P

MCAP

Maryland Comprehensive Assessment Program

Grade 3
Mathematics
Practice Test

MARYLAND STATE DEPARTMENT OF EDUCATION

EQUITY AND EXCELLENCE

1126615 1 2 3 4 5 A B C D E Printed in the USA ISD34107

Section 1
(Non-Calculator)

Directions:

Today, you will take Section 1 of the Grade 3 Mathematics Practice Test. You will not be able to use a calculator.

Read each question. Then, follow the directions to answer each question. Mark your answers by completely filling in the circles in your test booklet. Do not make any pencil marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely. If a question asks you to show or explain your work, you must do so to receive full credit. Only responses entered within the space provided will be scored.

If you do not know the answer to a question, you may go on to the next question. If you finish early, you may review your answers and any questions you did not answer in this section ONLY. Do not go past the stop sign.

1 A teacher arranged 42 bottle caps into 7 rows with the same number of bottle caps in each row.

Which expression can be used to find the number of bottle caps the teacher put in each row?

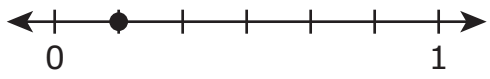
Ⓐ $42 \div 7$

Ⓑ $42 \div 6$

Ⓒ 42×7

Ⓓ 42×6

2 What fraction is represented by the point on the number line?



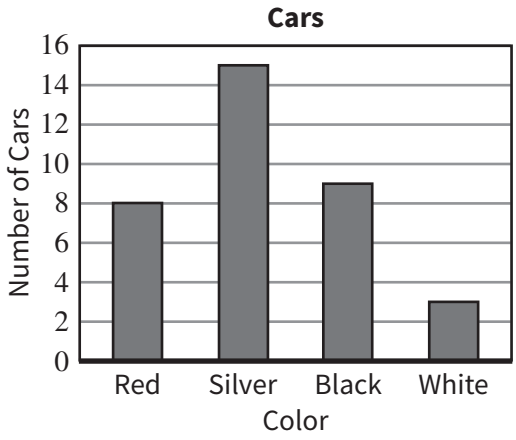
Ⓐ $\frac{6}{6}$

Ⓑ $\frac{5}{6}$

Ⓒ $\frac{2}{6}$

Ⓓ $\frac{1}{6}$

3 The following bar graph shows the number of cars of each color that passed by a school during a certain period of time.



How many more silver cars passed by the school than black cars and white cars combined?

Select one answer.

Ⓐ 3

Ⓑ 4

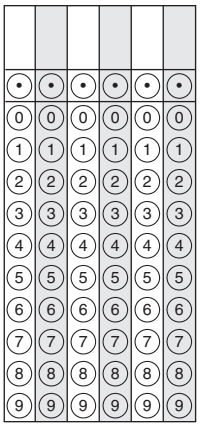
Ⓒ 6

Ⓓ 7

4 Complete the following equation.

$8 \times \square = 48$

Enter your answer in the space provided.



5 Which shape is partitioned into fourths?

Select one answer.

Ⓐ 

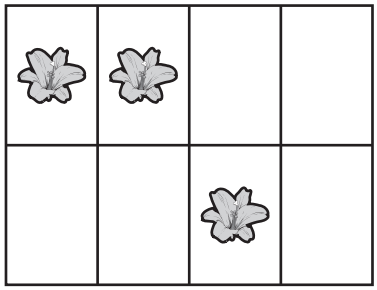
Ⓑ 

Ⓒ 

Ⓓ 

6 A student divided a sheet of paper into sections of equal size.

The student drew flowers on some of the sections as shown.



On what fraction of the sections of paper did the student draw flowers?

Ⓐ $\frac{3}{8}$

Ⓑ $\frac{1}{2}$

Ⓒ $\frac{5}{8}$

Ⓓ $\frac{2}{1}$

7 What is the result when an even number is multiplied by 5?

Select one answer.

Ⓐ The result is an even number with a 0 in the ones place.

Ⓑ The result is an odd number with a 0 in the ones place.

