

# New York NYSTP 2016 Grade 3 Math

Exam Materials  
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Answer Key Materials  
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Rubric Materials  
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Name: \_\_\_\_\_



# New York State *Testing Program*

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## 2016 Common Core Mathematics Test Book 1

Grade **3**

April 13–15, 2016

Released Questions

# Book 1



## TIPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

- Read each question carefully and think about the answer before choosing your response.
- You have been provided with a ruler to use during the test. Use the ruler whenever you think it will help you to answer the question.
- Plan your time.

1

Which clock shows the time 7:08?

A



B



C



D



**GO ON**

**2** What is 836 rounded to the nearest 10?

- A 800
- B 830
- C 840
- D 870

**3** Which two values are located at the same point on a number line?

- A  $\frac{4}{1}$  and 4
- B  $\frac{1}{3}$  and 3
- C  $\frac{8}{8}$  and 8
- D  $\frac{6}{2}$  and 4

7

Umi created the number pattern below by adding the same amount each time to get the next number.

20, 40, 60, 80, . . .

What will be the eighth number in the pattern?

- A 160
- B 240
- C 320
- D 640

8

In which equation could the number six replace the question mark to make the equation true?

- A  $9 \times \underline{\quad} = 56$
- B  $48 \div \underline{\quad} = 8$
- C  $30 \times 5 = \underline{\quad}$
- D  $24 \div 3 = \underline{\quad}$

12

The table shows the total number of wheels Mr. Monroe needs to make different numbers of wagons.

### **WHEELS NEEDED FOR WAGONS**

Number of Wagons	Total Number of Wheels
1	4
2	8
3	12
4	16

What is one pattern that can be seen in the table?

- A The number of wheels increases by 1 each time.
- B The number of wheels increases by 3 each time.
- C The number of wheels increases by 4 each time.
- D The number of wheels increases by 12 each time.

**GO ON**

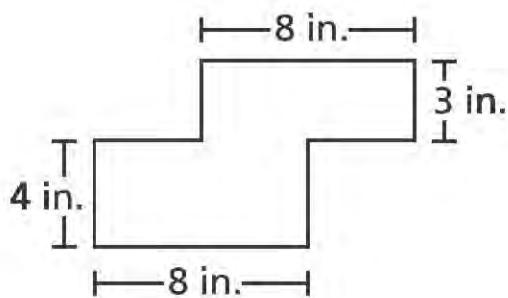
13

If the equation  $5 \times \underline{\quad} = 45$  is true, then which expression can be used to find the missing value?

- A  $9 \div 45$
- B  $5 \div 45$
- C  $45 \div 9$
- D  $45 \div 5$

14

A diagram of Keisha's poster board is shown below.



What was the total area, in square inches, of Keisha's poster board?

- A 46 square inches
- B 56 square inches
- C 112 square inches
- D 192 square inches

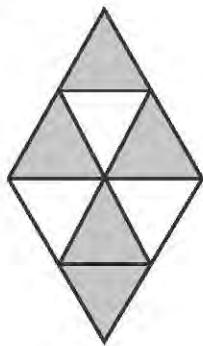
19

Maddie will ride her bike a total of 56 miles over 7 days. She will ride the same number of miles each day. What is the total number of miles Maddie will ride each day?

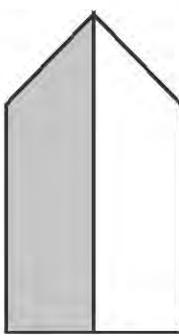
- A 8
- B 9
- C 49
- D 63

20

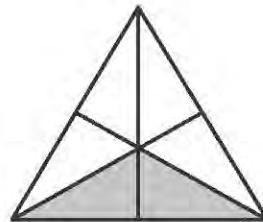
Four students each drew a figure. Each student shaded part of the figure to represent a fraction.



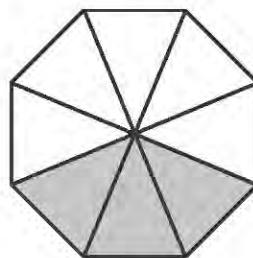
Selena



Tara



Carson



Erik

Which sentence about the figures is true?

- A Selena shaded  $\frac{5}{8}$  of her figure.
- B Tara shaded  $\frac{1}{1}$  of her figure.
- C Carson shaded  $\frac{2}{4}$  of his figure.
- D Erik shaded  $\frac{5}{3}$  of his figure.

**GO ON**

**21** A group of students played a basketball game after school. Which total can be found using the expression  $7 \times 2$ ?

- A the total number of points if a player made 7 shots and each shot was worth 2 points
- B the total number of basketballs if 7 basketballs were old and 2 basketballs were new
- C the total number of points if one player had 7 points and a different player had 2 points
- D the total number of basketballs used if there were 7 basketballs and 2 of the basketballs were not used

**22** Which two fractions both represent the same location on a number line?

- A  $\frac{2}{3}, \frac{1}{5}$
- B  $\frac{3}{4}, \frac{6}{8}$
- C  $\frac{2}{4}, \frac{3}{5}$
- D  $\frac{5}{6}, \frac{5}{8}$

# Book 2



## TIPS FOR TAKING THE TEST

Here are some suggestions to help you do your best:

- Read each question carefully and think about the answer before choosing your response.
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- Plan your time.

**23** What number makes the equation below true?

$$81 \div \underline{\quad} = 9$$

- A 8
- B 9
- C 72
- D 90

**24** Which expression is equal to 720?

- A  $7 \times 20$
- B  $8 \times 80$
- C  $9 \times 80$
- D  $9 \times 90$

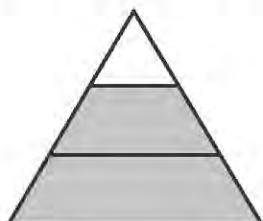
**25** Mr. Kohlberg owns a flower shop. At the beginning of the day, he had 152 roses. Mr. Kohlberg sold 96 of the roses and then wanted to separate the rest of the roses equally among 8 vases. What will be the total number of roses in each vase?

- A 7
- B 12
- C 48
- D 56

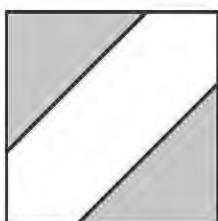
**GO ON**

26

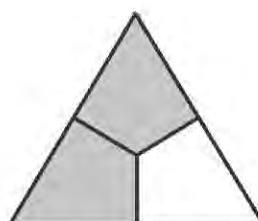
There are four shapes shown below.



Shape 1



Shape 2



Shape 3



Shape 4

Which of the shapes is  $\frac{2}{3}$  shaded?

- A shape 1
- B shape 2
- C shape 3
- D shape 4

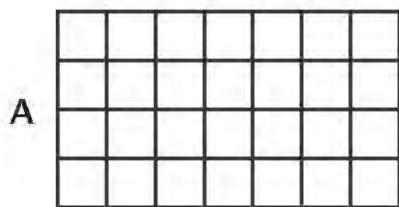
27

Which situation could be represented by the expression  $6 \times 2$ ?

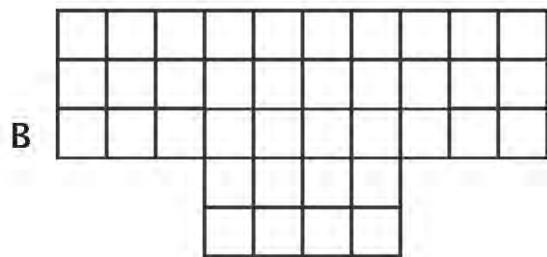
- A Rocco hiked six miles each day for two days.
- B Rocco had six baseballs and gave away two of them.
- C Rocco had a total of six tennis balls in two cans.
- D Rocco biked six miles and then continued for two more miles.

31

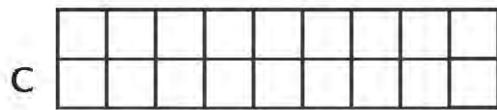
Mr. Gomez built a deck. The deck had an area of 29 square meters. Which figure could represent the deck?



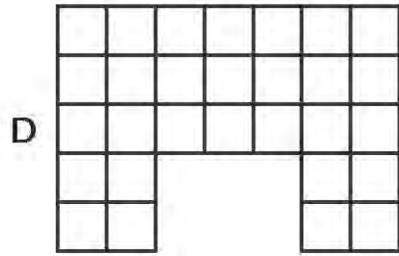
KEY  
□ = 1 square meter



KEY  
□ = 1 square meter



KEY  
□ = 1 square meter



KEY  
□ = 1 square meter

**GO ON**

**32**

A number belongs in the box below. When the number is rounded to the nearest hundred, the result will be 900.

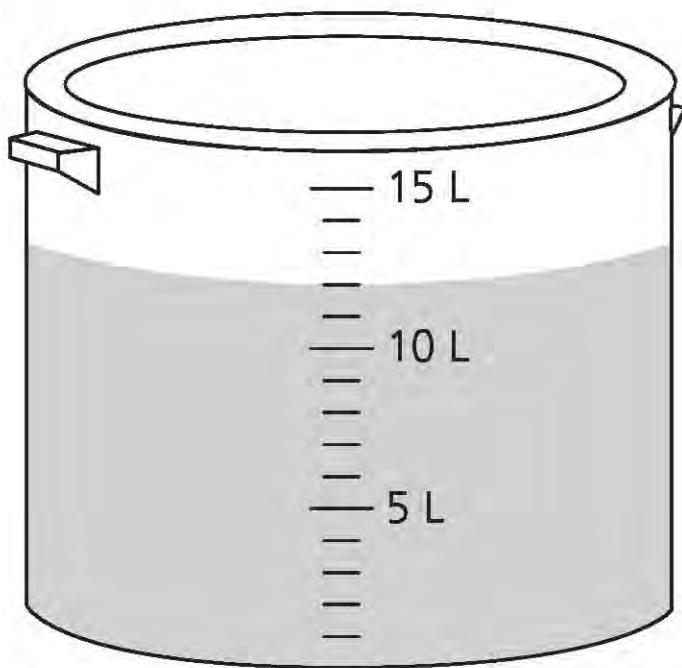


Which number belongs in the box?

- A** 849
- B** 852
- C** 960
- D** 999

33

Kara has a bucket of water, as shown below.



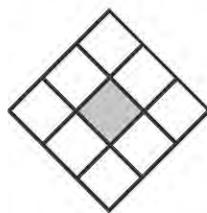
Kara wants to pour all of the water equally into 3 bowls for her dogs. How many liters of water should Kara pour into each bowl?

- A 4
- B 5
- C 9
- D 15

**GO ON**

**34**

Leroy made a game board, shown below. Each small square on the game board has the same area.

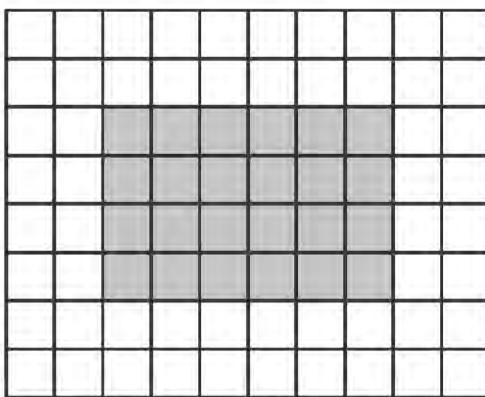


What fraction of the game board is shaded?

- A  $\frac{1}{9}$
- B  $\frac{1}{8}$
- C  $\frac{1}{6}$
- D  $\frac{1}{3}$

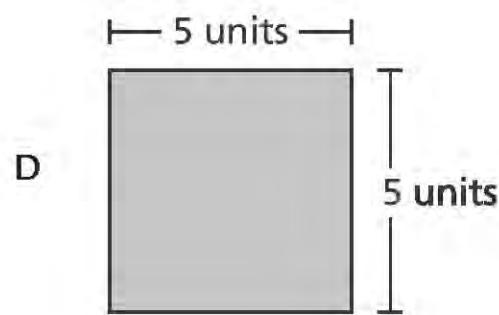
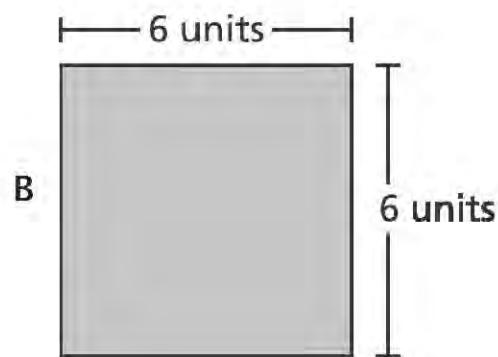
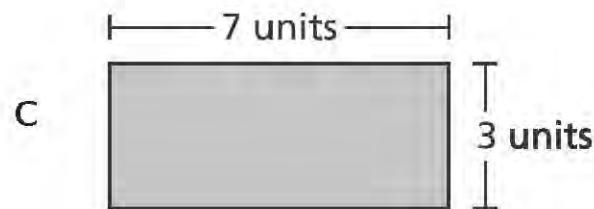
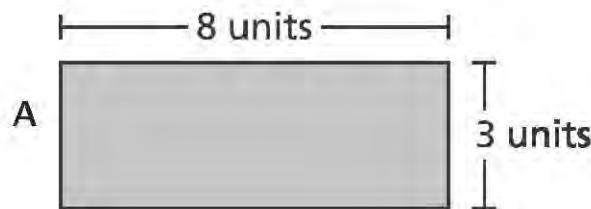
**38**

Tomas made a poster for his science project. The shaded part of the figure below shows the area of his poster.



KEY	
	= 1 square unit

Which figure has the same area as the poster?



**GO ON**

**39** The first number in a number pattern is 28. The pattern rule is to add 14 to get the next number in the pattern. If the pattern continues, which statement is true?

- A All the numbers in the pattern can be divided equally by 10.
- B All the numbers in the pattern can be divided equally by 4.
- C All the numbers in the pattern can be divided equally by 8.
- D All the numbers in the pattern can be divided equally by 7.

**40** There were 6 rows of chairs set up for a meeting. Each row had 8 chairs. What was the total number of chairs set up for the meeting?

