



New York State Testing Program

**2016 Common Core
Mathematics Test**

Grade 3

Scoring Leader Materials

Training Set

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2-Point Holistic Rubric

2 Point	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">• indicates that the student has completed the task correctly, using mathematically sound procedures• contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures• may contain inconsequential errors that do not detract from the correct solution and the demonstration of a thorough understanding
1 Point	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">• correctly addresses only some elements of the task• may contain an incorrect solution but applies a mathematically appropriate process• may contain the correct solution but required work is incomplete
0 Point*	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:

3 Point	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">• indicates that the student has completed the task correctly, using mathematically sound procedures• contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures• may contain inconsequential errors that do not detract from the correct solution(s) and the demonstration of a thorough understanding
2 Point	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">• appropriately addresses most, but not all aspects of the task using mathematically sound procedures• may contain an incorrect solution but provides sound procedures, reasoning, and/or explanations• may reflect some minor misunderstanding of the underlying mathematical concepts and/or procedures
1 Point	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">• may address some elements of the task correctly but reaches an inadequate solution and/or provides reasoning that is faulty or incomplete• exhibits multiple flaws related to misunderstanding of important aspects of the task, misuse of mathematical procedures, or faulty mathematical reasoning• reflects a lack of essential understanding of the underlying mathematical concepts• may contain the correct solution(s) but required work is limited
0 Point*	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

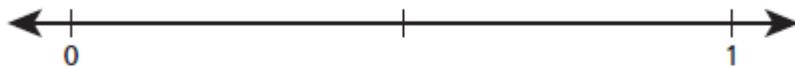
Below are the policies to be followed while scoring the mathematics tests for all grades:

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.

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.

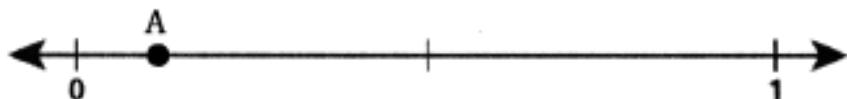


EXEMPLARY RESPONSE

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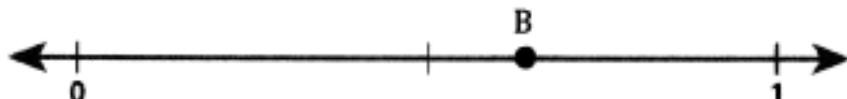
Haley cut pieces of ribbon to make bookmarks. Each bookmark was $\frac{1}{8}$ foot long.

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.



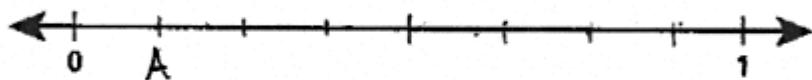
GUIDE PAPER 1

Additional

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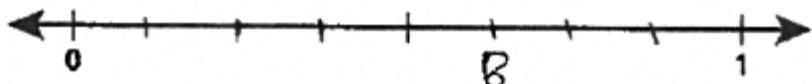
Haley cut pieces of ribbon to make bookmarks. Each bookmark was $\frac{1}{8}$ foot long.

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)

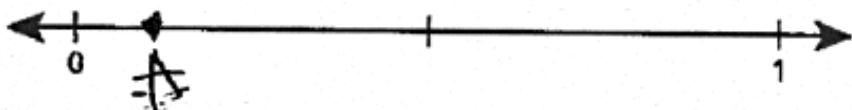
This response demonstrates a thorough understanding of the mathematical concepts in the task. The section of the number line is correctly divided into 8 parts. Point A is correctly placed at the $\frac{1}{8}$ mark. Point B is placed correctly at $\frac{5}{8}$ on the number line.

GUIDE PAPER 2

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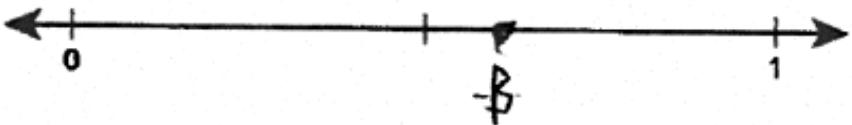
Haley cut pieces of ribbon to make bookmarks. Each bookmark was $\frac{1}{8}$ foot long.

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)

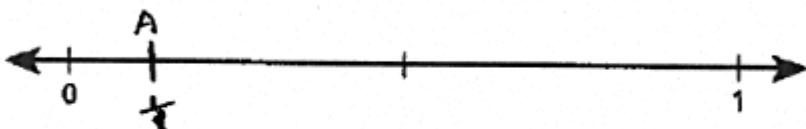
This response demonstrates a thorough understanding of the mathematical concepts in the task. Point A is correctly placed at the $\frac{1}{8}$ mark. Point B is placed correctly at $\frac{5}{8}$ on the number line.

