Maryland MCAP Grade 4 Math Practice

Exam Materials
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Answer Key Materials
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Student Name _____

MCAP
Maryland Comprehensive Assessment Program

Grade 4
Mathematics
Test Booklet

Practice Test

Section 1
(Non-Calculator)

Directions:

Today, you will take Section 1 of the Grade 4 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 answer document. 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 Which expression has the same value as $1{,}435 \div 7$?

Select one answer.

A $(14 \div 7) + (35 \div 7)$

B $(14 \div 7) - (35 \div 7)$

C $(1{,}400 \div 7) + (35 \div 7)$

D $(1{,}400 \div 7) - (35 \div 7)$

2 Which **two** expressions are equivalent to $\dfrac{8}{12}$?

Select the **two** correct answers.

A $\dfrac{1}{6} + \dfrac{8}{2}$

B $\dfrac{4}{1} + \dfrac{4}{12}$

C $\dfrac{4}{10} + \dfrac{4}{2}$

D $\dfrac{1}{12} + \dfrac{7}{12}$

E $\dfrac{3}{4} + \dfrac{3}{4} + \dfrac{2}{4}$

F $\dfrac{1}{12} + \dfrac{2}{12} + \dfrac{2}{12} + \dfrac{3}{12}$

4

GO ON ▶

3 A student will prepare 20 gift bags. Each bag will have 10 stickers.

The student already has 50 stickers and will buy more stickers in packages. Each package has 15 stickers.

How many packages of stickers does the student need to buy?

Enter your answer in the space provided.

4 Roberta has a rectangular shelf. The shelf has a length of 40 inches and a perimeter of 104 inches.

Which expression **best** represents the area, in square inches, of the shelf?

Select one answer.

A 40×12

B 40×52

C $40 + 12 + 40 + 12$

D $40 + 52 + 40 + 52$

GO ON ▶

5 Round 796,814 to the nearest ten thousand.

Enter your answer in the space provided.

6 Which comparison is true?

Select one answer.

A $4.7 = 7.4$

B $0.3 > 0.8$

C $0.20 = 0.02$

D $0.06 < 0.10$

GO ON ▶

7 There are 5 motorcycles in a parking lot. The number of cars in the parking lot is 8 times as many as the number of motorcycles.

Which equation shows how to find the number of cars in the parking lot?

A $5 \times 8 = 40$

B $5 + 8 = 13$

C $5 = 8 \times 40$

D $5 = 8 + 13$

8 Mr. Reis made 5 batches of cookies. He used $\frac{3}{4}$ cup of sugar to make each batch.

What is the total amount of sugar, in cups, Mr. Reis used to make 5 batches of cookies?
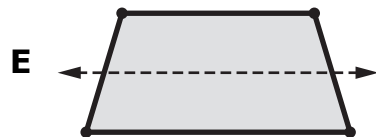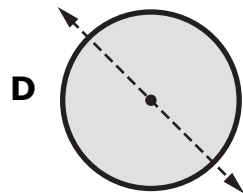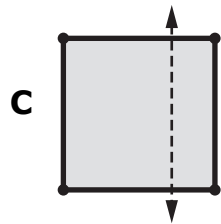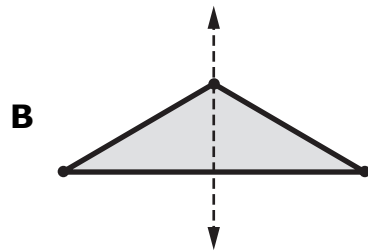
Select one answer.

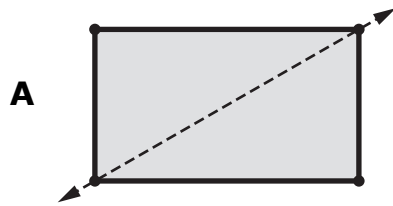**A** $\frac{3}{20}$

B $\frac{15}{20}$

C $\frac{8}{9}$

D $\frac{15}{4}$

GO ON ▶

9 In which **two** shapes does the dashed line appear to be a line of symmetry?

Select the **two** correct answers.

A

B

C

D

E

GO ON ▶

10 Samuel had $1\frac{7}{8}$ cups of milk. He used $1\frac{5}{8}$ cups of milk to make biscuits.

What is the amount of milk, in cups, that Samuel had after he made biscuits?

Select one answer.