Ⓒ The result is an even number with a 5 in the ones place.

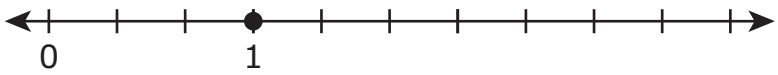
Ⓓ The result is an odd number with a 5 in the ones place.

8 Which **two** number lines show points that represent equivalent fractions?

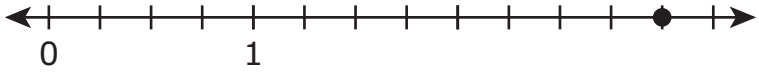
Select the **two** correct answers.

Ⓐ

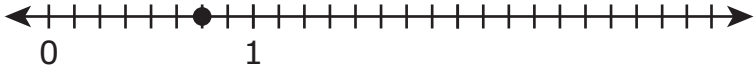
Ⓑ



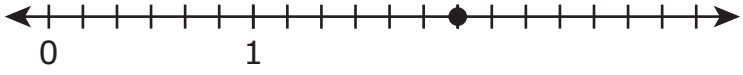
Ⓒ



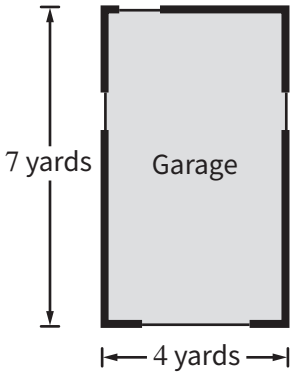
Ⓓ



Ⓔ



9 The following figure shows the rectangular floor of Mr. Soto's garage. Mr. Soto will paint the entire floor.



Which equation represents the amount of space that Mr. Soto will paint?

Select one answer.

Ⓐ $4 + 7 = 11$ yards

Ⓑ $4 \times 2 + 7 \times 2 = 22$ yards

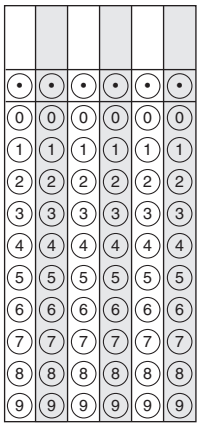
Ⓒ $4 \times 7 = 28$ square yards

Ⓓ $4 \times 2 \times 7 \times 2 = 112$ square yards

10 What is the value of the following expression?

$$308 + 97$$

Enter your answer in the space provided.



11 An expression is shown.

$$3 \times 10$$

Which **two** expressions have the same value as the given expression?

Select the **two** correct answers.

Ⓐ $3 \times (2 + 5)$

Ⓑ $3 \times (5 + 5)$

Ⓒ $(3 \times 2) + (3 \times 5)$

Ⓓ $(3 \times 5) + (3 \times 5)$

Ⓔ $(3 \times 5) \times (3 \times 5)$

12 Which comparison is true?

Select one answer.

Ⓐ $\frac{1}{2} < \frac{1}{3}$

Ⓑ $\frac{2}{3} > \frac{2}{4}$

Ⓒ $\frac{3}{6} < \frac{1}{6}$

Ⓓ $\frac{4}{8} > \frac{5}{8}$

STOP

Section 2
(Calculator)

Directions:

Today, you will take Section 2 of the Grade 3 Mathematics Practice Test. You will be able to use a calculator.

Read each question. Then, follow the directions to answer each question. Mark your answers by completely filling in the circles in your test booklet. Do not make any pencil marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely. If a question asks you to show or explain your work, you must do so to receive full credit. Only responses entered within the space provided will be scored.

If you do not know the answer to a question, you may go on to the next question. If you finish early, you may review your answers and any questions you did not answer in this section ONLY. Do not go past the stop sign.

1 A student wants to put a border around a notebook that measures 8 inches wide and 10 inches long.

The student thinks that the perimeter of the notebook is 18 inches because $8 + 10 = 18$.

Which sentence explains how to correct the student's thinking?