- A 14
- B 36
- C 48
- D 64

**41** A circle is divided into parts. Each part is  $\frac{1}{4}$  of the total area of the circle. Which sentence describes the circle?

- A The circle has 1 small part and 3 large parts.
- B The circle has 1 small part and 4 large parts.
- C The circle has 4 parts that are each the same size.
- D The circle has 5 parts that are each the same size.

**42**

A baker made 232 muffins. He sent 190 of the muffins to a local hotel. He will put the rest of the muffins in boxes. Each box can hold 6 muffins. Which equation can be used to find  $b$ , the number of boxes the baker will need?

- A  $(232 - 190) \div 6 = b$
- B  $(232 + 190) \times 6 = b$
- C  $(232 - 190) \times 6 = b$
- D  $(232 + 190) \div 6 = b$

**GO ON**

# Book 3



## TIPS FOR TAKING THE TEST

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- Read each question carefully and think about the answer before writing your response.
- You have been provided with a ruler to use during the test. Use the ruler whenever you think it will help you to answer the question.
- Be sure to show your work when asked.
- Plan your time.

**45**

Haley cut pieces of ribbon to make bookmarks. Each bookmark was  $\frac{1}{8}$  foot long. Draw a point at  $\frac{1}{8}$  on the number line below and label the point A.



Haley placed 5 of the bookmarks end to end.

Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.

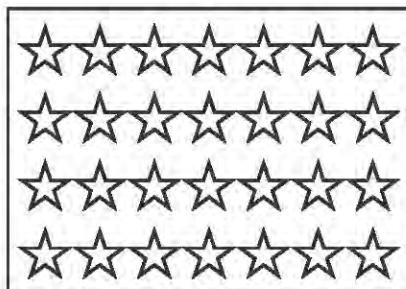


**GO ON**

**46**

Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

Page 1



Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

Page 2



Page 3



Complete the expression below to represent the total number of stickers on pages 2 and 3.

$$\underline{\quad} \times (\underline{\quad} + \underline{\quad})$$

**GO ON**

**47**

Several students voted on their favorite sports activities.

- Eight students voted for basketball.
- Three students voted for volleyball.
- Seven students voted for baseball.
- Four students voted for kickball.

Complete the picture graph below to show the data.

### FAVORITE SPORT ACTIVITY

Activity	Number of Students
Basketball	
Volleyball	
Baseball	
Kickball	

KEY
● = 2 students

**GO ON**

**48**

Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

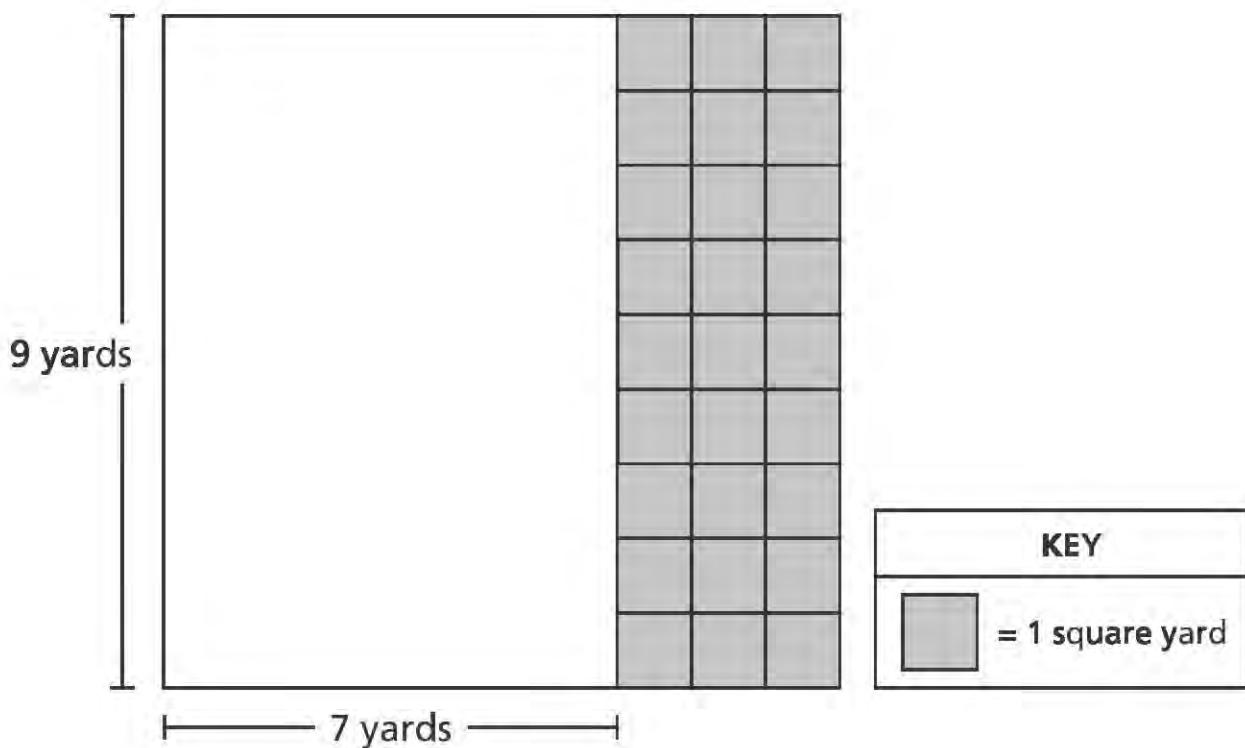
**Show your work.**

**Answer** \_\_\_\_\_ pieces

**GO ON**

49

Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.



What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

**Show your work.**

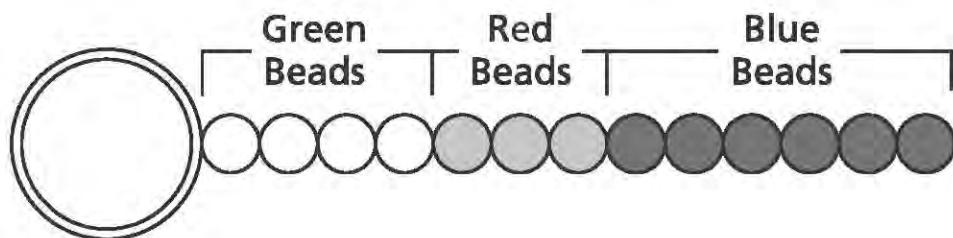
**Answer** \_\_\_\_\_ square yards

**GO ON**

50

Sharon wants to make key chains with different-colored beads, as shown below.

### KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

**Show your work.**

**Answer** \_\_\_\_\_ red beads

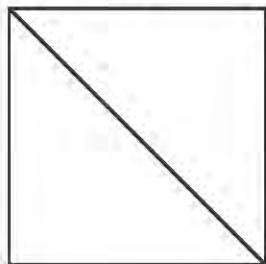
\_\_\_\_\_ blue beads

**GO ON**

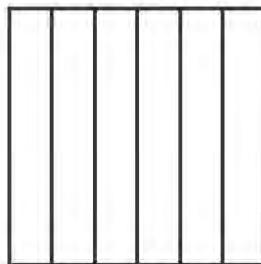
51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

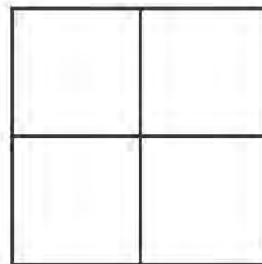
A



B



C



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**GO ON**

**52**

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

***Show your work.***

**Answer** \$ \_\_\_\_\_

**STOP**

**THE STATE EDUCATION DEPARTMENT**  
**THE UNIVERSITY OF THE STATE OF NEW YORK / ALBANY, NY 12234**  
**2016 Mathematics Tests Map to the Standards**  
**Released Questions Available on EngageNY**

**Grade 3**

Question	Type	Key	Points	Standard	Cluster	Secondary Standard(s)	Multiple Choice Questions:		Constructed Response Questions:	
							Percentage of Students Who Answered Correctly (P-Value)	Average Points Earned	P-Value (Average Points Earned ÷ Total Possible Points)	
<b>Book 1</b>										
1	Multiple Choice	A	1	CCSS.Math.Content.3.MD.A.1	Measurement and Data		0.79			
2	Multiple Choice	C	1	CCSS.Math.Content.3.NBT.A.1	Number and Operations in Base Ten		0.77			
3	Multiple Choice	A	1	CCSS.Math.Content.3.NF.A.3c	Number and Operations—Fractions	CCSS.Math.Content.3.NF.A.2b	0.31			
7	Multiple Choice	A	1	CCSS.Math.Content.3.NBT.A.3	Number and Operations in Base Ten	CCSS.Math.Content.3.OA.D.9	0.83			
8	Multiple Choice	B	1	CCSS.Math.Content.3.OA.A.4	Operations and Algebraic Thinking		0.58			
12	Multiple Choice	C	1	CCSS.Math.Content.3.OA.D.9	Operations and Algebraic Thinking		0.81			
13	Multiple Choice	D	1	CCSS.Math.Content.3.OA.B.6	Operations and Algebraic Thinking		0.55			
14	Multiple Choice	B	1	CCSS.Math.Content.3.MD.C.7d	Measurement and Data		0.62			
19	Multiple Choice	A	1	CCSS.Math.Content.3.OA.A.3	Operations and Algebraic Thinking		0.65			
20	Multiple Choice	A	1	CCSS.Math.Content.3.NF.A.1	Number and Operations—Fractions	CCSS.Math.Content.3.G.A.2	0.85			
21	Multiple Choice	A	1	CCSS.Math.Content.3.OA.A.1	Operations and Algebraic Thinking		0.73			
22	Multiple Choice	B	1	CCSS.Math.Content.3.NF.A.3a	Number and Operations—Fractions		0.49			
<b>Book 2</b>										
23	Multiple Choice	B	1	CCSS.Math.Content.3.OA.A.4	Operations and Algebraic Thinking		0.84			
24	Multiple Choice	C	1	CCSS.Math.Content.3.NBT.A.3	Number and Operations in Base Ten		0.57			
25	Multiple Choice	A	1	CCSS.Math.Content.3.OA.D.8	Operations and Algebraic Thinking		0.53			
26	Multiple Choice	C	1	CCSS.Math.Content.3.NF.A.1	Number and Operations—Fractions	CCSS.Math.Content.3.G.A.2	0.72			

## Grade 3

## Released Questions Available on EngageNY

Question	Type	Key	Points	Standard	Cluster	Secondary Standard(s)	Multiple Choice Questions:		Constructed Response Questions:	
							Percentage of Students Who Answered Correctly (P-Value)	Average Points Earned	P-Value (Average Points Earned ÷ Total Possible Points)	
27	Multiple Choice	A	1	CCSS.Math.Content.3.OA.A.1	Operations and Algebraic Thinking		0.64			
31	Multiple Choice	D	1	CCSS.Math.Content.3.MD.C.6	Measurement and Data	CCSS.Math.Content.3.MD.C.5b	0.89			
32	Multiple Choice	B	1	CCSS.Math.Content.3.NBT.A.1	Number and Operations in Base Ten		0.67			
33	Multiple Choice	A	1	CCSS.Math.Content.3.MD.A.2	Measurement and Data		0.60			
34	Multiple Choice	A	1	CCSS.Math.Content.3.G.A.2	Geometry		0.89			
38	Multiple Choice	A	1	CCSS.Math.Content.3.MD.C.7a	Measurement and Data	CCSS.Math.Content.3.MD.C.7b	0.59			
39	Multiple Choice	D	1	CCSS.Math.Content.3.OA.D.9	Operations and Algebraic Thinking		0.41			
40	Multiple Choice	C	1	CCSS.Math.Content.3.OA.A.3	Operations and Algebraic Thinking		0.81			
41	Multiple Choice	C	1	CCSS.Math.Content.3.NF.A.1	Number and Operations—Fractions		0.58			
42	Multiple Choice	A	1	CCSS.Math.Content.3.OA.D.8	Operations and Algebraic Thinking		0.59			
<b>Book 3</b>										
45	Constructed Response		2	CCSS.Math.Content.3.NF.A.2	Number and Operations—Fractions			0.86	0.43	
46	Constructed Response		2	CCSS.Math.Content.3.OA.B.5	Operations and Algebraic Thinking	CCSS.Math.Content.3.OA.A.3		1.27	0.63	
47	Constructed Response		2	CCSS.Math.Content.3.MD.B.3	Measurement and Data	CCSS.Math.Content.3.NF.A.1		1.37	0.69	
48	Constructed Response		2	CCSS.Math.Content.3.OA.A.2	Operations and Algebraic Thinking	CCSS.Math.Content.3.OA.A.3		0.49	0.24	
49	Constructed Response		2	CCSS.Math.Content.3.MD.C.7c	Measurement and Data	CCSS.Math.Content.3.MD.C.7b		1.10	0.55	
50	Constructed Response		3	CCSS.Math.Content.3.OA.A.3	Operations and Algebraic Thinking	CCSS.Math.Content.3.OA.D.8		1.12	0.37	
51	Constructed Response		3	CCSS.Math.Content.3.NF.A.3b	Number and Operations—Fractions	CCSS.Math.Content.3.NF.A.3d, CCSS.Math.Content.3.NF.A.3a		1.59	0.53	
52	Constructed Response		3	CCSS.Math.Content.3.OA.D.8	Operations and Algebraic Thinking	CCSS.Math.Content.3.NBT.A.3		1.01	0.34	

\*This item map is intended to identify the primary analytic skills necessary to successfully answer each question. However, some questions measure proficiencies described in multiple standards, including a balanced combination of procedural and conceptual understanding.