GUIDE PAPER 3

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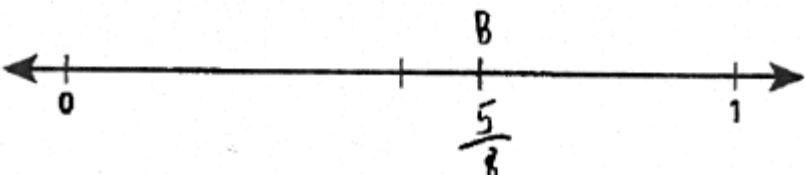
Haley cut pieces of ribbon to make bookmarks. Each bookmark was $\frac{1}{8}$ foot long.

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)

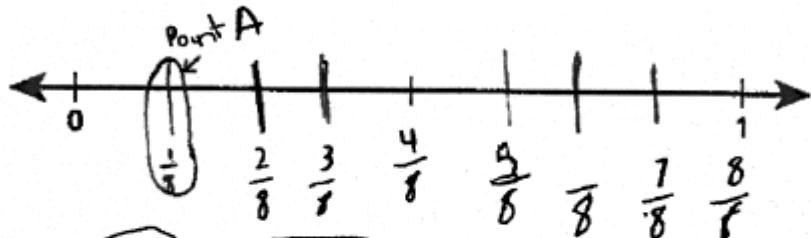
This response demonstrates a thorough understanding of the mathematical concepts in the task. Point A is correctly drawn at the $\frac{1}{8}$ mark. Point B is correct at $\frac{5}{8}$ on the number line.

GUIDE PAPER 4

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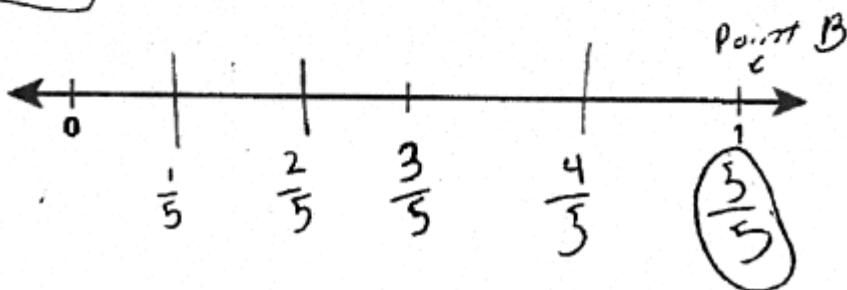
Haley cut pieces of ribbon to make bookmarks. Each bookmark was $\frac{1}{8}$ foot long.

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)

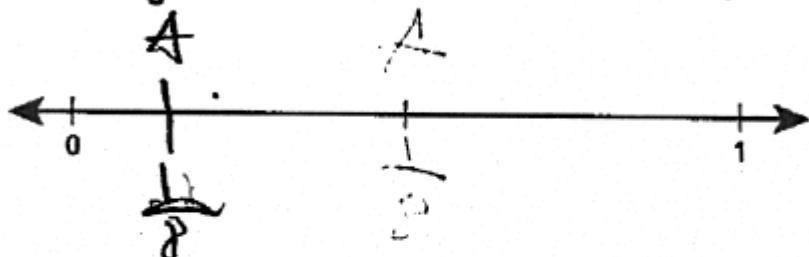
This response demonstrates a partial understanding of the mathematical concepts in the task. The segment of the first number line is correctly divided into 8 sections. Point A is correctly drawn at the $\frac{1}{8}$ mark. Point B is incorrect at $\frac{5}{5}$.

GUIDE PAPER 5

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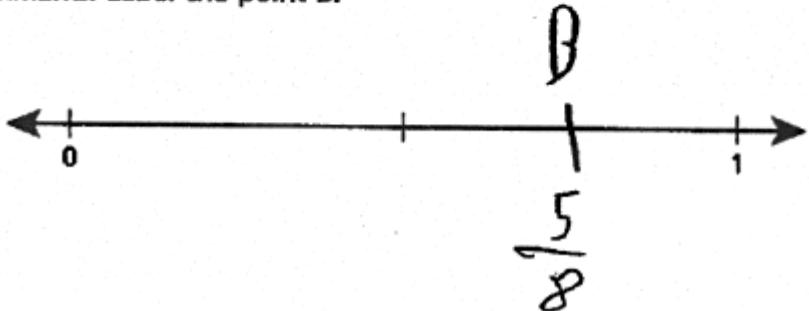
Haley cut pieces of ribbon to make bookmarks. Each bookmark was $\frac{1}{8}$ foot long.