Ⓐ The student should have multiplied 8 by 10, then multiplied 10 by 8, and then added the two products.

Ⓑ The student should have multiplied 8 by 10, then multiplied 10 by 2, and then added the two products.

Ⓒ The student should have multiplied 8 by 2, then multiplied 10 by 2, and then added the two products.

Ⓓ The student should have multiplied 8 by 2, then multiplied 10 by 8, and then added the two products.

2 Wylie Elementary School has students in 1st through 6th grade.

The table shows the number of present and absent students for different grades on a certain day.

School Attendance

Grade	Number of Students Present	Number of Students Absent
2nd grade	85	14
3rd grade	104	13
4th grade	96	18

Which **two** questions could be answered based on the information in the table?

Select the **two** correct answers.

Ⓐ What is the total number of students in the school?

Ⓑ What is the total number of students who are in the 1st grade?

Ⓒ What is the total number of students who are in the 4th grade?

Ⓓ What is the total number of absent students on that day in the 2nd grade and the 3rd grade?

Ⓔ What is the total number of present students on that day in the 5th grade and the 6th grade?

3 A teacher is making supply boxes for her students to use when they work in groups.

- There are 9 supply boxes.
- Each supply box will have 6 colored markers.
- The teacher has 15 colored markers to put in the supply boxes.

The teacher thinks that 39 more markers are needed to fill the supply boxes because $6 \times 9 = 54$ and $54 - 15 = 39$.

Explain why the teacher's thinking is correct by explaining what the two equations represent in the problem.

Enter your answer and your work or explanation in the space provided.

4 A gardener has a rectangular garden.

- The length of the garden is 6 feet.
- The width of the garden is 3 feet.

Which expression could be used to find the area, in square feet, of the garden?

Ⓐ $6 + 3$

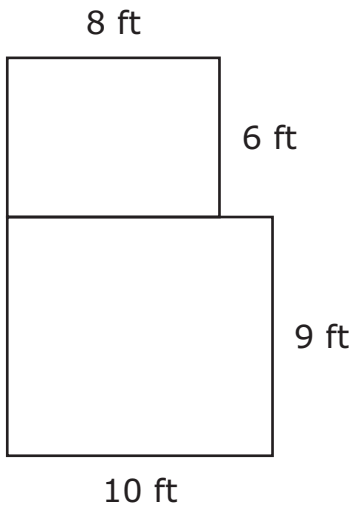
Ⓑ $6 - 3$

Ⓒ 6×3

Ⓓ $6 \div 3$

5 A pet store owner built two rectangular dog pens next to each other.

The picture shows the floors of the two dog pens.

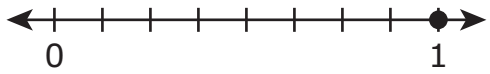


The pet store owner will cover the floors of the dog pens with concrete.

What is the total area, in square feet, of the floors of the two dog pens?

Enter your answer and your work or explanation in the space provided.

6 A point is shown on the number line.



Which **two** equations are true based on the values represented by the point on the number line?

Select the **two** correct answers.

Ⓐ $\frac{1}{1} = 1$

Ⓑ $\frac{1}{1} = 8$

Ⓒ $\frac{1}{8} = 1$

Ⓓ $\frac{1}{8} = 8$

Ⓔ $\frac{8}{8} = 1$

Ⓕ $\frac{8}{8} = 8$

STOP

Section 3
(Non-Calculator)

Directions:

Today, you will take Section 3 of the Grade 3 Mathematics Practice Test. You will not be able to use a calculator.

Read each question. Then, follow the directions to answer each question. Mark your answers by completely filling in the circles in your test booklet. Do not make any pencil marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely. If a question asks you to show or explain your work, you must do so to receive full credit. Only responses entered within the space provided will be scored.

If you do not know the answer to a question, you may go on to the next question. If you finish early, you may review your answers and any questions you did not answer in this section ONLY. Do not go past the stop sign.

GO ON ▶

1 Diana had 63 feet of rope. She cut the rope into 7 pieces of equal length.

Which expression represents the length, in feet, of each piece of rope?