A $\frac{2}{8}$

B $\frac{12}{8}$

C $1\frac{2}{8}$

D $3\frac{4}{8}$

11 The incomplete area model shown represents the product of 26 and 18.

	20	+ 6
10	?	60
+ 8	160	48

$26 \times 18 = 468$

Which number should replace the ? in the area model?

Enter your answer in the space provided.

GO ON ▶

12 What is the decimal value of $2\frac{5}{100}$?

Enter your answer in the space provided.

STOP

Section 2
(Calculator)

Directions:

Today, you will take Section 2 of the Grade 4 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 answer document. 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.

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GO ON ▶

1 A student drew a quadrilateral with one right angle. The student then divided the quadrilateral into two triangles. The student measured one angle in one of the triangles as shown in the figure.
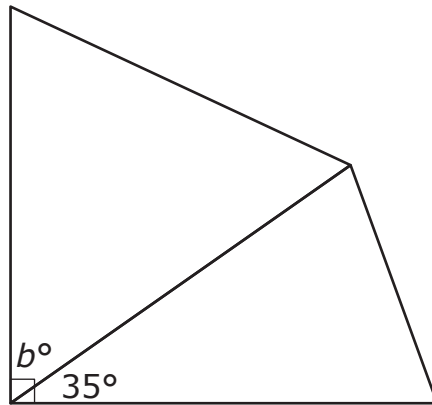
Which solution path could the student use to find the value of *b* without measuring the angle?

A add 35 to 90

B divide 90 by 35

C multiply 35 by 90

D subtract 35 from 90

14 **GO ON ▶**

2 A student rounded 3872 to the nearest hundred and to the nearest thousand. The student noticed that the results, 3900 and 4000, were not equal. The student claimed that the two results will never be equal when a number is rounded to the nearest hundred and to the nearest thousand.

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

Select the **two** correct answers.

A 43,594

B 55,962

C 67,299

D 72,357

E 81, 974

3 A train museum has a toy train that goes around the entire museum. The train goes around 10 times in 2 hours.

A student calculated the amount of time it takes for the train to go around 1 time. The work is shown.

$$2 \text{ hours} \div 10 = 0.2 \text{ hour}$$

0.2 is the same as 0.20, so it takes
20 minutes for the train to go around 1 time.

The student's work is incorrect.

- Explain any errors in the student's work.
- Explain how to correct the student's work and find the amount of time it takes for the train to go around the museum 1 time.
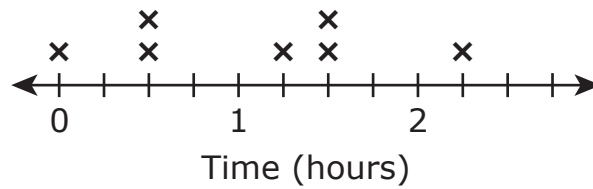
Enter your answer and your work or explanation in the space provided.

15

GO ON ▶

4 Last week, a student kept track of how long he practiced soccer each day.

The line plot shows the student's data.

Time (hours)

Which three questions can be answered using the information in the line plot?

Select the **three** correct answers.

A What was the greatest amount of time that the student practiced on any day last week?

B What was the total amount of time the student practiced last week?

C On which day last week did the student practice the longest?

D Did the student practice more last week or the week before?

E How many days last week did the student not practice?

GO ON ▶

5 The figure shows the dimensions of a rectangular floor. The two openings represent doors. Each door is 3 feet wide.

18 feet

Door

14 feet
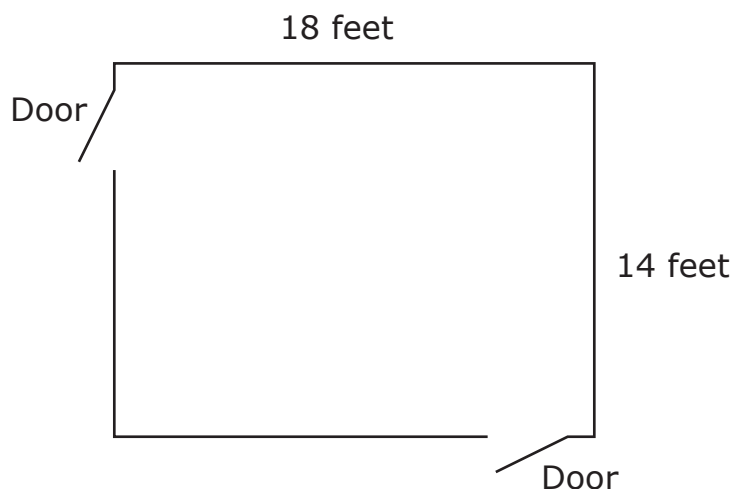
Door

A contractor will buy baseboards to place around the entire floor, except for the doors. Each baseboard is 8 feet long and costs $11.