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)

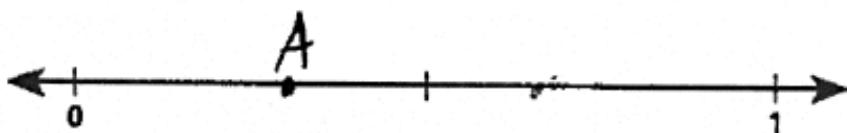
This response demonstrates a partial understanding of the mathematical concepts in the task. Point A is correctly drawn at the $\frac{1}{8}$ mark on the number line. Point B is incorrect. Although point B is labeled as $\frac{5}{8}$, it is placed at the $\frac{3}{4}$ mark.

GUIDE PAPER 6

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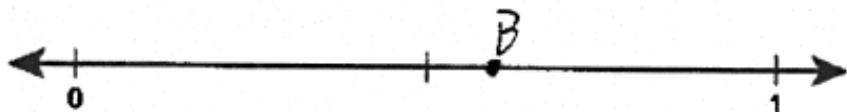
Haley cut pieces of ribbon to make bookmarks. Each bookmark was $\frac{1}{8}$ foot long.

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

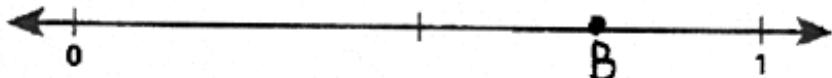
Haley cut pieces of ribbon to make bookmarks. Each bookmark was $\frac{1}{8}$ foot long.

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.

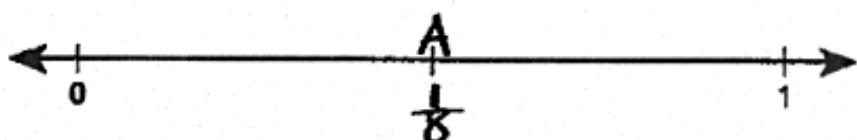
GUIDE PAPER 8

Additional

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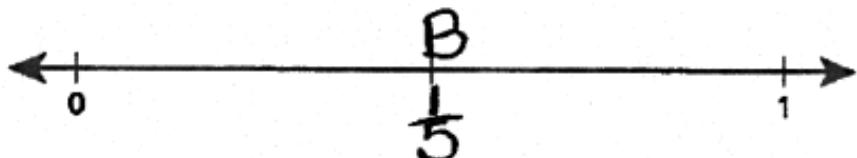
Haley cut pieces of ribbon to make bookmarks. Each bookmark was $\frac{1}{8}$ foot long.

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.

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.

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

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.

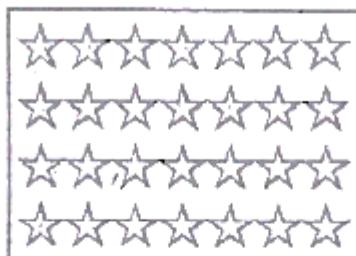
GUIDE PAPER 1

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)

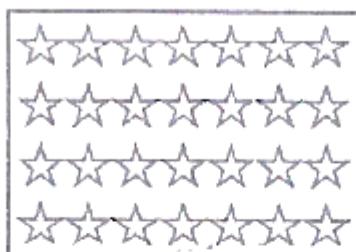
This response demonstrates a thorough understanding of the mathematical concepts in the task. Two correct multiplication facts are given to represent 28 stickers. The response provides a correct expression to represent the stickers on pages 2 and 3.

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)

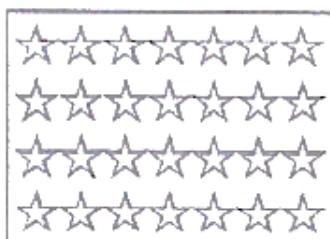
This response demonstrates a thorough understanding of the mathematical concepts in the task. Two correct multiplication facts are given to represent 28 stickers. The response provides a correct expression to represent the stickers on pages 2 and 3.