Select one answer.

Ⓐ 63×7

Ⓑ $63 - 7$

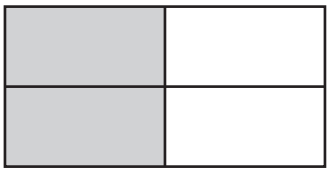
Ⓒ $63 + 7$

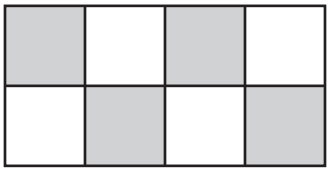
Ⓓ $63 \div 7$

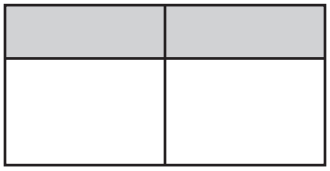
GO ON ▶

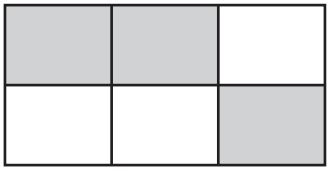
2 In which **three** figures does the shaded part represent $\frac{1}{2}$ of the figure?

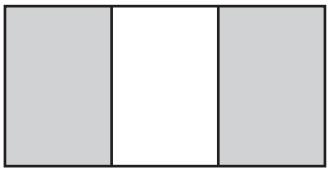
Select the **three** correct answers.

Ⓐ 

Ⓑ 

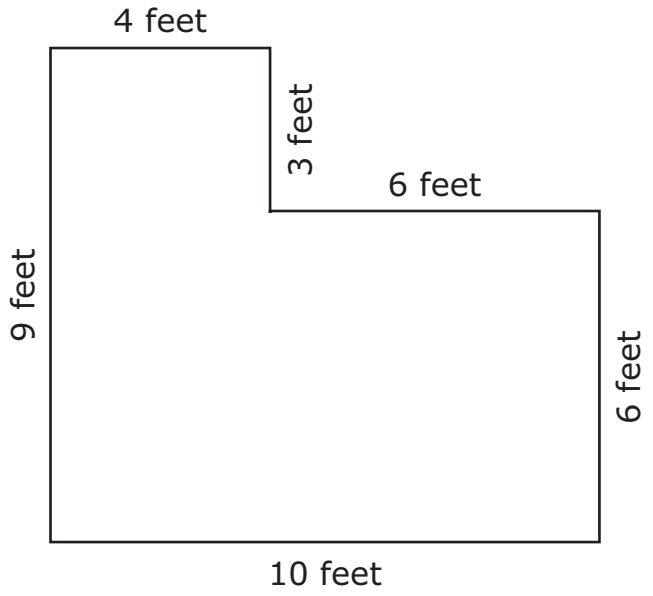
Ⓒ 

Ⓓ 

Ⓔ 

3 The figure shows a garden.

The figure is composed of two rectangles that do not overlap.



What is the area, in square feet, of the garden?

Ⓐ 38

Ⓑ 61

Ⓒ 72

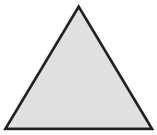
Ⓓ 90

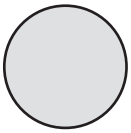
4 Which shape is a quadrilateral?

Select one answer.

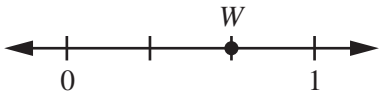
Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

5 Point W represents a fraction on the number line.



Which fraction is represented by point W?

Select one answer.