## 2-Point Holistic Rubric

<b>2 Point</b>	A two-point response includes the correct solution to the question and demonstrates a thorough understanding of the mathematical concepts and/or procedures in the task.  This response <ul style="list-style-type: none"><li>• indicates that the student has completed the task correctly, using mathematically sound procedures</li><li>• contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures</li><li>• may contain inconsequential errors that do not detract from the correct solution and the demonstration of a thorough understanding</li></ul>
<b>1 Point</b>	A one-point response demonstrates only a partial understanding of the mathematical concepts and/or procedures in the task.  This response <ul style="list-style-type: none"><li>• correctly addresses only some elements of the task</li><li>• may contain an incorrect solution but applies a mathematically appropriate process</li><li>• may contain the correct solution but required work is incomplete</li></ul>
<b>0 Point*</b>	A zero-point response is incorrect, irrelevant, incoherent, or contains a correct solution obtained using an obviously incorrect procedure. Although some elements may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

\*Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted).

### **3-Point Holistic Rubric**

Score Points:

<b>3 Point</b>	A three-point response includes the correct solution(s) to the question and demonstrates a thorough understanding of the mathematical concepts and/or procedures in the task.  This response <ul style="list-style-type: none"><li>• indicates that the student has completed the task correctly, using mathematically sound procedures</li><li>• contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures</li><li>• may contain inconsequential errors that do not detract from the correct solution(s) and the demonstration of a thorough understanding</li></ul>
<b>2 Point</b>	A two-point response demonstrates a partial understanding of the mathematical concepts and/or procedures in the task.  This response <ul style="list-style-type: none"><li>• appropriately addresses most, but not all aspects of the task using mathematically sound procedures</li><li>• may contain an incorrect solution but provides sound procedures, reasoning, and/or explanations</li><li>• may reflect some minor misunderstanding of the underlying mathematical concepts and/or procedures</li></ul>
<b>1 Point</b>	A one-point response demonstrates only a limited understanding of the mathematical concepts and/or procedures in the task.  This response <ul style="list-style-type: none"><li>• may address some elements of the task correctly but reaches an inadequate solution and/or provides reasoning that is faulty or incomplete</li><li>• exhibits multiple flaws related to misunderstanding of important aspects of the task, misuse of mathematical procedures, or faulty mathematical reasoning</li><li>• reflects a lack of essential understanding of the underlying mathematical concepts</li><li>• may contain the correct solution(s) but required work is limited</li></ul>
<b>0 Point*</b>	A zero-point response is incorrect, irrelevant, incoherent, or contains a correct solution obtained using an obviously incorrect procedure. Although some elements may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

\*Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted).

## **2016 2-and 3-Point Mathematics Scoring Policies**

Below are the policies to be followed while scoring the mathematics tests for all grades:

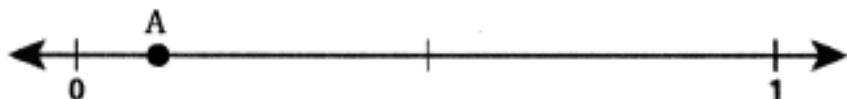
1. If a student does the work in other than a designated “Show your work” area, that work should still be scored. (Additional paper is an allowable accommodation for a student with disabilities if indicated on the student’s Individual Education Program or Section 504 Accommodation Plan.)
2. If the question requires students to show their work, and the student shows appropriate work and clearly identifies a correct answer but fails to write that answer in the answer blank, the student should still receive full credit.
3. In questions that provide ruled lines for students to write an explanation of their work, mathematical work shown elsewhere on the page should be considered and scored.
4. If the student provides one legible response (and one response only), teachers should score the response, even if it has been crossed out.
5. If the student has written more than one response but has crossed some out, teachers should score only the response that has **not** been crossed out.
6. Trial-and-error responses are **not** subject to Scoring Policy #5 above, since crossing out is part of the trial-and-error process.
7. If a response shows repeated occurrences of the same conceptual error within a question, the student should **not** be penalized more than once.
8. In questions that require students to provide bar graphs,
  - in Grades 3 and 4 only, touching bars are acceptable
  - in Grades 3 and 4 only, space between bars does **not** need to be uniform
  - in all grades, widths of the bars must be consistent
  - in all grades, bars must be aligned with their labels
  - in all grades, scales must begin at 0, but the 0 does **not** need to be written
9. In questions requiring number sentences, the number sentences must be written horizontally.
10. In pictographs, the student is permitted to use a symbol other than the one in the key, provided that the symbol is used consistently in the pictograph; the student does not need to change the symbol in the key. The student may **not**, however, use multiple symbols within the chart, nor may the student change the value of the symbol in the key.
11. If students are not directed to show work, any work shown will not be scored. This applies to items that do not ask for any work and items that ask for work for one part and do not ask for work in another part.
12. Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted). This is not to be confused with a score of zero wherein the student does respond to part or all of the question but that work results in a score of zero.

## EXEMPLARY RESPONSE

45

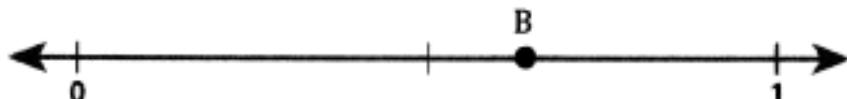
Haley cut pieces of ribbon to make bookmarks. Each bookmark was  $\frac{1}{8}$  foot long.

Draw a point at  $\frac{1}{8}$  on the number line below and label the point A.



Haley placed 5 of the bookmarks end to end.

Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.



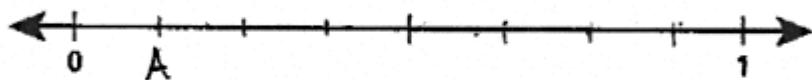
## GUIDE PAPER 1

Additional

45

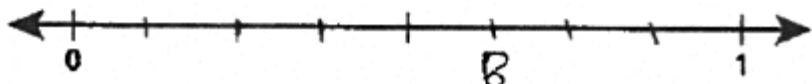
Haley cut pieces of ribbon to make bookmarks. Each bookmark was  $\frac{1}{8}$  foot long.

Draw a point at  $\frac{1}{8}$  on the number line below and label the point A.



Haley placed 5 of the bookmarks end to end.

Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.



### Score Point 2 (out of 2 points)

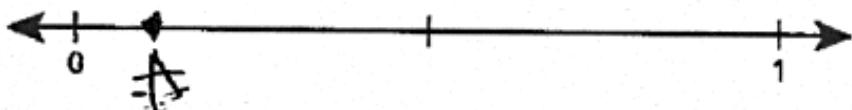
This response demonstrates a thorough understanding of the mathematical concepts in the task. The section of the number line is correctly divided into 8 parts. Point A is correctly placed at the  $\frac{1}{8}$  mark. Point B is placed correctly at  $\frac{5}{8}$  on the number line.

## GUIDE PAPER 2

45

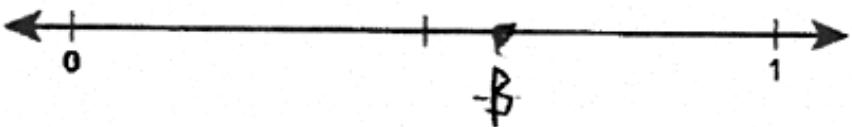
Haley cut pieces of ribbon to make bookmarks. Each bookmark was  $\frac{1}{8}$  foot long.

Draw a point at  $\frac{1}{8}$  on the number line below and label the point A.



Haley placed 5 of the bookmarks end to end.

Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.



**Score Point 2 (out of 2 points)**

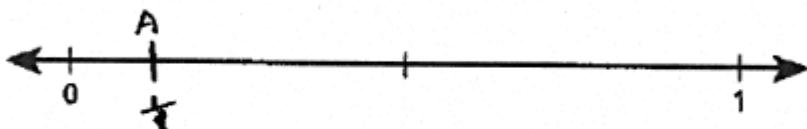
This response demonstrates a thorough understanding of the mathematical concepts in the task. Point A is correctly placed at the  $\frac{1}{8}$  mark. Point B is placed correctly at  $\frac{5}{8}$  on the number line.

## GUIDE PAPER 3

45

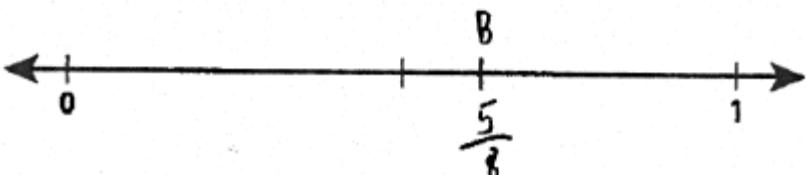
Haley cut pieces of ribbon to make bookmarks. Each bookmark was  $\frac{1}{8}$  foot long.

Draw a point at  $\frac{1}{8}$  on the number line below and label the point A.



Haley placed 5 of the bookmarks end to end.

Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.



**Score Point 2 (out of 2 points)**

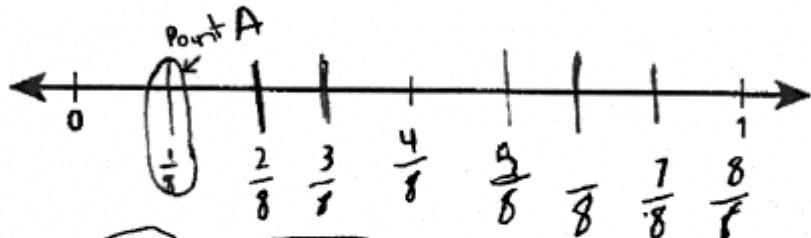
This response demonstrates a thorough understanding of the mathematical concepts in the task. Point A is correctly drawn at the  $\frac{1}{8}$  mark. Point B is correct at  $\frac{5}{8}$  on the number line.

## GUIDE PAPER 4

45

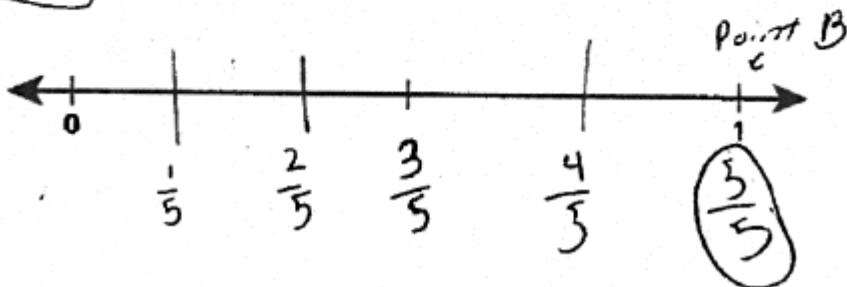
Haley cut pieces of ribbon to make bookmarks. Each bookmark was  $\frac{1}{8}$  foot long.

Draw a point at  $\frac{1}{8}$  on the number line below and label the point A.



Haley placed 5 of the bookmarks end-to-end.

Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.



**Score Point 1 (out of 2 points)**

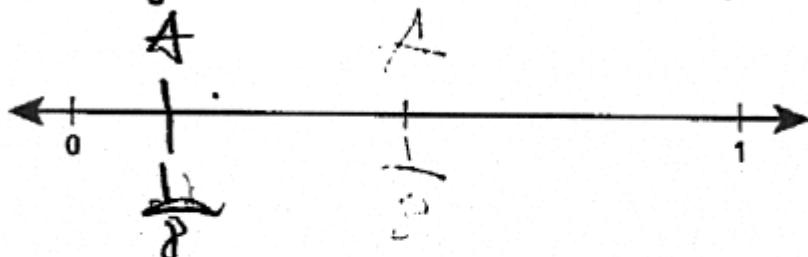
This response demonstrates a partial understanding of the mathematical concepts in the task. The segment of the first number line is correctly divided into 8 sections. Point A is correctly drawn at the  $\frac{1}{8}$  mark. Point B is incorrect at  $\frac{5}{5}$ .

## GUIDE PAPER 5

45

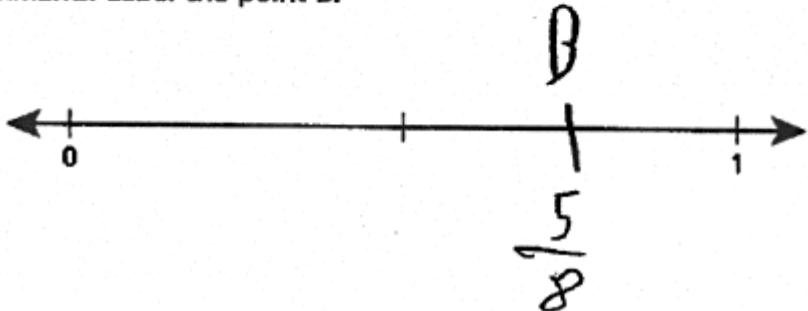
Haley cut pieces of ribbon to make bookmarks. Each bookmark was  $\frac{1}{8}$  foot long.

Draw a point at  $\frac{1}{8}$  on the number line below and label the point A.



Haley placed 5 of the bookmarks end to end.

Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.



**Score Point 1 (out of 2 points)**

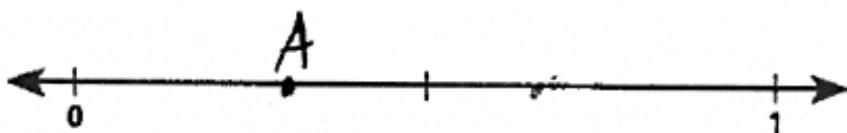
This response demonstrates a partial understanding of the mathematical concepts in the task. Point A is correctly drawn at the  $\frac{1}{8}$  mark on the number line. Point B is incorrect. Although point B is labeled as  $\frac{5}{8}$ , it is placed at the  $\frac{3}{4}$  mark.

## GUIDE PAPER 6

45

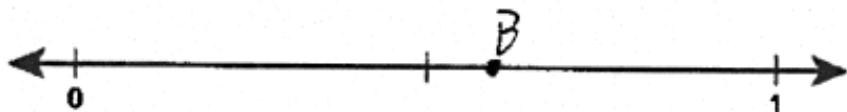
Haley cut pieces of ribbon to make bookmarks. Each bookmark was  $\frac{1}{8}$  foot long.

Draw a point at  $\frac{1}{8}$  on the number line below and label the point A.



Haley placed 5 of the bookmarks end to end.

Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.



### Score Point 1 (out of 2 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. Point A is incorrect. It is drawn at about the  $\frac{1}{3}$  mark. Point B is correct at  $\frac{5}{8}$  on the number line.