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)

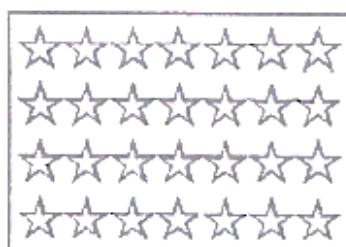
This response demonstrates a thorough understanding of the mathematical concepts in the task. Two correct multiplication facts are given to represent 28 stickers. The response provides a correct expression to represent the stickers on pages 2 and 3. The response counts the number of stickers on each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

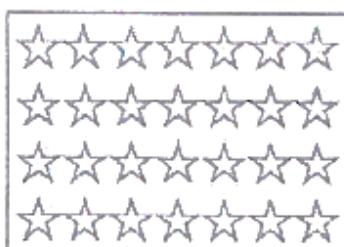
This response demonstrates a partial understanding of the mathematical concepts in the task. Two correct multiplication facts are given to represent 28 stickers. The expression representing the number of stickers on pages 2 and 3 is incorrect. A mistake is made when multiplying $(4 + 3)$ by 7 rather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

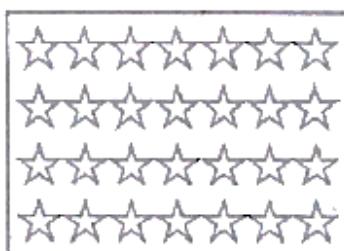
This response demonstrates a partial understanding of the mathematical concepts in the task. Two incorrect multiplication facts are given. The response provides an incorrect answer for the number of stickers. The expression representing the number of stickers on pages 2 and 3 is correct.

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)

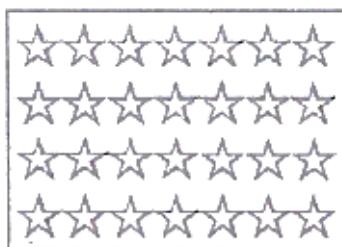
This response demonstrates a partial understanding of the mathematical concepts in the task. Two correct multiplication facts are given to represent 28 stickers. The expression representing the number of stickers on pages 2 and 3 is incorrect (values 16 and 9 are incorrect).

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.

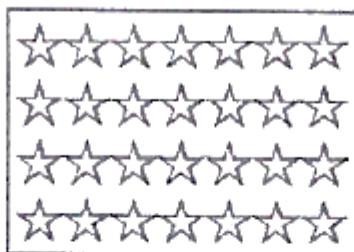
GUIDE PAPER 8

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.

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

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

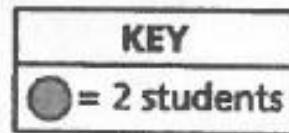
Several students voted on their favorite sports activities.

- 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	○○
Baseball	○○○○○
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

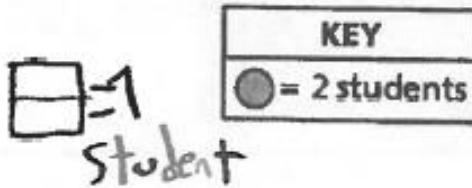
Several students voted on their favorite sports activities.

- 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	0000

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.

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

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

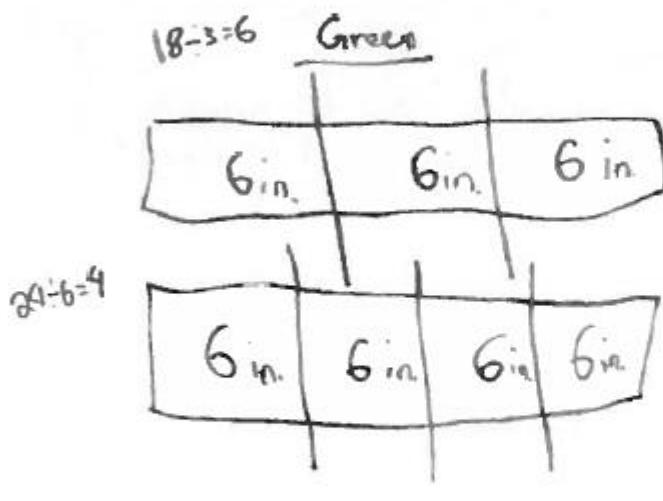
48

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

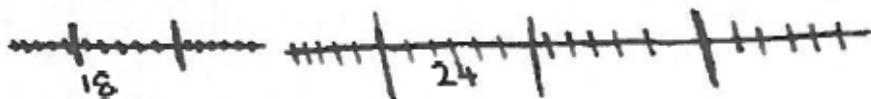
48

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

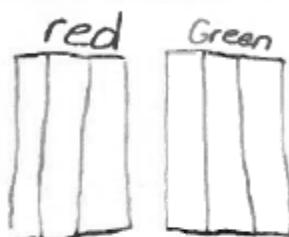
48

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.



$$\begin{aligned}3+3 &= 6 \text{ inches} \\3 \times 2 &= 6 \text{ inches}\end{aligned}$$

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, stacked vertically with a plus sign between them. A diagonal line is drawn through the numbers. To the right of the equation, the word "pieces" is written diagonally above the line.