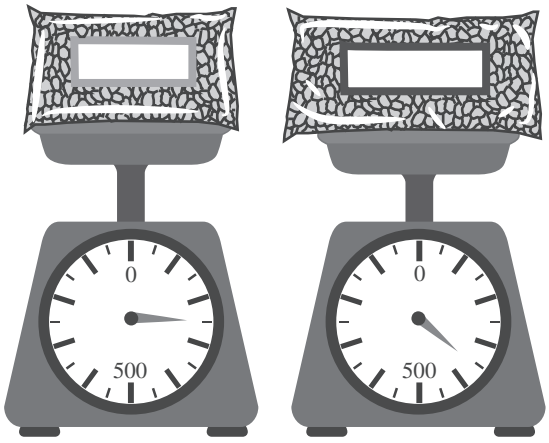
Ⓐ $\frac{0}{3}$

Ⓑ $\frac{1}{3}$

Ⓒ $\frac{2}{3}$

Ⓓ $\frac{3}{3}$

6 Terry bought 2 bags of beans. The mass of each bag, in grams, is shown on the scales.



How many grams of beans did Terry buy in all?

Select one answer.

Ⓐ 700 grams

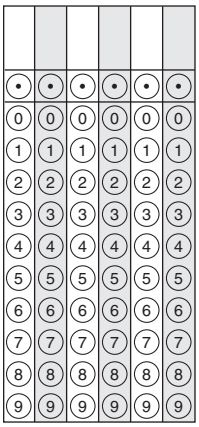
Ⓑ 650 grams

Ⓒ 600 grams

Ⓓ 550 grams

7 Round 148 to the nearest 10.

Enter your answer in the space provided.



GO ON ▶

8 Which **two** equations could be used to find the result of 7×5?

Select the **two** correct answers.

Ⓐ $5 \div 35 = 7$

Ⓑ $7 \div 35 = 5$

Ⓒ $35 \div 7 = 5$

Ⓓ $5 + 5 + 5 + 5 + 5 = 35$

Ⓔ $7 + 7 + 7 + 7 + 7 = 35$

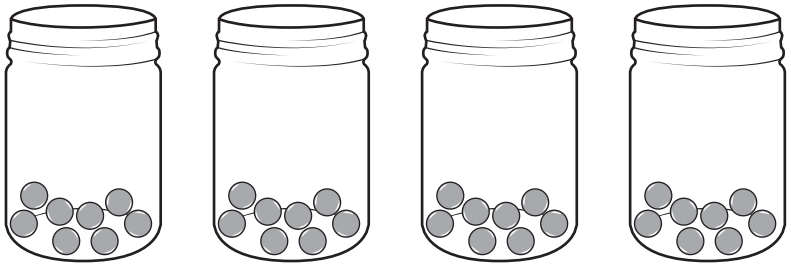
9 Byron will write a fraction that is equivalent to 1. The denominator is 2.

$$1 = \frac{\square}{2}$$

What number will Byron use in the numerator to write the fraction?

Enter your answer in the space provided.

10 The picture shows marbles in jars.



Which expression could be used to find the total number of marbles in the jars?

Ⓐ 4×8

Ⓑ $4 + 8$

Ⓒ $4 + 4 + 4 + 4$

Ⓓ $8 + 8 + 8 + 8 + 8 + 8 + 8 + 8$

11 A window is in the shape of a rectangle. The perimeter of the window is 24 feet.

Which **two** pairs of measurements could be the length and width of the window?

Select the **two** correct answers.

Ⓐ Length is 4 feet and width is 6 feet

Ⓑ Length is 7 feet and width is 5 feet

Ⓒ Length is 8 feet and width is 3 feet

Ⓓ Length is 9 feet and width is 3 feet

Ⓔ Length is 12 feet and width is 12 feet

Ⓕ Length is 14 feet and width is 10 feet

STOP

Section 4
(Calculator)

Directions:

Today, you will take Section 4 of the Grade 3 Mathematics Practice Test. You will be able to use a calculator.

Read each question. Then, follow the directions to answer each question. Mark your answers by completely filling in the circles in your test booklet. Do not make any pencil marks outside of the circles. If you need to change an answer, be sure to erase your first answer completely. If a question asks you to show or explain your work, you must do so to receive full credit. Only responses entered within the space provided will be scored.

If you do not know the answer to a question, you may go on to the next question. If you finish early, you may review your answers and any questions you did not answer in this section ONLY. Do not go past the stop sign.

1 A gym teacher took some bags of soccer balls to the soccer field.

The teacher put 6 soccer balls in each bag.

