. The clocks show when the movie began and ended.

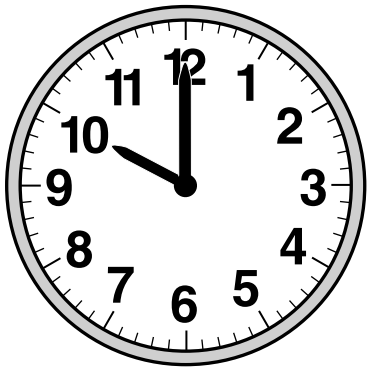


Movie Began Movie Ended

1. How many total hours did the movie last?

A 1 hour
B 2 hours *
C 4 hours
D 5 hours

The clock shows the time Mr. Lind left on a trip to Montgomery Wednesday morning. He arrived at 2:00 P.M. on Wednesday afternoon.



2. How many total hours did Mr. Lind's trip take?

A 10 hours
B 7 hours
C 4 hours *
D 3 hours

Rhonda's meeting began at 10:00 A.M. The clock shows the time the meeting ended that same day.

Time Ended

3. How many total hours was she at the meeting?

1	3	10	11
A	**B** *	**C**	**D**

Ansel practiced his guitar on Friday afternoon. The clocks show his starting time and stopping time.

Starting Time

Stopping Time

4. What is the total number of hours he practiced?

A 2 hours *
B 3 hours
C 4 hours
D 5 hours

Adam went to visit his grandmother. The clock shows the time Adam left his house that evening. He arrived at 10:00 P.M. the same evening.

Left

5. How many total hours did his trip take?

A 2 hours
B 4 hours *
C 6 hours
D 10 hours

John and his family went on a trip to Mobile, Alabama. The clocks show the time they left Friday afternoon and arrived Friday evening.

Left

Arrived

6. How many total hours did the trip take?

A 2 hours
B 3 hours *
C 5 hours
D 7 hours

A ship left Miami, Florida, on February 2 and returned 14 days later.

FEBRUARY

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	(2)	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

7. What was the date when the ship returned to Miami?

A February 12
B February 14
C February 16 *
D February 18

Josie arrived at her aunt's house at noon on October 16. She left her aunt's house at noon on October 27.

OCTOBER

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

8. How many full (24-hour) days did Josie stay with her aunt?

A 16 days
B 13 days
C 12 days
D 11 days *

Answer Key

Content Standard 11

Sample Multiple-Choice

1. B
2. C
3. B
4. A
5. B
6. B
7. C
8. D

DATA ANALYSIS AND PROBABILITY

Content Standard 12

Recognize data as either categorical or numerical.

Item Type

Multiple-choice

Additional Information

The terms categorical and numerical will not be used.

Sample Multiple-Choice Items

1. Milo should answer three of the following questions by writing a word or words.

   Which question should he answer by writing a numeral?

A How many years have you worked? *

B What job do you want?

C What is the name of your hometown?

D How are you going to get to work?

2. Coach Brown should answer three of the following questions by writing a word or words.

   Which question should he answer by writing a numeral?

A What kind of juice do you drink?

B What are your parents' names?

C What time do you go to bed? *

D What is your favorite snack?

3. Tamara should answer three of the following questions by writing a word or words.

   Which question should she answer by writing a numeral?

A What are the names of your two best friends?

B What did you eat for lunch today?

C What are your favorite subjects in school?

D What was your team's final score? *

4. Stefanie should answer three of the following questions by writing a word or words.

   Which question should she answer by writing a numeral?

A What is the age of your brother? *

B What is your mom's name?

C What kind of pet do you have at home?

D What is your favorite cartoon?

5. Chelsea should answer three of the following questions by writing a numeral.

   Which question should she answer by writing a word or words?

A How many minutes did you read last night?

B What coat should I wear? *

C What time does school end?

D How many desks are in your classroom?

6. Nick should answer three of the following questions by writing a numeral.

   Which question should he answer by writing a word or words?

A How many days of school did you miss this year?

B What time do you wake up in the mornings?

C What color is your notebook? *

D How many hours are you in school each day?

7. Dennis should answer three of the following questions by writing a numeral.

   Which question should he answer by writing a word or words?

A How many hours did you play ball?

B What is the length of the boat?

C How many days are there until my birthday?