Find the total cost of the baseboards the contractor needs to buy for the room.

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

17

GO ON ▶

6 A student used these models to compare the fractions $\frac{7}{12}$ and $\frac{6}{8}$. The student incorrectly claimed that $\frac{7}{12} > \frac{6}{8}$ because more sections are shaded in the model that represents the fraction $\frac{7}{12}$ than in the model that represents the fraction $\frac{6}{8}$.

$$\frac{7}{12} \quad > \quad \frac{6}{8}$$
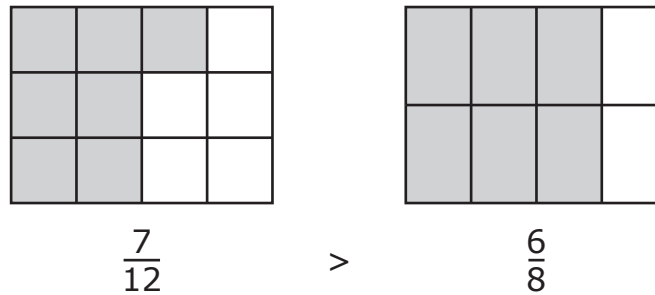
Which statements explain why the claim is incorrect?

A The student only compared the numerators. The student should have compared the number of parts and the shape of each part in each model.

B The student only compared the denominators. The student should have compared the number of parts and the shape of each part in each model.

C The student only compared the numerators. The student should have compared the number of shaded parts and the size of each part in each model.

D The student only compared the denominators. The student should have compared the number of shaded parts and the size of each part in each model.

**STOP**

Section 3
(Non-Calculator)

Directions:

Today, you will take Section 3 of the Grade 4 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 answer document. 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.

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GO ON ▶

1 The diagram shows angle *ACB*.
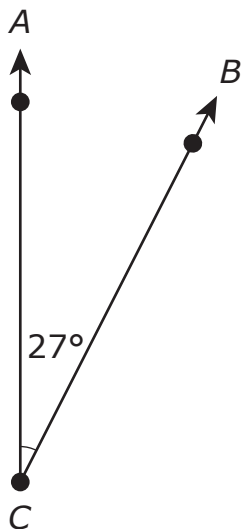
Which statement is true about angle *ACB*?

A The number of 1° angles that angle *ACB* turns through is twenty-seven.

B The number of 7° angles that angle *ACB* turns through is twenty.

C The number of 20° angles that angle *ACB* turns through is seven.

D The number of 90° angles that angle *ACB* turns through is twenty-seven.

2 What is the value of $\dfrac{3}{10} + \dfrac{8}{100}$?

Select one answer.

A $\dfrac{11}{110}$

B $\dfrac{11}{100}$

C $\dfrac{38}{110}$

D $\dfrac{38}{100}$

GO ON ▶

3 Which **two** comparisons are true?

Select the **two** correct answers.

A $999{,}999 < 1{,}000{,}000$

B $253{,}800 > 443{,}166$

C $42{,}709 = 42{,}907$

D $24{,}604 < 24{,}218$

E $11{,}386 > 11{,}368$

**4** What is the value of $4\frac{1}{4} - 1\frac{3}{4}$?

A $3\frac{3}{4}$

B $3\frac{2}{4}$

C $3\frac{1}{4}$

D $2\frac{2}{4}$

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GO ON ▶

**5** Which two problems are solved using 30×40?

Select the **two** correct answers.

A One box has 30 pencils. Another box has 40 pencils. How many pencils are in the boxes in all?

B There are 30 slides in a small playground. There are 40 slides in a large playground. How many slides are in the small and large playgrounds?

C A classroom has 30 books. The number of pages in the books is 40 times as many as the number of books. How many pages are in the books?

D One elementary school has 30 teachers. There are 40 more teachers at a middle school than the elementary school. How many teachers are at the middle school?