What other information is needed to find how many bags of soccer balls the teacher took to the field?

Ⓐ the total number of students in the gym class

Ⓑ the total number of players on the school's soccer team

Ⓒ the total number of soccer balls the teacher took to the field

Ⓓ the total number of soccer balls each group of students will get

GO ON ▶

2 A student made 20 necklaces.

- The student put 5 beads on each necklace.
- There were 10 beads in each package.

Which statement explains the student's correct thinking to find the total number of beads the student used to make all the necklaces?

Ⓐ The student thinks that there are 20 necklaces and there are 10 beads in each package, and $20 \div 10 = 2$.

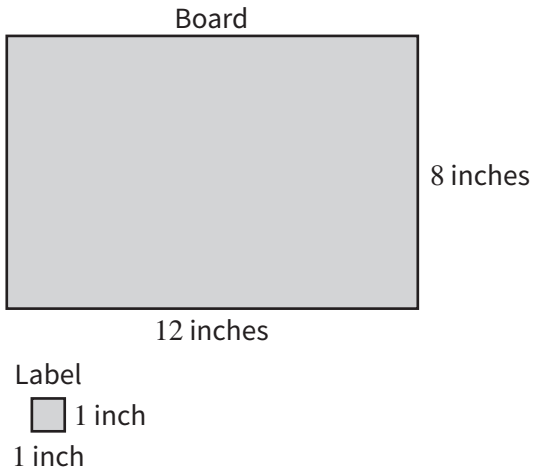
Ⓑ The student thinks that there are 20 necklaces and there are 10 beads in each package, and $20 \times 10 = 200$.

Ⓒ The student thinks that there are 20 necklaces and there are 5 beads on each necklace, and $20 \div 5 = 4$.

Ⓓ The student thinks that there are 20 necklaces and there are 5 beads on each necklace, and $20 \times 5 = 100$.

3 Rafael will cover a rectangular board with square labels. He will buy packages of square labels. Each package contains 6 labels of the same size.

The following figure shows the side lengths of the board and of one label.



Part A

What is the least number of labels Rafael needs to cover the board? Show your work or explain how you found your answer.

Enter your answer and your work or explanation in the space provided.

Part B

What is the least number of packages of labels Rafael should buy? Show your work or explain how you found your answer.

Enter your answer and your work or explanation in the space provided.

4 A farmer has a field with 4 rows of apple trees. There are 9 trees in each row.

Which expression could be used to find the total number of apple trees the farmer has in the field?

Ⓐ $9 + 4$

Ⓑ 9×4

Ⓒ $9 - 4$

Ⓓ $9 \div 4$

GO ON ▶

5 A student has several pennies.

The student organized the pennies into the array shown.

The student wants to put all the pennies in stacks with the same number of pennies in each stack.

Explain three different ways the student could put the pennies in stacks with the same number of pennies in each stack.

Explain how you used the array of pennies to help you find the different ways to stack the pennies.

Enter your answer and your work or explanation in the space provided.

5

6 A student wrote the expression $7 + 7 + 7 + 7 + 7$ to find the value of 7×5.

The student said that when writing a different expression to represent 7×5, only the numbers 7 and 5 can be used.

Which **two** expressions could be used to show that the student's response is incorrect?

Select the **two** correct answers.

Ⓐ 5×7

Ⓑ $(4 + 5) \times (3 + 5)$

Ⓒ $(4 \times 5) + (3 \times 5)$

Ⓓ $(7 + 3) \times (7 + 2)$

Ⓔ $(7 \times 3) + (7 \times 2)$

STOP

MCAP Maryland Comprehensive Assessment Program

Practice Test Answer and Alignment Document
Mathematics: Grade 3
Pencil-and-Paper

The following pages include the answer keys for all machine-scored items. A sample student response for the top score is included for all hand-scored constructed response items.