## GUIDE PAPER 7

45

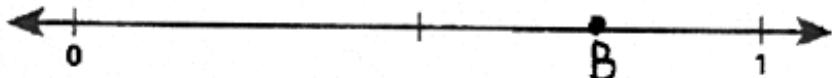
Haley cut pieces of ribbon to make bookmarks. Each bookmark was  $\frac{1}{8}$  foot long.

Draw a point at  $\frac{1}{8}$  on the number line below and label the point A.



Haley placed 5 of the bookmarks end to end.

Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.



**Score Point 0 (out of 2 points)**

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Point A is incorrect; it is at the  $\frac{1}{2}$  mark. Point B is incorrect at the  $\frac{3}{4}$  mark.

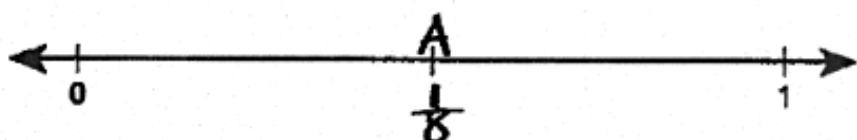
## GUIDE PAPER 8

Additional

45

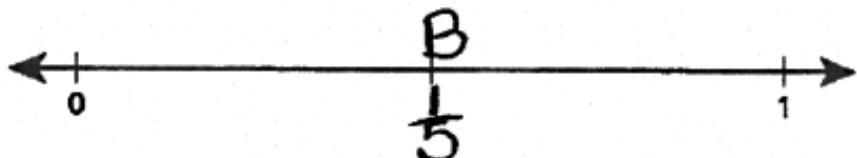
Haley cut pieces of ribbon to make bookmarks. Each bookmark was  $\frac{1}{8}$  foot long.

Draw a point at  $\frac{1}{8}$  on the number line below and label the point A.



Haley placed 5 of the bookmarks end to end.

Draw a point on the number line below to represent the total length of the 5 bookmarks. Label the point B.



### Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Point A is incorrect at the  $\frac{1}{2}$  mark. Point B is incorrect at the  $\frac{1}{2}$  mark.

## EXEMPLARY RESPONSE

46

Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

Page 1



Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

$$\underline{7} \times \underline{4} = \underline{28}$$

$$\underline{4} \times \underline{7} = \underline{28}$$

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

Page 2



Page 3



Complete the expression below to represent the total number of stickers on pages 2 and 3.

$$\underline{4} \times (\underline{4} + \underline{3})$$

Or other valid response.

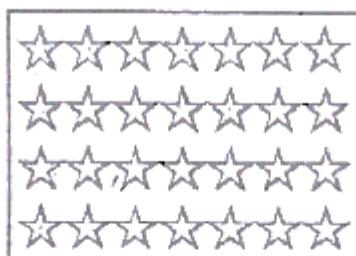
## GUIDE PAPER 1

Additional

46

Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

Page 1



Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

$$\underline{4} \times \underline{7} = \underline{28}$$

$$\underline{7} \times \underline{4} = \underline{28}$$

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

Page 2



Page 3



Complete the expression below to represent the total number of stickers on pages 2 and 3.

$$\underline{4} \times (\underline{4} + \underline{3})$$

### Score Point 2 (out of 2 points)

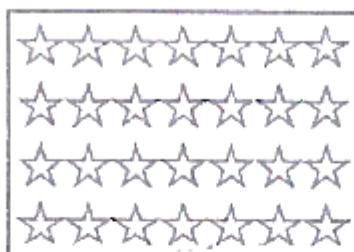
This response demonstrates a thorough understanding of the mathematical concepts in the task. Two correct multiplication facts are given to represent 28 stickers. The response provides a correct expression to represent the stickers on pages 2 and 3.

## GUIDE PAPER 2

46

Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

Page 1



Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

$$\begin{array}{r} 1 \times 4 = 28 \\ 4 \times 7 = 28 \end{array}$$

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

Page 2



Page 3



Complete the expression below to represent the total number of stickers on pages 2 and 3.

$$4 \times (3 + 4)$$

### Score Point 2 (out of 2 points)

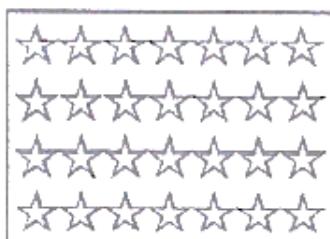
This response demonstrates a thorough understanding of the mathematical concepts in the task. Two correct multiplication facts are given to represent 28 stickers. The response provides a correct expression to represent the stickers on pages 2 and 3.

## GUIDE PAPER 3

46

Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

Page 1



Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

$$\underline{4} \times \underline{7} = \underline{28}$$
$$\underline{7} \times \underline{4} = \underline{28}$$

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

Page 2



Page 3



Complete the expression below to represent the total number of stickers on pages 2 and 3.

$$\underline{1} \times (\underline{16} + \underline{12})$$

### Score Point 2 (out of 2 points)

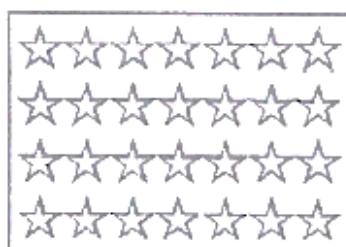
This response demonstrates a thorough understanding of the mathematical concepts in the task. Two correct multiplication facts are given to represent 28 stickers. The response provides a correct expression to represent the stickers on pages 2 and 3. The response counts the number of stickers on each page, then adds them and finally multiplies by 1.

## GUIDE PAPER 4

46

Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

Page 1



Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

$$\begin{array}{r} 4 \\ \times 7 \\ \hline 28 \end{array}$$
$$\begin{array}{r} 7 \\ \times 4 \\ \hline 28 \end{array}$$

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

Page 2



Page 3



Complete the expression below to represent the total number of stickers on pages 2 and 3.

$$7 \times (4 + 3)$$

### Score Point 1 (out of 2 points)

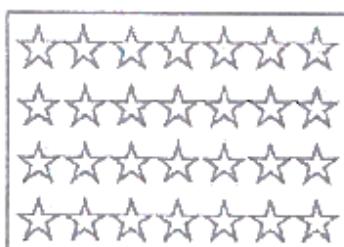
This response demonstrates a partial understanding of the mathematical concepts in the task. Two correct multiplication facts are given to represent 28 stickers. The expression representing the number of stickers on pages 2 and 3 is incorrect. A mistake is made when multiplying  $(4 + 3)$  by 7 rather than 4.

## GUIDE PAPER 5

46

Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

Page 1



Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

$$\begin{array}{r} 4 \\ \times 7 \\ \hline 28 \end{array}$$

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

Page 2



Page 3



Complete the expression below to represent the total number of stickers on pages 2 and 3.

$$4 \times (4 + 3)$$

### Score Point 1 (out of 2 points)

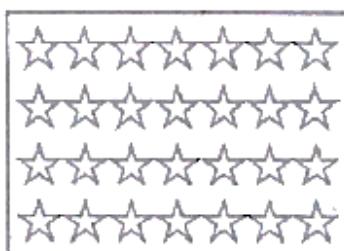
This response demonstrates a partial understanding of the mathematical concepts in the task. Two incorrect multiplication facts are given. The response provides an incorrect answer for the number of stickers. The expression representing the number of stickers on pages 2 and 3 is correct.

## GUIDE PAPER 6

46

Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

Page 1



Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

$$\begin{array}{r} 4 \\ \times 7 \\ \hline 28 \end{array}$$
$$\begin{array}{r} 7 \\ \times 4 \\ \hline 28 \end{array}$$

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

Page 2



Page 3



Complete the expression below to represent the total number of stickers on pages 2 and 3.

$$16 \times (9 + 3)$$

### Score Point 1 (out of 2 points)

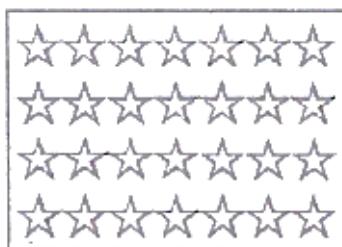
This response demonstrates a partial understanding of the mathematical concepts in the task. Two correct multiplication facts are given to represent 28 stickers. The expression representing the number of stickers on pages 2 and 3 is incorrect (values 16 and 9 are incorrect).

## GUIDE PAPER 7

46

Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

Page 1



Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

$$\underline{7} \times \underline{4} = \underline{28}$$

$$\underline{14} \times \underline{2} = \underline{28}$$

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

Page 2



Page 3



Complete the expression below to represent the total number of stickers on pages 2 and 3.

$$\underline{5} \times (\underline{4} + \underline{12})$$

### Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. One correct multiplication fact is given to represent 28 stickers. An incorrect expression is provided. This response does not have sufficient work to show even a limited understanding of the material.

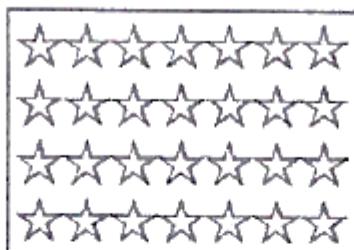
## GUIDE PAPER 8

Additional

46

Katia received a sticker each time she picked up her toys. She placed some of the stickers on page 1 of her scrapbook, as shown below.

Page 1



28

Write numbers in the blanks below to show two multiplication facts represented by the array of stickers on page 1 of her scrapbook.

$$\underline{4} \times \underline{7} = \underline{28}$$

$$\underline{4} \times \underline{2} = \underline{8}$$

Katia placed the rest of the stickers on pages 2 and 3 of her scrapbook, as shown below.

Page 2



Page 3



Complete the expression below to represent the total number of stickers on pages 2 and 3.

$$\underline{16} \times (\underline{2} + \underline{3})$$

**Score Point 0 (out of 2 points)**

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Two incorrect multiplication facts are given. The expression representing the number of stickers on pages 2 and 3 is incorrect.

## EXEMPLARY RESPONSE

47

Several students voted on their favorite sports **activities**.

- Eight students voted for basketball.
- Three students voted for volleyball.
- Seven students voted for baseball.
- Four students voted for kickball.

Complete the picture graph below to show the data.

FAVORITE SPORT ACTIVITY

Activity	Number of Students
Basketball	○ ○ ○ ○
Volleyball	○ ○
Baseball	○ ○ ○ ○
Kickball	○ ○

KEY
○ = 2 students

## GUIDE PAPER 1

Additional

47

Several students voted on their favorite sports activities.

- Eight students voted for basketball.
- Three students voted for volleyball.
- Seven students voted for baseball.
- Four students voted for kickball.

Complete the picture graph below to show the data.

FAVORITE SPORT ACTIVITY

Activity	Number of Students
Basketball	OOOO
Volleyball	OD
Baseball	OOOD
Kickball	OO

KEY
= 2 students

### Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The data is correctly represented on the picture graph with circles and half-circles.

## GUIDE PAPER 2

47

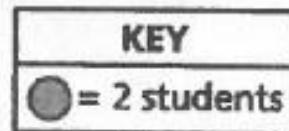
Several students voted on their favorite sports activities.

- Eight students voted for basketball.
- Three students voted for volleyball.
- Seven students voted for baseball.
- Four students voted for kickball.

Complete the picture graph below to show the data.

FAVORITE SPORT ACTIVITY

Activity	Number of Students
Basketball	
Volleyball	
Baseball	
Kickball	



### Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The data is correctly represented on the picture graph with circles and half-circles.

## GUIDE PAPER 3

47

Several students voted on their favorite sports activities.

- Eight students voted for basketball.
- Three students voted for volleyball.
- Seven students voted for baseball.
- Four students voted for kickball.

Complete the picture graph below to show the data.

FAVORITE SPORT ACTIVITY

Activity	Number of Students
Basketball	○○○○
Volleyball	○C
Baseball	○○○C
Kickball	○○

KEY
● = 2 students

### Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The data is correctly represented on the picture graph. Using C as an unshaded half-circle to represent 1 student is acceptable.

## GUIDE PAPER 4

47

Several students voted on their favorite sports activities.

- Eight students voted for basketball.
- Three students voted for volleyball.
- Seven students voted for baseball.
- Four students voted for kickball.

Complete the picture graph below to show the data.

FAVORITE SPORT ACTIVITY

Activity	Number of Students
Basketball	○○○○
Volleyball	○
Baseball	○○○○
Kickball	○○

KEY
○ = 2 students

### Score Point 1 (out of 2 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The work is partially correct. The response provides an incorrect picture for the students that voted for volleyball: one circle is missing. The data for other activities is represented correctly.

## GUIDE PAPER 5

47

Several students voted on their favorite sports activities.

- Eight students voted for basketball.
- Three students voted for volleyball.
- Seven students voted for baseball.
- Four students voted for kickball.

Complete the picture graph below to show the data.

FAVORITE SPORT ACTIVITY

Activity	Number of Students
Basketball	
Volleyball	
Baseball	
Kickball	

KEY

 = 2 students

### Score Point 1 (out of 2 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The work is partially correct. The response provides incorrect pictures for students that voted for volleyball and kickball. There is one extra circle for volleyball and one missing circle for kickball. The data for other activities is represented correctly.

## GUIDE PAPER 6

47

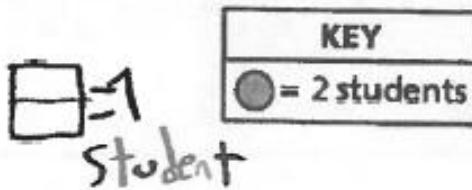
Several students voted on their favorite sports activities.

- Eight students voted for basketball.
- Three students voted for volleyball.
- Seven students voted for baseball.
- Four students voted for kickball.

Complete the picture graph below to show the data.

FAVORITE SPORT ACTIVITY

Activity	Number of Students
Basketball	5
Volleyball	3
Baseball	7
Kickball	4



### Score Point 1 (out of 2 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The work is partially correct. The response incorrectly uses a different key (a square) to represent 1 student for volleyball and baseball activities. The data for other activities is represented correctly.

## GUIDE PAPER 7

47

Several students voted on their favorite sports activities.

- 8 • Eight students voted for basketball.
- 3 • Three students voted for volleyball.
- 7 • Seven students voted for baseball.
- 4 • Four students voted for kickball.