D What kind of candy do you like? *

8. Justin should answer three of the following questions by writing a numeral.

   Which question should he answer by writing a word or words?

A How many inches tall is the giraffe?

B What color is the leopard? *

C How many pounds does the elephant weigh?

D What time did you leave the zoo?

Answer Key

Content Standard 12

Sample Multiple-Choice

1. A
2. C
3. D
4. A
5. B
6. C
7. D
8. B

DATA ANALYSIS AND PROBABILITY

Content Standard 13

Determine the likelihood of different outcomes in a simple experiment.

Item Type

Multiple-choice

Additional Information

Word problems/real-life situations may be used.
Tables and charts may be used only for graphic organization of information.
Graphics may be used.
In determining the likelihood, *most likely*, *least likely*, *certain*, *possible*, and *impossible* may be used.

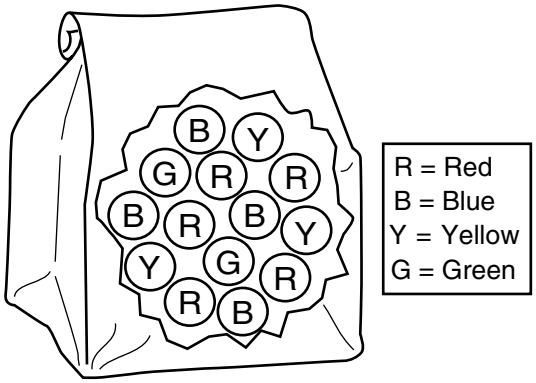
Sample Multiple-Choice Items

1. Susie has 36 stickers in a bag. There are 8 red, 6 blue, 12 green, and 10 yellow stickers. All the stickers are the same size and shape. There are no other stickers in the bag. Susie picks 1 sticker from the bag without looking.

   Which color sticker is Susie least likely to pick from the bag?

A Blue *
B Green
C Red
D Yellow

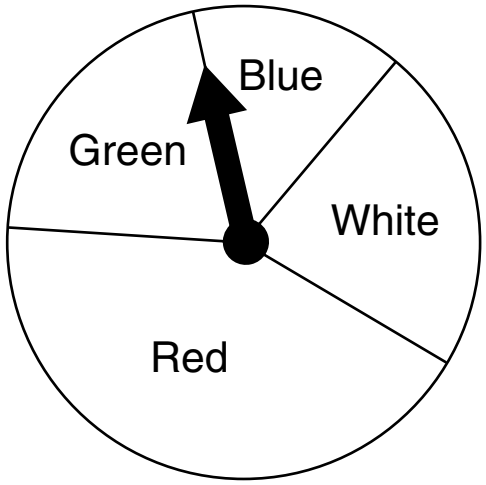
The bag shown below contains 14 marbles. All the marbles are the same size. Without looking, Doris will pick one marble from the bag.



2. Which color marble will Doris least likely pick from the bag?

A Yellow
B Green *
C Blue
D Red

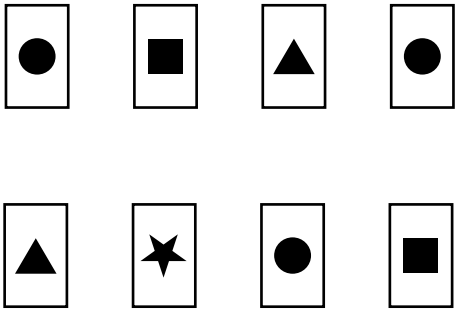
The arrow on the spinner below is spun once.



3. On which color space is the arrow most likely to land?

A Blue
B White
C Green
D Red *

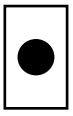
The following picture cards were on Randy's desk. All the picture cards were the same size and shape. Randy picked 1 picture card without looking.