- Some answer keys include one possible sample student response. Other valid methods for solving the problem can earn full credit unless a specific method is required by the item.
- In items where the scores are awarded for full and partial credit, the definition of partial credit will be confirmed during range-finding (reviewing sets of real student work).
- If students make a computation error, they can still earn points for reasoning or modeling.

Section 1

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	A	3.OA.A.2
2.	D	3.NF.A.2a
3.	A	3.MD.B.3
4.	6	3.OA.C.7-2
5.	B	3.G.A.2
6.	A	3.NF.A.1
7.	A	3.OA.D.9
8.	A, C	3.NF.A.3a
9.	C	3.MD.C.7b
10.	405	3.NBT.A.2
11.	B, D	3.OA.B.5
12.	B	3.NF.A.3d

Section 2

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	C	3.R.2 3.MD.D.8
2.	C, D	3.M.1 3.NBT.A.2 3.M.1-1
3.	**Sample Top Score Response** There are 9 supply boxes and each box will need 6 colored markers, so the equation 6 × 9 = 54 means that the teacher needs a total of 54 colored markers to fill the supply boxes. The teacher needs 54 colored markers and the teacher already had 15 colored markers, so the equation 54 – 15 = 39 means that the teacher needs 39 more colored markers to fill the supply boxes. The teacher's thinking is correct. **Refer to the Holistic Rubric for 3-Point Reasoning Constructed Response Items for score point information.**	3.R.4 3.OA.A.3-1
4.	C	3.M.1 3.MC.C.7b 3.M.1-3
5.	**Sample Top Score Response** The area of the smaller rectangle that is 8 × 6 is 48 square feet. The area of the larger rectangle that is 10 × 9 is 90 square feet. The area of both rectangles is 48 + 90 = 138 square feet. **Refer to the Holistic Rubric for 3-Point Modeling Constructed Response Items for score point information.**	3.M.1 3.MD.D.8 3.M.1-4
6.	A, E	3.R.1 3.NF.A.3c

Section 3

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	D	3.OA.A.3-2
2.	A, B, D	3.NF.A.3b
3.	C	3.MD.C.7d
4.	B	3.G.A.1
5.	C	3.NF.A.2b
6.	C	3.MD.A.2
7.	150	3.NBT.A.1
8.	C, E	3.OA.C.7-1
9.	2	3.NF.A.3c
10.	A	3.OA.A.1
11.	B, D	3.MD.D.8

Section 4

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	C	3.M.1 3.OA.A.3-2 3.M.1-2
2.	D	3.R.4 3.OA.A.3-1
3.	**Sample Top Score Response** **Part A:** The number of labels that Rafael needs is found by calculating the area of the board. The area is calculated by multiplying the length by the width of the board. The length is 12 inches and the width is 8 inches. The area, in square inches, of the board is $8 \times 12 = 96$. The area, in square inches, of each label is $1 \times 1 = 1$. The number of labels needed to cover the board is 96. **Part B:** The least number of packages of labels is found by dividing the number of labels by the number of labels in each package. Rafael needs 96 labels. There are 6 labels in each package. $96 \div 6 = 16$ So, Rafael needs 16 packages of labels. **Refer to the Holistic Rubric for 3-Point Modeling Constructed Response Items for score point information.**	3.M.1 3.MD.C.7b 3.M.1-4
4.	B	3.M.1 3.OA.A.1 3.M.1-3

Item Number	Answer Key	Evidence Statement Key/ Content Scope
5.	**<u>Sample Top Score Response</u>** There are 4 rows of pennies in the array so the student could make 4 stacks of pennies. Since there are 5 pennies in each row, there would be 5 pennies in each stack. There are 5 columns of pennies in the array, so the student could make 5 stacks of pennies. Since there are 4 pennies in each column, there would be 4 pennies in each stack. If I divide the array in half between the second and third rows, there would be 10 pennies in the top two rows and 10 pennies in the bottom two, so the student could make 2 stacks of pennies with 10 pennies in each stack. **Refer to the Holistic Rubric for 3-Point Reasoning Constructed Response Items for score point information.**	3.R.1 3.OA.A.2
6.	C, E	3.R.3 3.OA.B.5