Complete the picture graph below to show the data.

FAVORITE SPORT ACTIVITY

Activity	Number of Students
Basketball	00000000
Volleyball	000
Baseball	0000000
Kickball	1000

KEY
● = 2 students

### Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The response misunderstands the question and uses 1 circle to represent 1 student, resulting in incorrect work.

## GUIDE PAPER 8

Additional

47

Several students voted on their favorite sports activities.

- Eight students voted for basketball.
- Three students voted for volleyball.
- Seven students voted for baseball.
- Four students voted for kickball.

Complete the picture graph below to show the data.

FAVORITE SPORT ACTIVITY

Activity	Number of Students
Basketball	4 student
Volleyball	1 student
Baseball	6 1/2 students
Kickball	2 students

KEY
● = 2 students

### Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The work does not use the key to show the data.

## EXEMPLARY RESPONSE

48

Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

**Show your work.**

$$18 \div 3 = 6$$

$$24 \div 6 = 4$$

$$3 + 4 = 7$$

Or other valid response.

**Answer** 7 pieces

## GUIDE PAPER 1

Additional

48

Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

**Show your work.**

$$18 \div 3 = 6$$

$$24 \div 6 = 4$$

**Answer**

7

pieces

### Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The response follows a correct procedure to determine the length of one piece of green paper and the number of 6 inches long red pieces. The total number of red and green pieces is calculated correctly.

## GUIDE PAPER 2

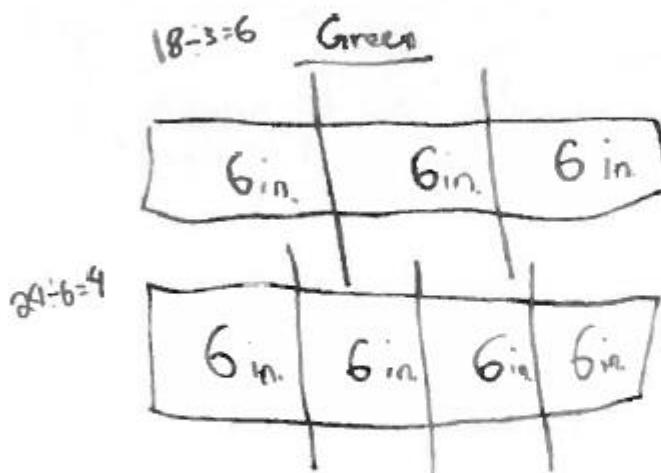
48

Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

Show your work.



$$\begin{array}{r} 3 \text{ pieces} \\ + 4 \text{ pieces} \\ \hline 7 \text{ pieces} \end{array}$$

Answer

7

pieces

### Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The response follows a correct procedure to determine the length of one piece of green paper and the number of 6 inches long red pieces. The total number of red and green pieces is calculated correctly.

## GUIDE PAPER 3

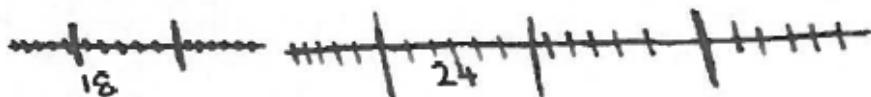
48

Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

Show your work.



$$3 \times 6 = 18 \quad 4 \times 6 = 24$$

Answer

7

pieces

### Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The response follows a correct procedure to determine the total number of red and green pieces.

## GUIDE PAPER 4

48

Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

*Show your work.*

$$18 \div 3 = 6$$

$$24 \div 4 = 6$$

$$\begin{array}{r} 6 \\ + 6 \\ \hline 12 \end{array}$$

*Answer*

12 pieces.

### Score Point 1 (out of 2 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The response follows a correct procedure to determine the length of one piece of green paper. An error is made when determining the number of red pieces (24 is divided by 4 rather than by 6). The work for determining the total number of red and green pieces is incorrect: the length of green pieces is added to the number of red pieces. The response addresses some elements of the task correctly.

## GUIDE PAPER 5

48

Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

*Show your work.*

$$\begin{array}{r} 18 \div 3 = 6 \\ 24 \div 3 = 8 \end{array}$$

*Answer*

14

*pieces*

### Score Point 1 (out of 2 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The response follows a correct procedure to determine the length of one piece of green paper. A mistake is made when determining the number of red pieces (24 is divided by 3 rather than by 6). Another mistake occurs when determining the total number of red and green pieces: the length of a green piece is added to the number of red pieces. The response addresses some elements of the task correctly.

## GUIDE PAPER 6

48

Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

Show your work.

$$\begin{array}{r} \div 18 \\ \div 3 \\ \hline 6 \end{array} \qquad \begin{array}{r} \div 24 \\ \div 6 \\ \hline 4 \end{array}$$

$$6+4=10$$

Answer

10

pieces

### Score Point 1 (out of 2 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The response follows a correct procedure to determine the length of one piece of green paper and the number of red pieces. A mistake is made when calculating the total number of pieces: the length of a green piece is added to the number of red pieces, resulting in an incorrect answer.

## GUIDE PAPER 7

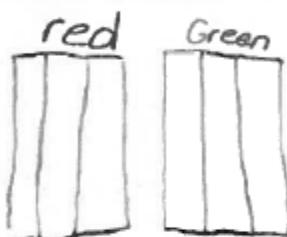
48

Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

Show your work.



$$3+3=6 \text{ inches}$$
$$3\times 2=6 \text{ inches}$$

Answer      6      pieces

### Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The response provides two incorrect procedures to determine the length of a piece of paper. There is no work for determining the number of red pieces.

## GUIDE PAPER 8

Additional

48

Nadia had a strip of green paper that was 18 inches long. She cut the green paper into three pieces with equal lengths.

She also had a strip of red paper that was 24 inches long. She cut the red paper into pieces that were the same length as each cut piece of green paper.

When she was finished cutting, how many pieces of red and green paper did Nadia have in total?

Show your work.

A handwritten mathematical equation. It shows two numbers, 24 and 18, written vertically. A plus sign (+) is placed between them. A diagonal line is drawn through the numbers and the plus sign. To the right of the equation, the word "pieces" is written diagonally above the line.

Answer 42 pieces

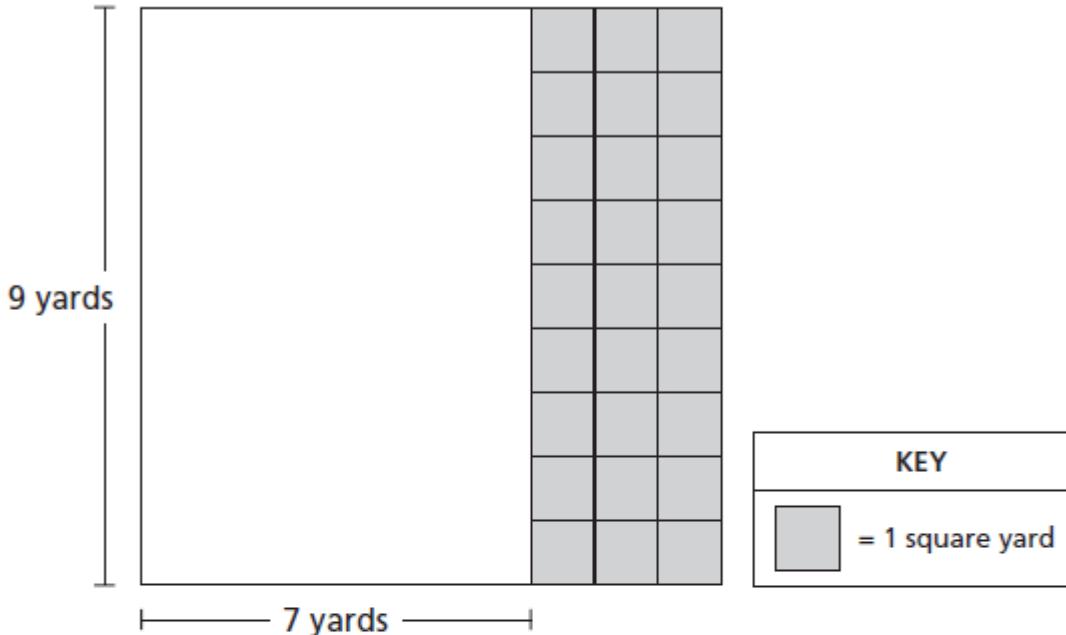
### Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The work for determining the total number of pieces is incorrect. The response is adding the lengths of the two strips rather than the quantities of pieces by color.

## EXEMPLARY RESPONSE

49

Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.



What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

*Show your work.*

$$\begin{array}{ll} \text{Area} = a(b + c) = ab + ac & \\ = 9(7 + 3) & \text{OR} \\ = 9 \times 10 & = (9 \times 7) + (9 \times 3) \\ = 90 & = 63 + 27 \\ & = 90 \end{array}$$

Or other valid response.

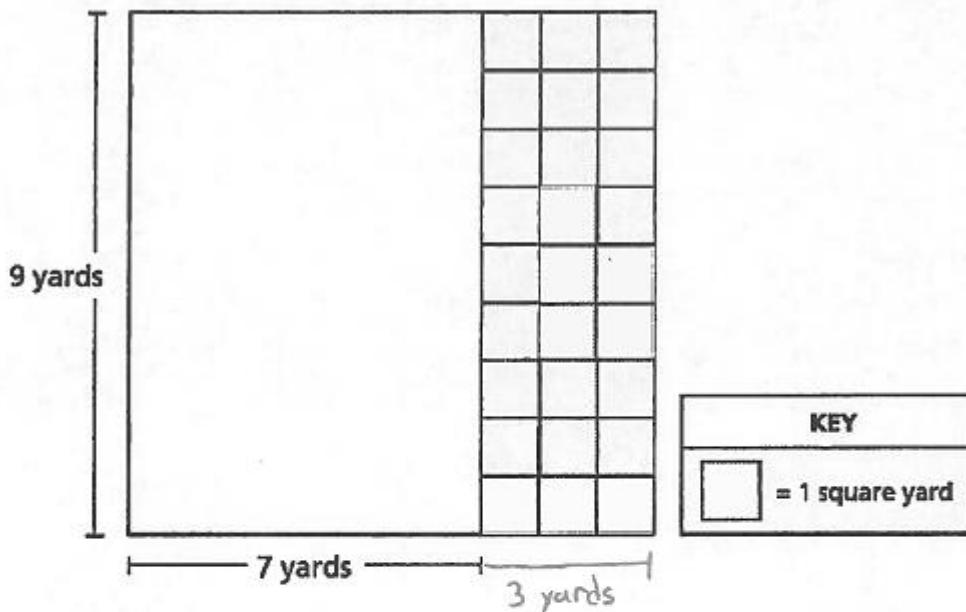
**Answer** 90 square yards

## GUIDE PAPER 1

Additional

49

Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.



What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

Show your work.

$$\begin{aligned} 9 \times 7 &= 63 \\ 9 \times 3 &= 27 \\ &\underline{\quad\quad\quad} \\ &= 90 \end{aligned}$$

Answer

90

square yards

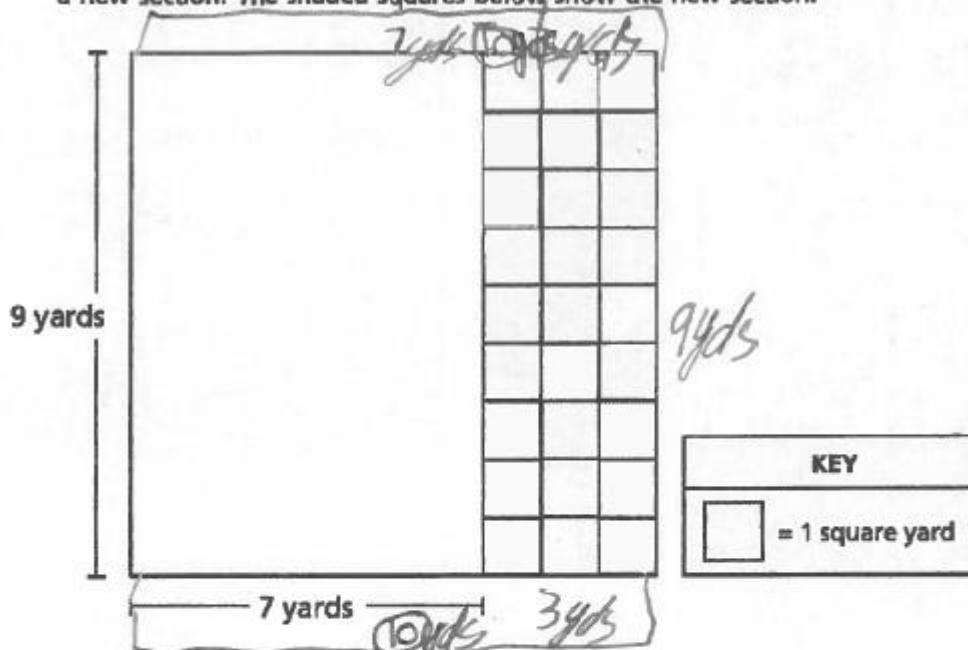
### Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The original area and the area of the new section are correctly calculated and added to determine the total area.

## GUIDE PAPER 2

49

Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.



What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

Show your work.