4. Which picture card did Randy most likely pick?

A

B



C *

D

Answer Key

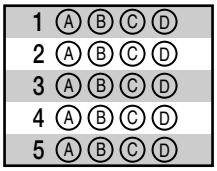
Content Standard 13

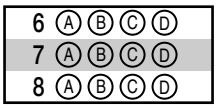
Sample Multiple-Choice

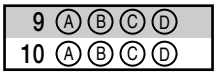
1. A
2. B
3. D
4. C

SAMPLE RESPONSE FORMAT

SAMPLE RESPONSE: MULTIPLE-CHOICE



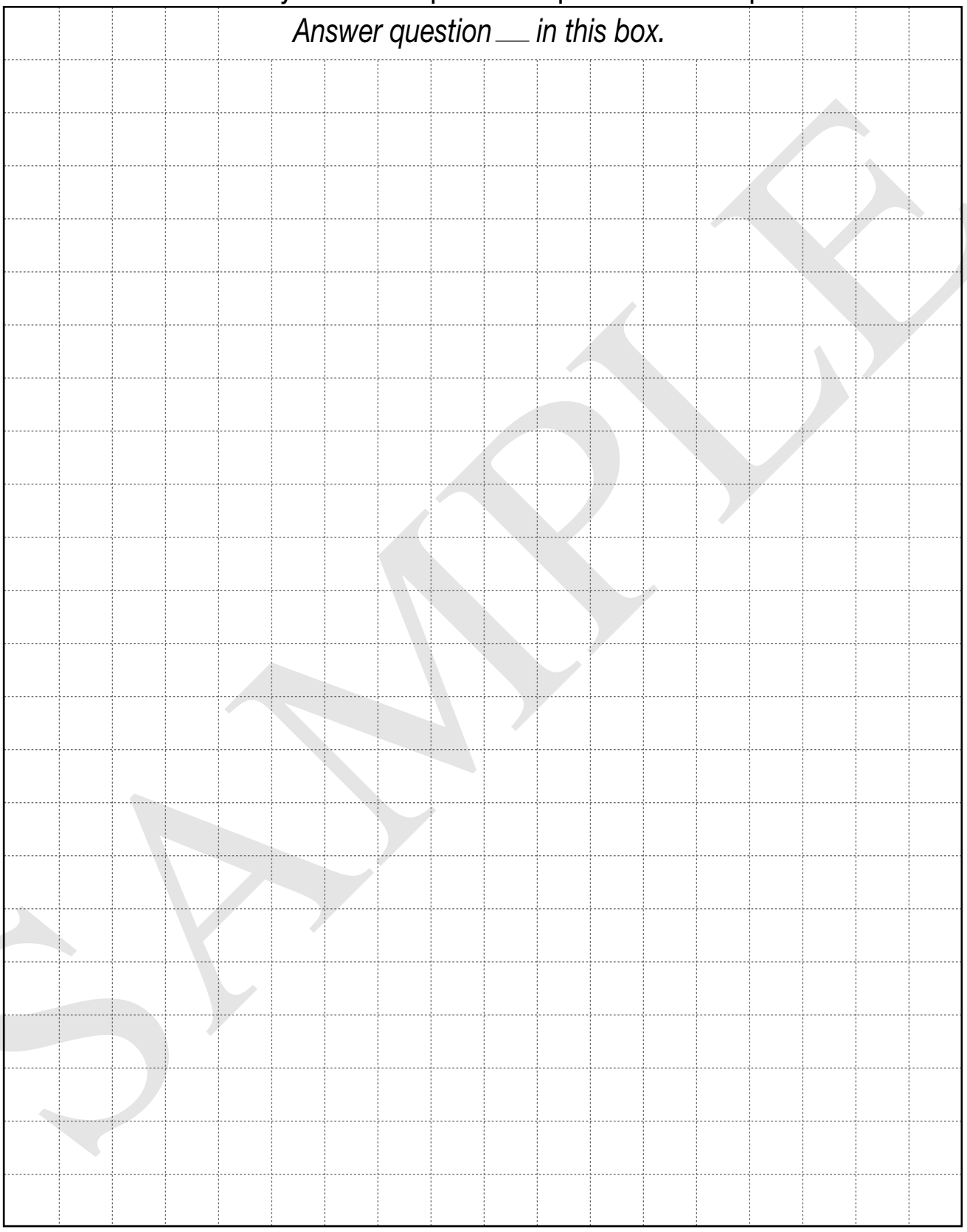




SAMPLE RESPONSE: OPEN-ENDED

Be sure to leave room in your answer space for all parts of this test question.

Answer question ___ in this box.



DO NOT WRITE OUTSIDE THE BOX.

DO NOT WRITE OUTSIDE THE BOX.

DO NOT WRITE OUTSIDE THE BOX.