E There are 30 clerks at a store. The number of hours the clerks worked this week is 40 times as many as the number of clerks. How many hours did the clerks work this week?

6 Each model shown represents one whole and each model is shaded into equal parts.
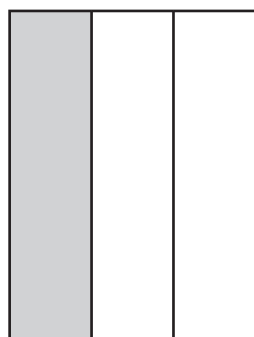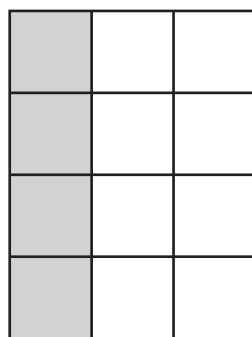
Model 1   Model 2

Which expression represents the equivalent fractions shown by the shaded parts in the models?

A $\dfrac{1}{3} = \dfrac{1 + 3}{3 + 3}$

B $\dfrac{1}{3} = \dfrac{1 \times 4}{3 \times 4}$

C $\dfrac{1}{2} = \dfrac{1 + 3}{2 + 3}$

D $\dfrac{1}{2} = \dfrac{1 \times 4}{2 \times 4}$

Section 3

GO ON ▶

7 This line plot shows the weights, in pounds, of different objects in a student's backpack.
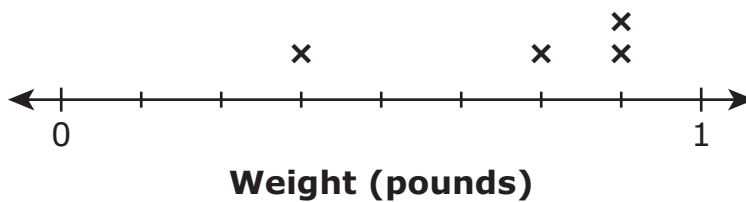
Weight (pounds)

What is the difference, in pounds, between the greatest weight and the least weight?

A $\frac{3}{8}$

B $\frac{4}{8}$

C $\frac{5}{8}$

D $\frac{6}{8}$

GO ON ▶

8 Each of these models is divided into equal parts.

Model A: [| | | |] = 1 whole

Model B: [| | | | |] = 1 whole

Model C: [| | | | | |] = 1 whole

A baker will make 3 pies. The baker needs $\frac{1}{4}$ teaspoon of salt for each pie. The baker will shade parts in one of the models to represent the fraction of a teaspoon of salt needed for 3 pies.

How many parts should be shaded in which model?

A 3 parts in Model A should be shaded.

B 3 parts in Model C should be shaded.

C 4 parts in Model B should be shaded.

D 4 parts in Model C should be shaded.

9 In the following number pattern, the first term is 3.

3, 10, 17, ____

Use the rule "Add 7" to find the fourth term in the pattern.

Enter your answer in the space provided.

GO ON ▶

10 Which equation is true?

Select one answer.

A $\dfrac{6}{12} = \dfrac{4}{8}$

B $\dfrac{4}{5} = \dfrac{9}{10}$

C $\dfrac{1}{2} = \dfrac{1}{100}$

D $\dfrac{3}{6} = \dfrac{2}{6}$

11 What is the value of the expression?

$5217 - 3146$

Enter your answer in the space provided.

STOP

Section 4
(Calculator)

Directions:

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GO ON ▶

1 There are six different pies left over after a party. Each of the pies has a fractional amount left at the end of the party. The line plot shows the fractions of pies leftover.
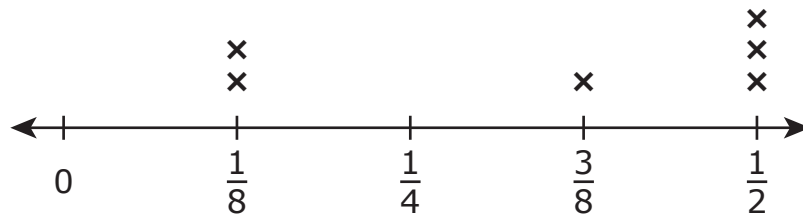
Each person who attended the party will receive an equal amount of the leftover pie.

Which piece of information is needed to determine how much pie each person should receive?