Answer *do*

$$\begin{aligned}A &= 9 \times 10 \\A &= 90 \text{ sq yds} \\A &= 10 \times 9 \\A &= 90 \text{ sq yds}\end{aligned}$$

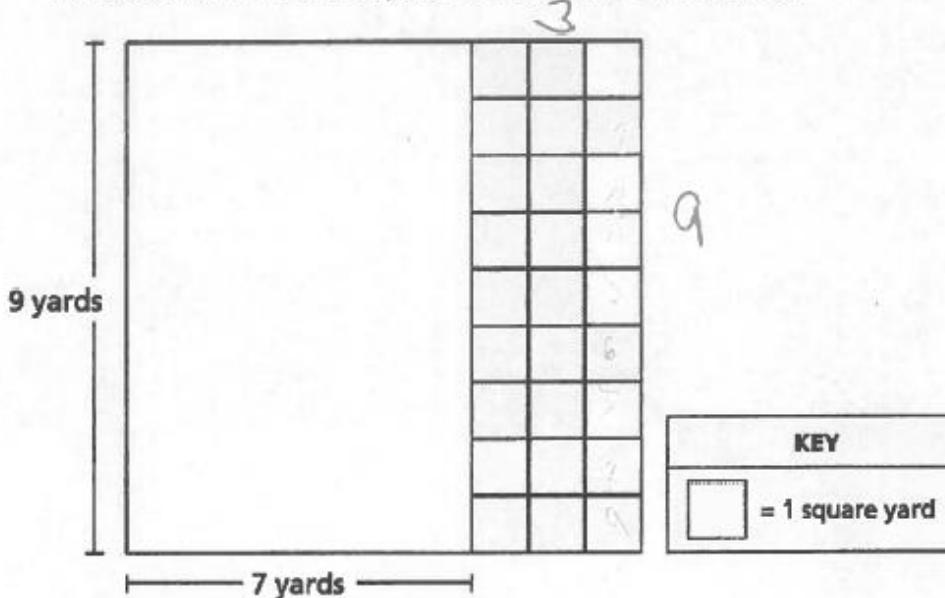
### Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The new width of the shop is correctly calculated and then multiplied to determine the total area.

## GUIDE PAPER 3

49

Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.



What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

Show your work.

$$9 \times 7 = 63 \quad 9 \times 3 = 27 \quad \begin{array}{r} 63 \\ + 27 \\ \hline 90 \end{array}$$

square yards

Answer

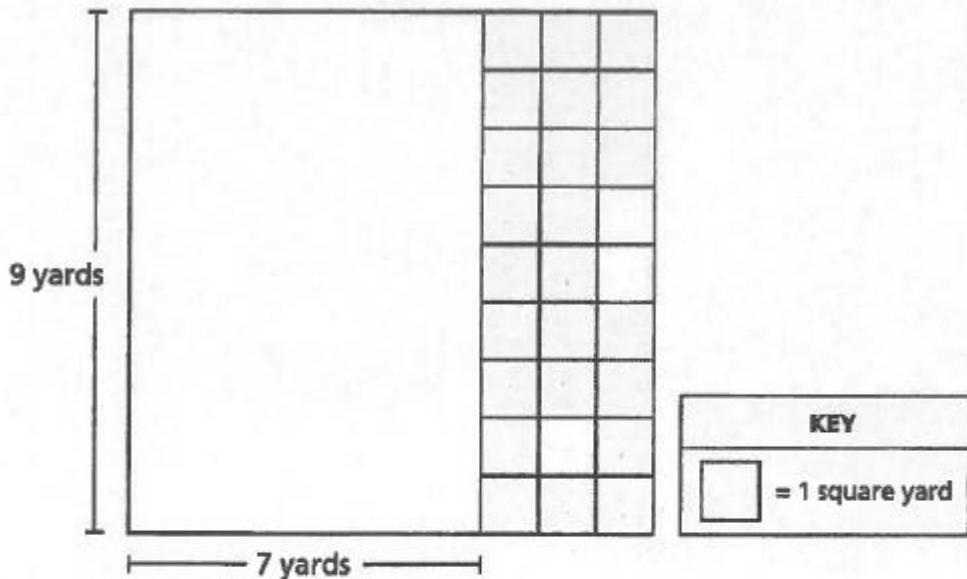
Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The original area and the area of the new section are correctly calculated and added to determine the total area. Although the answer is incorrectly transcribed from the work to the answer blank, this is considered an inconsequential error that does not detract from the correct solution.

## GUIDE PAPER 4

49

Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.



What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

Show your work.

$$\begin{array}{r} 9 \\ \times 7 \\ \hline 63 \end{array}$$

$$\begin{array}{r} 9 \\ + 3 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 63 \\ + 12 \\ \hline 75 \end{array}$$

Answer 75 square yards

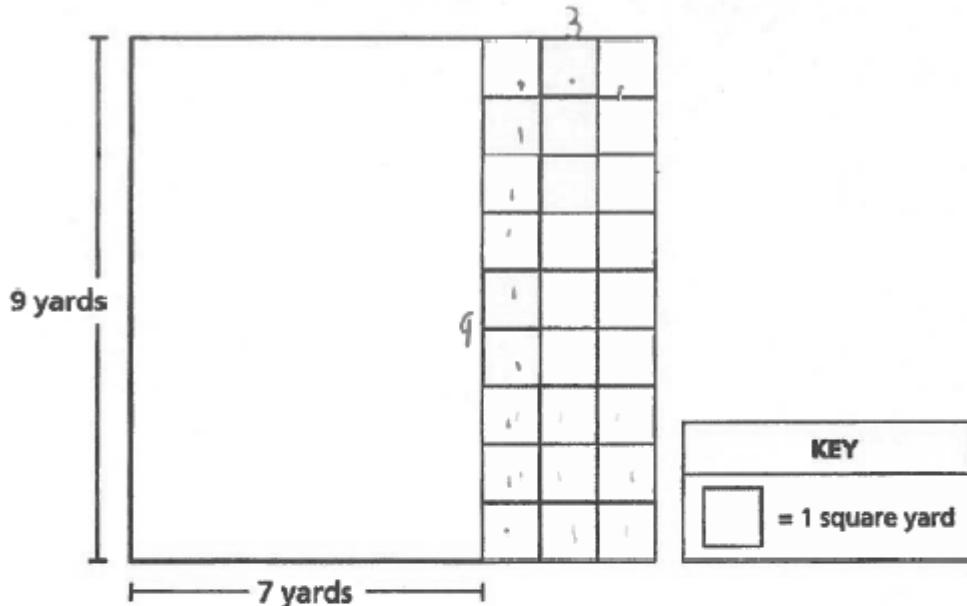
### Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts of the task. Although the original area is correctly calculated, the area of the new section is incorrectly found through addition rather than multiplication. The response correctly addresses only some elements of the task.

## GUIDE PAPER 5

49

Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.



What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

Show your work.

$$9 \times 3 = 27 \\ \text{yards} \quad \text{yards} \quad \text{yards}$$

Answer

27  
square yards

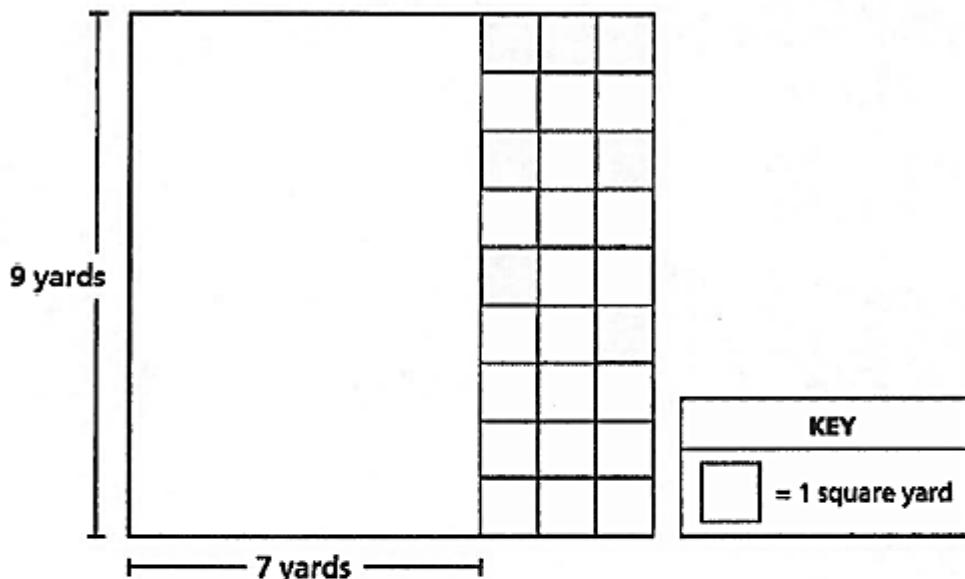
### Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts of the task. Although the area of the new section is correctly computed, no attempt is made to calculate and include the original area of the shop. The response correctly addresses only some elements of the task.

## GUIDE PAPER 6

49

Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.



What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

Show your work.

$$9 \times 3 = 27 \quad 9 \times 7 = 63$$

Answer **63** square yards

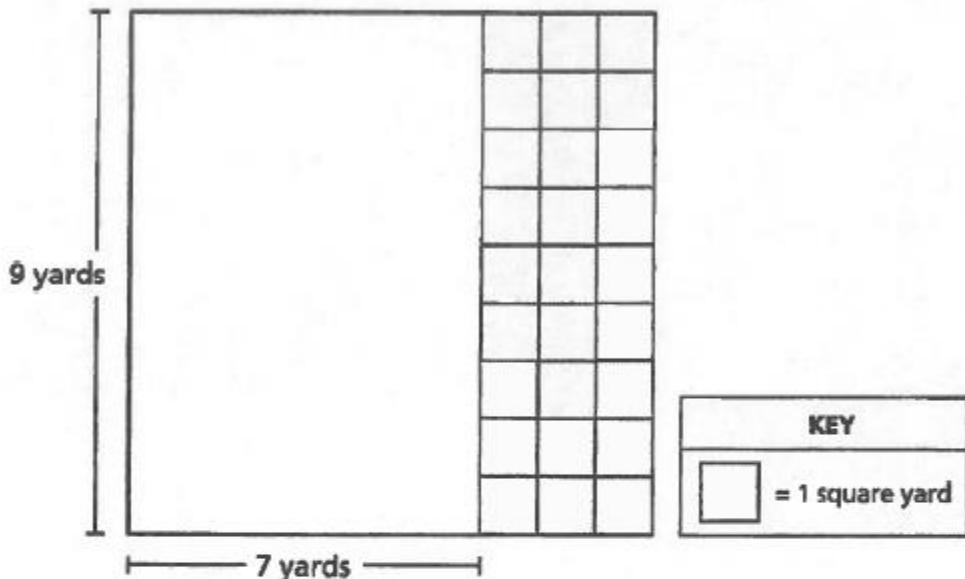
### Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts of the task. Although the original area and the area of the new section are correctly calculated, no attempt is made to add them to determine the total area. The response correctly addresses only some elements of the task.

## GUIDE PAPER 7

49

Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.



What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

Show your work.

$$9 \times 3 = 25$$

Answer 26 square yards

Score Point 0 (out of 2 points)

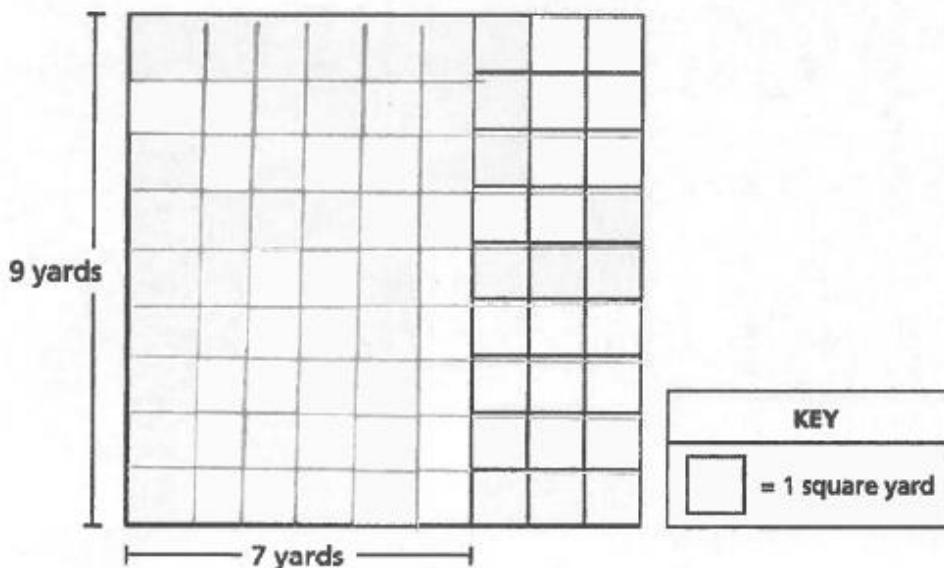
While an attempt is made to determine the area of the new section, a calculation error ( $9 \times 3 = 25$ ) results in an incorrect value. Additionally, no attempt is made to calculate and include the original area of the shop. Holistically, the response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task.

## GUIDE PAPER 8

Additional

49

Mr. Nuccio's sandwich shop was 9 yards long and 7 yards wide before he added a new section. The shaded squares below show the new section.



What is the total area, in square yards, of Mr. Nuccio's sandwich shop after the new section was added?

Show your work.

$$\begin{array}{r} \text{square yard} \\ 9 \times 7 = 53 \\ \hline \end{array}$$

Answer

53

square yards

### Score Point 0 (out of 2 points)

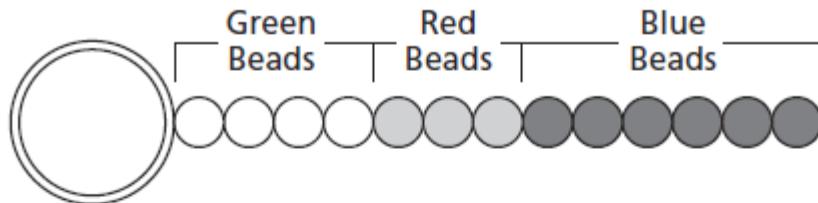
While an attempt is made to determine the original area through a visual representation of the multiplication, a calculation error ( $9 \times 7 = 53$ ) results in an incorrect value. Additionally, no attempt is made to calculate and include the area of the new section. Holistically, the response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task.

## EXEMPLARY RESPONSE

50

Sharon wants to make key chains with different-colored beads, as shown below.

KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

*Show your work.*

$$\text{chain} = 4 \text{ green} + 3 \text{ red} + 6 \text{ blue}$$

$$\text{green} = 20 \text{ beads} \div 4 \text{ beads per chain} \quad x = 5 \text{ chains}$$

$$\text{red} = 5 \times 3 = 15$$

$$\text{blue} = 5 \times 6 = 30$$

Or other valid response

**Answer**    15    red beads

              30    blue beads

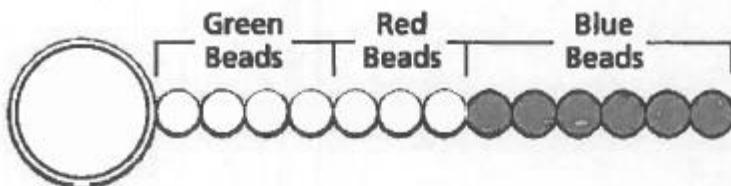
## GUIDE PAPER 1

Additional

50

Sharon wants to make key chains with different-colored beads, as shown below.

### KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

Show your work.

$$5 \times 3 = 15$$

chains      red      red  
              beads      beads  
                                in all

$$20 \div 4 = 5$$

green      green      chains  
beads      on each  
in all      chain

Answer

15      red beads

30      blue beads

$$5 \times 6 = 30$$

chains      blue      blue  
              beads      beads  
                                in all

### Score Point 3 (out of 3 points)

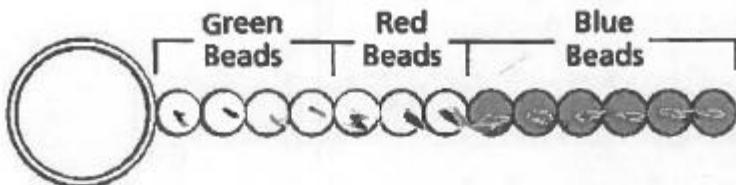
This response demonstrates a thorough understanding of the mathematical concepts in the task. The correct number of key chains to be made is calculated and correctly multiplied by the numbers of red and blue beads per chain.

## GUIDE PAPER 2

50

Sharon wants to make key chains with different-colored beads, as shown below.

### KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

Show your work.

$$6 \times 5 = 30 \quad 3 \times 5 = 15 \quad 4 \times 5 = 20$$

$\uparrow$   
blue beads       $\uparrow$   
red beads       $\uparrow$   
green beads

Answer

15 red beads

30 blue beads

### Score Point 3 (out of 3 points)

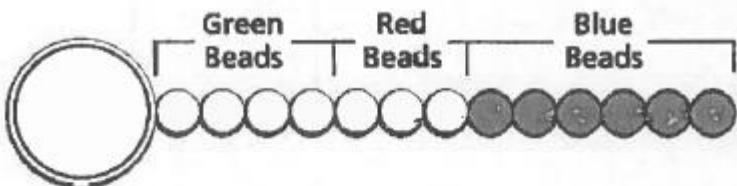
This response demonstrates a thorough understanding of the mathematical concepts in the task. The number of key chains to be made is correctly multiplied by the numbers of red and blue beads per chain. A multiplication by the number of green beads per chain sufficiently verifies the correct number of key chains to use 20 total green beads.

## GUIDE PAPER 3

50

Sharon wants to make key chains with different-colored beads, as shown below.

### KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

Show your work.

$$\begin{aligned} 5 \times 6 &= 30 \\ 5 \times 3 &= 15 \end{aligned}$$

Answer

15 red beads

30 blue beads

### Score Point 3 (out of 3 points)

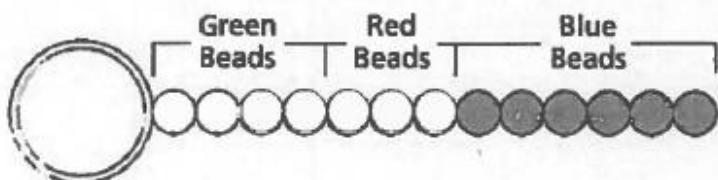
This response demonstrates a thorough understanding of the mathematical concepts in the task. The number of key chains to be made is correctly multiplied by the numbers of red and blue beads per chain. No work is shown to derive the value of 5 key chains; however, this step is acceptable to be performed mentally.

## GUIDE PAPER 4

50

Sharon wants to make key chains with different-colored beads, as shown below.

KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

Show your work.

$$\begin{array}{r} 4 \\ 4 \\ 4 \\ 4 \\ 4 \\ \times 4 \\ \hline 20 \end{array} \qquad \begin{array}{r} 3 \\ 3 \\ 3 \\ 3 \\ \hline 15 \end{array} \qquad \begin{array}{r} 6 \\ 6 \\ 6 \\ 6 \\ + 0 \\ \hline 30 \end{array}$$

Answer 30 red beads

15 blue beads

### Score Point 2 (out of 3 points)

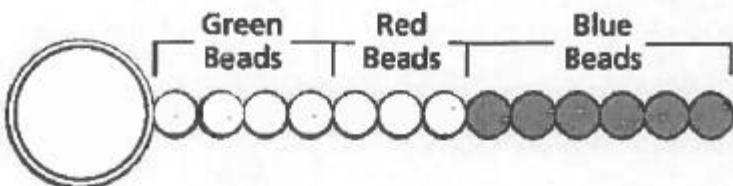
This response demonstrates a partial understanding of the mathematical concepts in the task. Repeated addition is used to correctly calculate the total number of each color of beads; however, the answers are transcribed onto the wrong answer blanks and the work does not label which column is for which color of bead. Although the response contains an incorrect solution, it uses a mathematically sound procedure.

## GUIDE PAPER 5

50

Sharon wants to make key chains with different-colored beads, as shown below.

**KEY CHAIN**



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

Show your work.

$$4, 8, 12, 16, 20)$$

**Answer** 15 red beads

30 blue beads

### Score Point 2 (out of 3 points)

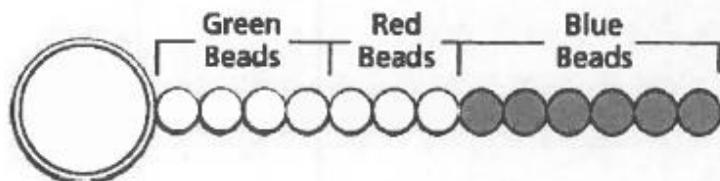
This response demonstrates a partial understanding of the mathematical concepts in the task. Cumulative addition of green beads shows the correct total number of key chains and the correct solutions are provided; however, no intermediate work is shown to link these steps. The response addresses most, but not all aspects of the task.

## GUIDE PAPER 6

50

Sharon wants to make key chains with different-colored beads, as shown below.

### KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?  $g=10 \text{ green bead}$

Show your work.

4, 6, 10, 16, 20

$$5 \times 6 = 30 \text{ red beads}$$

$$1 \times 3 = 15 \text{ blue beads}$$

$$20 \div 4 = 5$$

Answer 30 red beads

15 blue beads

### Score Point 2 (out of 3 points)

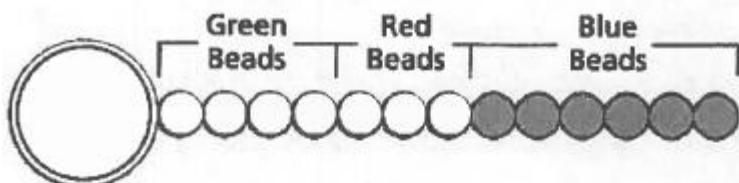
This response demonstrates a partial understanding of the mathematical concepts in the task. The number of key chains to be made is correctly multiplied by the number of red and blue beads per chain; however, the answers are transposed in both the work and the answer blanks. Although the response contains an incorrect solution, it uses a mathematically sound procedure.

## GUIDE PAPER 7

50

Sharon wants to make key chains with different-colored beads, as shown below.

**KEY CHAIN**



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

*Show your work.*

5

**Answer** 15 red beads

30 blue beads

### Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts in the task. Although the response contains correct solutions, the required work is limited. Presumably the number 5 is meant to represent the number of key chains to be made but no other work exists to provide context to assess the response.

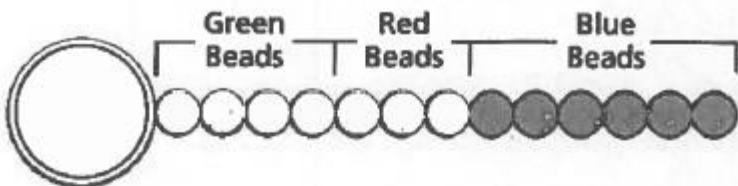
## GUIDE PAPER 8

Additional

50

Sharon wants to make key chains with different-colored beads, as shown below.

KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

Show your work.

20 Green beads

15 Red beads

30 Blue beads

Answer 15 red beads

30 blue beads

### Score Point 1 (out of 3 points)

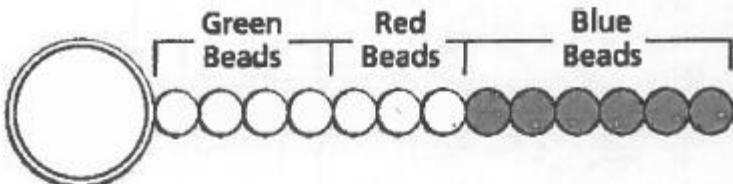
This response demonstrates only a limited understanding of the mathematical concepts in the task. Although the response contains correct solutions, the required work is limited. The work only repeats the final solutions and the value of 20 green beads from the prompt.

## GUIDE PAPER 9

50

Sharon wants to make key chains with different-colored beads, as shown below.

### KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

Show your work.

20 green      15 red      30 blue

Answer 15 red beads

30 blue beads

### Score Point 1 (out of 3 points)

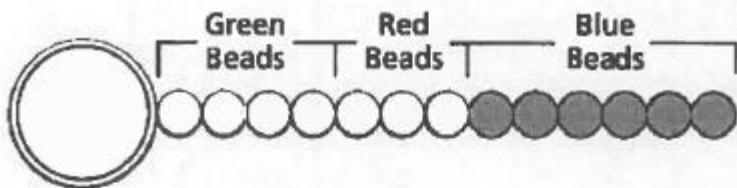
This response demonstrates only a limited understanding of the mathematical concepts in the task. Although the response contains correct solutions, the required work is limited. The work only repeats the final solutions and the value of 20 green beads from the prompt.

## GUIDE PAPER 10

50

Sharon wants to make key chains with different-colored beads, as shown below.

### KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

Show your work.

$$\begin{array}{r} 20 \\ + 3 \\ \hline 23 \end{array} \quad \begin{array}{r} 20 \\ + 6 \\ \hline 26 \end{array}$$

red beads      blue beads

A student's handwritten work for the math problem. It shows two addition problems. The first problem adds 20 and 3, with the result labeled 'red beads'. The second problem adds 20 and 6, with the result labeled 'blue beads'.

Answer 23 red beads

26 blue beads

### Score Point 0 (out of 3 points)

This response is irrelevant and is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The numbers of red and blue beads per chain are inappropriately added to the total number of green beads on all key chains.

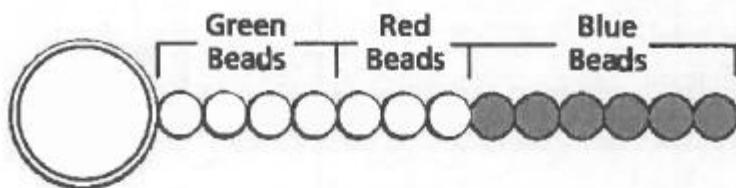
## GUIDE PAPER 11

Additional

50

Sharon wants to make key chains with different-colored beads, as shown below.

### KEY CHAIN



Each key chain will look the same. Sharon will use a total of 20 green beads to make all her key chains. What is the number of red beads and the number of blue beads she will need to make all of the key chains?

Show your work.

$$R. 7 + 3 = 10$$

$$b. 6 + 4 = 10$$

Answer 7 red beads

4 blue beads

### Score Point 0 (out of 3 points)

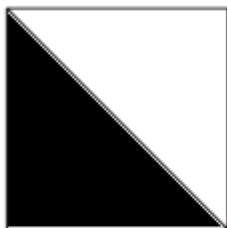
This response is irrelevant and is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Random addition is used with no relation to the correct procedure of the problem.

## EXEMPLARY RESPONSE

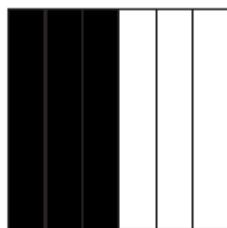
51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

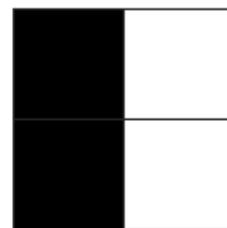
A



B



C



$1/2 = 3/6$  and  $2/4$  since each fraction may be reduced to simple form  $1/2$ .

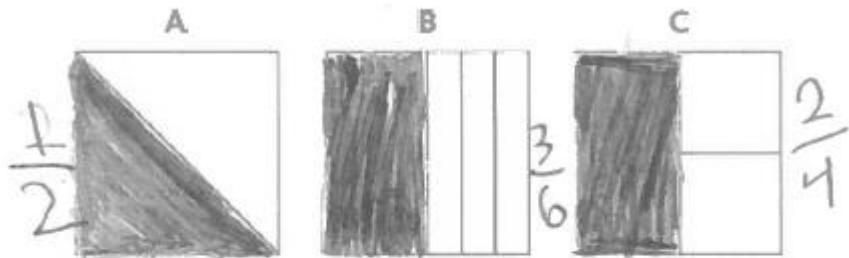
Or other valid response.

## GUIDE PAPER 1

Additional

51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.



First I shaded  $\frac{1}{2}$  of shape A. Then, I shaded  $\frac{3}{6}$  of shape B. Next, I shaded  $\frac{2}{4}$  of shape C. Finally  $\frac{1}{2}$ ,  $\frac{3}{6}$  and  $\frac{2}{4}$  are equivalent because all of the models have the same amount shaded and the same amount not shaded.

### Score Point 3 (out of 3 points)

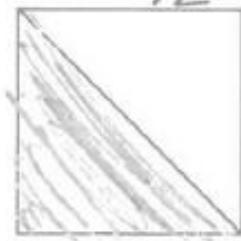
This response demonstrates a thorough understanding of the mathematical concepts in the task. The models are appropriately shaded and the explanation correctly identifies that all fractions reduce to  $\frac{1}{2}$ .