A the types of pie that are left over

B the type of pie each person likes most

C the number of slices in each whole pie

D the number of people who attended the party

2 A teacher with 25 students needs to prepare 40 one-page worksheets for each student. Each package of paper has 500 pages. The teacher thinks that 2 packages of paper are needed.

Which **two** steps are part of a solution path to show why the teacher's thinking is correct?

Select the **two** correct answers.

A Add 40 to 25 to determine the total number of worksheets the teacher needs.

B Divide 40 by 25 to determine the total number of worksheets the teacher needs.

C Multiply 40 by 25 to determine the total number of worksheets the teacher needs.

D Add the total number of worksheets to 500 to determine the number of packages the teacher needs.

E Divide the total number of worksheets by 500 to determine the number of packages the teacher needs.

F Multiply the total number of worksheets by 500 to determine the number of packages the teacher needs.

Section 4

GO ON ▶

3 An athlete needs to exercise $3\frac{5}{10}$ hours each week.

- The athlete exercised $\frac{6}{10}$ hour on Sunday.

- The athlete exercised $\frac{3}{10}$ hour on Monday.

- The athlete exercised $\frac{4}{10}$ hour each on Tuesday, Wednesday, and Thursday.

Create a solution path to find the time that the athlete needs to exercise the rest of the week.

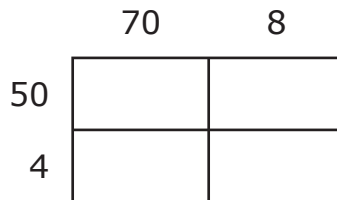Enter your answer and your work or explanation in the space provided.

GO ON ▶

4 The figure represents a rectangular floor. A custodian is installing tiles on the floor. Each tile covers 2 square feet of area.

74 feet

42 feet
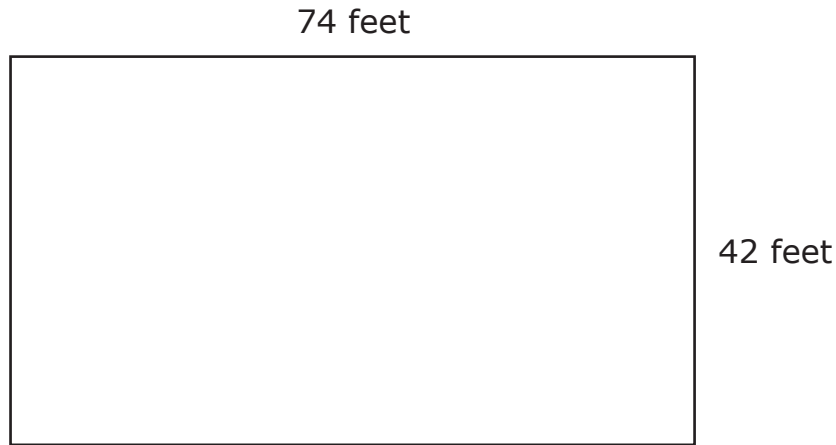
Which steps should the custodian take to find the number of tiles needed?

A First, the custodian should add the four side lengths. Next, the custodian should divide the result by 2.

B First, the custodian should add the four side lengths. Next, the custodian should multiply the result by 2.

C First, the custodian should multiply the length by the width. Next, the custodian should divide the result by 2.

D First, the custodian should multiply the length by the width. Next, the custodian should multiply the result by 2.

5 A model is shown.

70   8

50

4

Explain how the model could be used to find the result of 54×78. Then find the result of 54×78.

Enter your answer and your explanation in the space provided.

Section 4

35

GO ON ▶

6 A student added $\frac{3}{10}$ and $\frac{2}{100}$ and got a result of $\frac{5}{100}$. The student's work is shown.

Step 1 (replace $\frac{3}{10}$ with an equivalent fraction): $\frac{3}{10} + \frac{2}{100} = \frac{3}{100} + \frac{2}{100}$

Step 2 (combine fractions): $\frac{3}{100} + \frac{2}{100} = \frac{3+2}{100}$

Step 3 (add numerators) : $\frac{3+2}{100} = \frac{5}{100}$

Which statement is true about the student's work and answer?

A The work and answer are correct.

B The answer is incorrect. The student made a mistake in step 1 because $10 + 100 = 110$.

C The answer is incorrect. The student made a mistake in step 1 because $\frac{3}{10}$ is not equal to $\frac{3}{100}$.