## GUIDE PAPER 2

51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

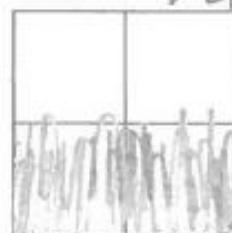
A  $\frac{1}{2}$



B  $\frac{3}{6}$



C  $\frac{2}{4}$



These are all equivalent because  $\frac{1}{2}$  is equal to  $\frac{3}{6}$  and  $\frac{2}{4}$ .  $\frac{3}{6}$  and  $\frac{2}{4}$  are half because if shade 3 out of 6 that's half and shade 2 out of four that's also half.

### Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The models are appropriately shaded and the explanation correctly identifies that all fractions reduce to  $\frac{1}{2}$ .

## GUIDE PAPER 3

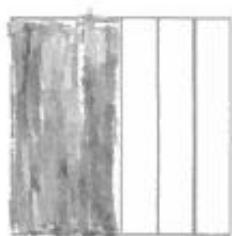
51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

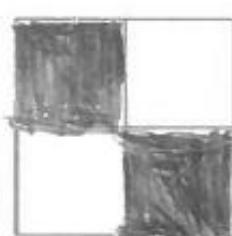
A



B



C



They are equivalent because  $\frac{1}{2}$ ,  $\frac{3}{6}$ ,  $\frac{2}{4}$  are all  $\frac{1}{2}$ .

### Score Point 3 (out of 3 points)

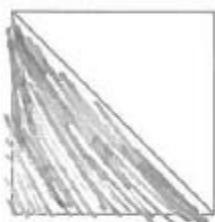
This response demonstrates a thorough understanding of the mathematical concepts in the task. The models are appropriately shaded and the explanation correctly identifies that all fractions reduce to  $\frac{1}{2}$ .

## GUIDE PAPER 4

51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

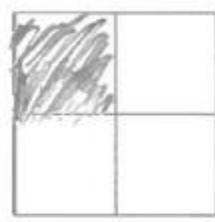
A



B



C



These fractions are equivalent fractions because they all equal the same amount.

### Score Point 2 (out of 3 points)

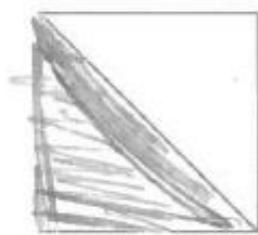
This response demonstrates a partial understanding of the mathematical concepts in the task. Two of the models are appropriately shaded by  $\frac{1}{2}$ ; however, the third model is only shaded by  $\frac{1}{4}$ . The explanation, while not strong, does convey the concept of all fractions reducing to an equal value. The response correctly addresses most, but not all aspects of the task.

## GUIDE PAPER 5

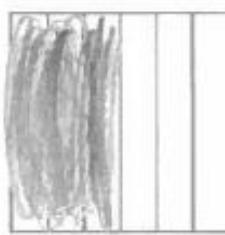
51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

A



B



C



They are equal because they make a fraction for example A is  $\frac{1}{2}$ , B is  $\frac{3}{6}$  and C is  $\frac{3}{4}$ .

### Score Point 2 (out of 3 points)

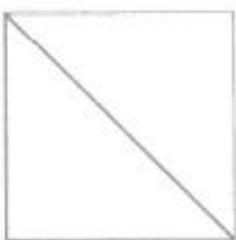
This response demonstrates a partial understanding of the mathematical concepts in the task. Two of the models are appropriately shaded by  $\frac{1}{2}$ ; however, the third model is shaded by  $\frac{3}{4}$ . The explanation does not sufficiently address the equivalence of all three fractions, but it is consistent with how the models were shaded. The response reflects some minor misunderstanding of the underlying concepts in the task.

## GUIDE PAPER 6

51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

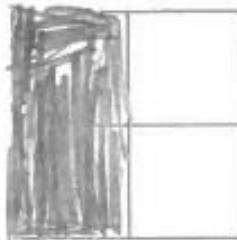
A



B



C



B and C are equivalent fractions  
because they are shaded the  
same but split differently.

### Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. Two of the models are appropriately shaded by  $\frac{1}{2}$ ; however, the first model is not shaded. The explanation correctly addresses the equivalence of the models that were shaded. The response correctly addresses most, but not all aspects of the task.

## GUIDE PAPER 7

51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

A



B



C



Band C are the  
only ones equivalent because  
A only has 2 parts not 3.

### Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts in the task. The models and explanation inappropriately equate only the numerators of fractions (total number of sections shaded). The response reflects a lack of essential understanding of the underlying concepts in the task.

## GUIDE PAPER 8

Additional

51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

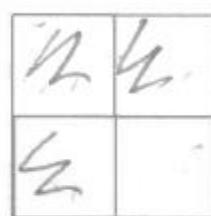
A



B



C



$\frac{1}{2}$

$\frac{3}{6}$

(9)

$\frac{1}{4}$

(4)

It go by 3's that's  
why it's equivalent

### Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts in the task. Two of the models are appropriately shaded by  $\frac{1}{2}$ ; however, the third model is shaded by  $\frac{3}{4}$ . Additionally, the explanation inappropriately equates only the total number of shaded sections (corresponding to only the numerator of a fraction). The response reflects a lack of essential understanding of the underlying concepts.

## GUIDE PAPER 9

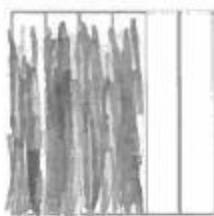
51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

A



B



C



They all are equivalent  
because all are shaded  
in four.

### Score Point 1 (out of 3 points)

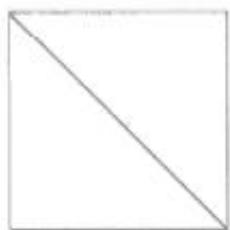
This response demonstrates only a limited understanding of the mathematical concepts in the task. Two of the models are appropriately shaded wholly and equivalently; however, the second model is shaded by  $\frac{4}{6}$ . Additionally, the explanation inappropriately equates only the total number of shaded sections (corresponding to only the numerator of a fraction). The response reflects a lack of essential understanding of the underlying concepts.

## GUIDE PAPER 10

51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

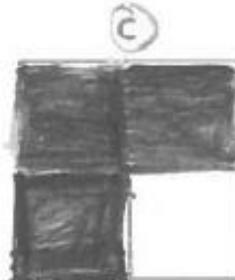
A



B



C



c is my answer because 4 and you  
correclt.

### Score Point 0 (out of 3 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Only a single model is shaded and the explanation is incoherent.

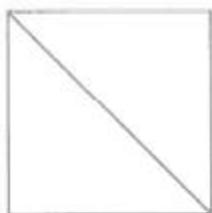
## GUIDE PAPER 11

Additional

51

Shade the models below to show 3 equivalent fractions and explain why they are equivalent.

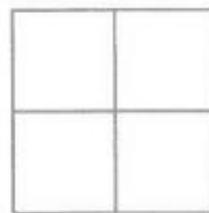
A



B



C



The fractions are equivalent because the numerators are all the same and the denominators are all even.

$$\begin{array}{r} 2 \ 6 \ 4 \\ \hline 1 \ 1 \ 1 \end{array}$$

### Score Point 0 (out of 3 points)

Although the explanation mentions comparing numerators and denominators, the numbers below the answer appropriately show the total number of sections in each diagram as the numerator when they should be in the denominator, and the denominators are all 1. In addition, no models are shaded. Holistically, the response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task.

## EXEMPLARY RESPONSE

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

***Show your work.***

$$80 \times 8 = 640$$

$$20 \times 3 = 60$$

$$640 + 60 = 700$$

$$700 - 125 = 575$$

OR other valid response

***Answer*** \$ 575

## GUIDE PAPER 1

Additional

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

Show your work.

$$\begin{array}{r} 20 \\ \times 3 \\ \hline 60 \end{array}$$

$$\begin{array}{r} 80 \\ \times 8 \\ \hline 640 \end{array}$$

$$\begin{array}{r} 6+10 \\ \hline \$7\cancel{8}\cancel{0} \\ -\$125 \\ \hline \$575 \end{array}$$

$$\begin{array}{r} 640 \\ + 60 \\ \hline 700 \end{array}$$

Answer \$ 575

### Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The ticket revenue is correctly calculated and the donation amount subtracted to determine the remaining money.

## GUIDE PAPER 2

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

Show your work.

<u>Adults</u>	<u>Children</u>	$\frac{1}{\$640}$	$\frac{9}{\$700}$
$\begin{array}{r} 80 \\ \times 8 \\ \hline 640 \end{array}$	$\begin{array}{r} 20 \\ \times 3 \\ \hline 60 \end{array}$	$\begin{array}{r} \$640 \\ + \$60 \\ \hline \$700 \end{array}$	$\begin{array}{r} \$700 \\ - \$125 \\ \hline \$575 \end{array}$

The school has \$575 to buy supplies for next year's play.

Answer 575

### Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The ticket revenue is correctly calculated and the donation amount subtracted to determine the remaining money.

## GUIDE PAPER 3

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

Show your work.

7640

$$8 \times 80 = 640$$

$$\begin{array}{r} & 20 & 80 \\ + & 20 & + 80 \\ \hline & 20 & 80 \\ & 60 & 80 \\ \hline & 60 & 80 \\ & 80 & 80 \\ & 80 & 80 \\ & 80 & 80 \\ & 80 & 80 \\ & 80 & 80 \\ \hline & 640 & 640 \end{array}$$

1                          2

$$\begin{array}{r} 640 \\ - 125 \\ \hline 515 \end{array}$$

Answer 5 515

### Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts in the task. The ticket revenue is correctly calculated and the donation amount subtracted to determine the remaining money.

## GUIDE PAPER 4

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

Show your work.

$$80 \times 8 = 640$$

$$20 \times 3 = 50$$

$$640 + 50 = 690$$

$$690 - 125 = 565$$

Answer \$ 565

### Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The ticket revenue is calculated and the donation amount correctly subtracted to determine the remaining money; however, a calculation error when determining the revenue ( $20 \times 3 = 50$ ) results in an incorrect final solution. Although the solution is incorrect, appropriate and mathematically sound procedures were used.

## GUIDE PAPER 5

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

**Show your work.**

$$\begin{array}{r} \text{Ad: } 80 \quad 80 \quad 20 \quad 1640 \\ (\cdot 20) \quad \cancel{8}x \quad \cancel{3}x \quad \cancel{6}0 \\ \hline 640 \quad 60 \quad 700 \end{array}$$
$$\begin{array}{r} 640 \\ - 125 \\ \hline 515 \end{array}$$

**Answer:** \$ 515

### Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The ticket revenue is correctly calculated and the donation amount subtracted to determine the remaining money; however, a calculation error during the subtraction ( $700 - 125 = 515$ ) results in an incorrect final solution. Although the solution is incorrect, appropriate and mathematically sound procedures were used.

## GUIDE PAPER 6

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

Show your work.

$$\begin{array}{r} \times 80 \\ \hline 640 \end{array} \quad \begin{array}{r} \times 20 \\ \hline 60 \end{array} \quad \begin{array}{r} + 640 \\ 60 \\ \hline 700 \end{array}$$

Answer \$ 700

### Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts in the task. The ticket revenue is correctly calculated; however, no attempt is made to subtract the donation amount to determine the remaining money. The response addresses most, but not all aspects of the task.

## GUIDE PAPER 7

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

*Show your work.*

$$8 \times 80 = 600$$

$$\begin{array}{r} 5019 \\ 8000 \\ -125 \\ \hline 475 \end{array}$$

475

*Answer \$*

### Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts in the task. The donation amount is correctly subtracted from ticket revenue; however, the value of \$600 is an incorrect amount from a calculation error ( $8 \times 80 = 600$ ) that additionally does not include revenue from the children's tickets. The response correctly addresses only some elements of the task.

## GUIDE PAPER 8

Additional

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

Show your work.

$$\begin{array}{r} 80 \\ \times 8 \\ \hline 640 \end{array} \quad \begin{array}{r} 20 \\ \times 3 \\ \hline 60 \end{array}$$
$$640 + 60 = 900$$

Answer \$

900.

### Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts in the task. Revenue from child's tickets is correctly calculated; however, a calculation error when determining the revenue from adult's tickets ( $80 \times 8 = 840$ ) results in an incorrect value for total revenue. Additionally, no attempt is made to subtract the donation amount to determine the remaining money. The response correctly addresses only some elements of the task.

## GUIDE PAPER 9

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

*Show your work.*

$$\begin{array}{r} 20 \times 3 = 60 \\ 80 \times 8 = \\ 60 + 1,000 = 1,060 \end{array}$$

*Answer \$ 935*

### Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts in the task. Revenue from child's tickets is correctly calculated; however, a calculation error when determining the revenue from adult's tickets ( $80 \times 8 = 1000$ ) results in an incorrect value for total revenue. The donation is then subtracted correctly to obtain the answer of \$935, but this step is not shown. The response addresses some elements of the task correctly but reaches an inadequate solution based on faulty and incomplete reasoning.

## GUIDE PAPER 10

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

**Show your work.**

$$\begin{array}{r} & 8 \\ 125 + & 13 \\ \hline & 111 \\ \hline 136 \end{array}$$

**Answer:** 136

**Score Point 0 (out of 3 points)**

This response is irrelevant and not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The two costs per ticket type are inappropriately added together and then added to the donation amount.

## GUIDE PAPER 11

Additional

52

There were 80 adults and 20 children at a school play. The school collected \$8 for each adult's ticket and \$3 for each child's ticket. The school donated \$125 of the money from tickets to a local theater program and used the remaining money to buy supplies for next year's school play.

How much money does the school have to buy supplies for next year's play?

Show your work.

$$\begin{array}{r} 20 \\ 80 \\ + \quad \\ \hline 100 \end{array}$$

$$\begin{array}{r} 8 \\ + 3 \\ \hline 11 \end{array}$$

Answer \$ 100

### Score Point 0 (out of 3 points)

This response is irrelevant and not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The two costs per ticket type are inappropriately added together and the total number of attendees calculated.