D The answer is incorrect. The student made a mistake in step 2 because $100 + 100 = 200$.

STOP

Practice Test Answer and Alignment Document
Mathematics: Grade 4
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.	C	4.NBT.B.6
2.	D, F	4.NF.B.3b
3.	10	4.OA.A.3-1
4.	A	4.MD.A.3
5.	800000	4.NBT.A.3
6.	D	4.NF.C.7
7.	A	4.OA.A.1-2
8.	D	4.NF.B.4c
9.	B, D	4.G.A.3
10.	A	4.NF.B.3d
11.	200	4.NBT.B.5-2
12.	2.05	4.NF.C.6

Section 2

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	D	4.M.1 4.MD.C.7 4.M.1-3
2.	B, E	4.R.3 4.NBT.A.3
3.	**<u>Sample Top Score Response</u>** The student divided correctly, but 0.20 hour is not the same as 20 minutes. 0.20 hour is $\dfrac{2}{10}$ of an hour and 20 minutes is $\dfrac{1}{3}$ of an hour. Before dividing by 10, the student could have changed 2 hours to 120 minutes. 120 minutes $\div 10 = 12$ minutes. So it takes 12 minutes for the train to go around the museum 1 time. **Refer to the Holistic Rubric for 3-Point Reasoning Constructed Response Items for score point information.**	4.R.2 4.NF.C.6 4.MD.A.2
4.	A, B, E	4.M.1 4.MD.B.4 4.M.1-1

Item Number	Answer Key	Evidence Statement Key/ Content Scope
5.	**<u>Sample Top Score Response</u>** The perimeter of the floor is $18 + 14 + 18 + 14 = 64$ feet. The width of the two doors needs to be subtracted. There are 2 doors with a width of 3 feet. The total width is $2 \times 3 = 6$ feet. So the length of baseboards, in feet, that are needed is $64 - 6 = 58$. The length of each baseboard is 8 feet. $58 \div 8 = 7\frac{1}{4}$ feet, so the contractor needs to buy 8 baseboards. The total cost, in dollars, is $8 \times 11 = 88$. **Refer to the Holistic Rubric for 3-Point Modeling Constructed Response Items for score point information.**	4.M.1 4.OA.A.3-2 4.MD.A.3 4.M.1-4
6.	C	4.R.1 4.NF.A.2

Section 3

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	A	4.MD.C.5b
2.	D	4.NF.C.5
3.	A, E	4.NBT.A.2
4.	D	4.NF.B.3c
5.	C, E	4.OA.A.2
6.	B	4.NF.A.1
7.	B	4.MD.B.4
8.	A	4.NF.B.4a
9.	24	4.OA.C.5
10.	A	4.NF.A.2
11.	2071	4.NBT.B.4-2

Section 4

Item Number	Answer Key	Evidence Statement Key/ Content Scope
1.	D	4.M.1 4.MD.B.4 4.M.1-2
2.	C, E	4.R.4 4.OA.A.3-2
3.	**<u>Sample Top Score Response</u>** The total time exercised from Sunday to Thursday needs to be subtracted from $3\frac{5}{10}$. $$3\frac{5}{10} - \frac{6}{10} = 2\frac{9}{10}$$ $$2\frac{9}{10} - \frac{3}{10} = 2\frac{6}{10}$$ $$2\frac{6}{10} - 3 \times \frac{4}{10} = \frac{26}{10} - \frac{12}{10} = \frac{14}{10}$$ The athlete needs to exercise $1\frac{4}{10}$ more hours this week. **Refer to the Holistic Rubric for 3-Point Modeling Constructed Response Items for score point information.**	4.M.1 4.NF.B.3d 4.NF.B.4c 4.M.1-4
4.	C	4.M.1 4.MD.A.3 4.M.1-3

Item Number	Answer Key	Evidence Statement Key/ Content Scope
5.	**<u>Sample Top Score Response</u>** The model could be used to find the partial products. 70 and 8 are each multiplied by 50 and 4. 3500 is the product of 50 and 70. 400 is the product of 50 and 8. 280 is the product of 70 and 4. And 32 is the product of 8 and 4. Lastly, the partial products should be added together to get the product of 4212. **Refer to the Holistic Rubric for 3-Point Reasoning Constructed Response Items for score point information.**	4.R.1 4.NBT.B.5-1
6.	C	4.R.2 4.NF.C.5