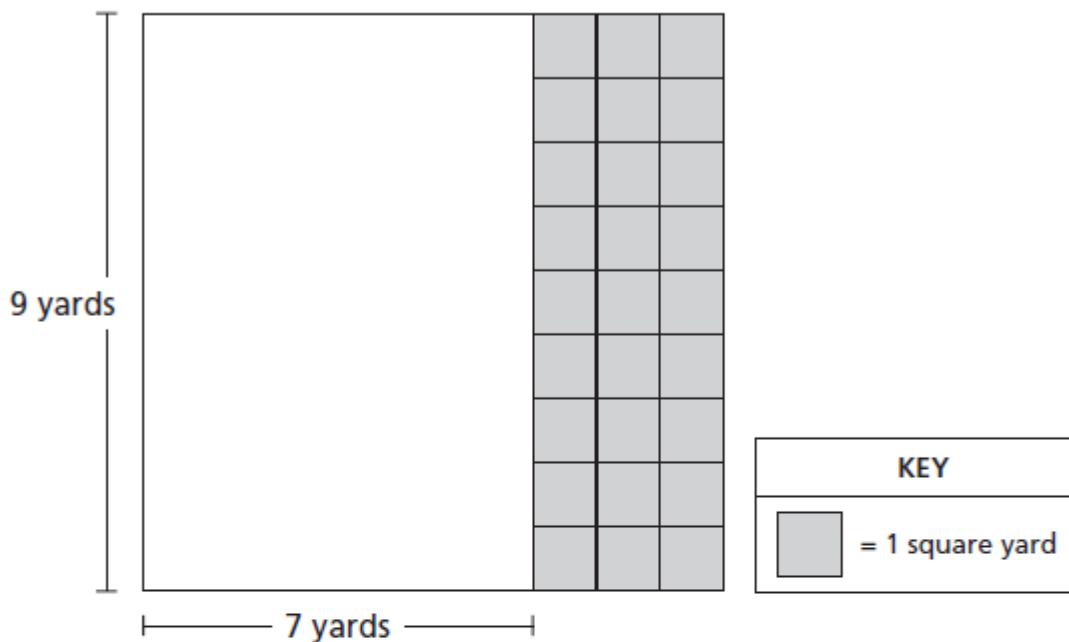
Answer 42 pieces

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.

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?

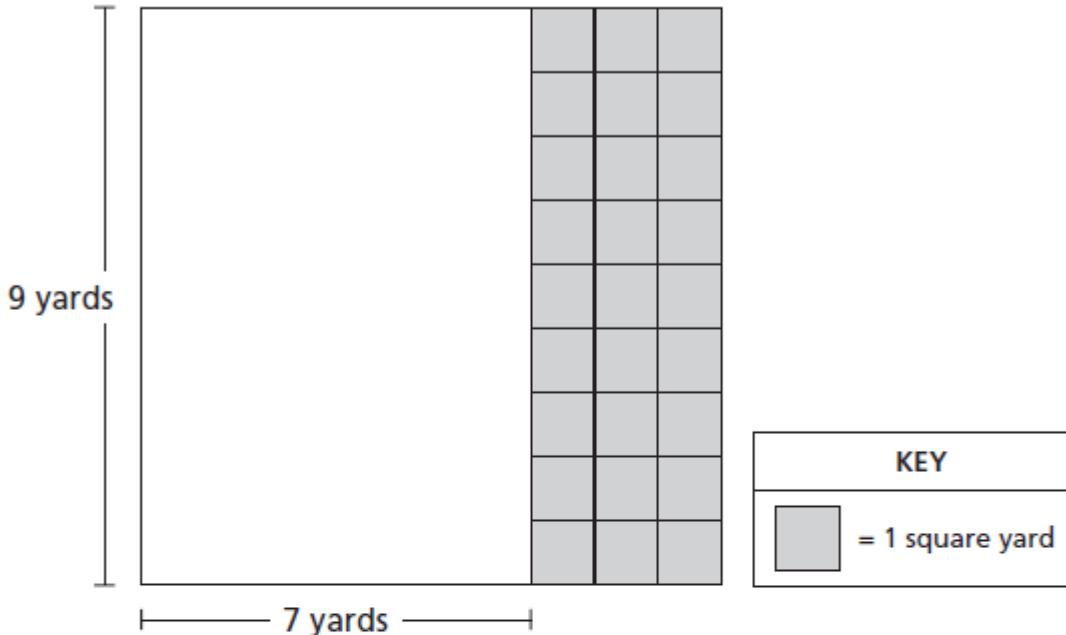
Show your work.

Answer _____ square yards

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.

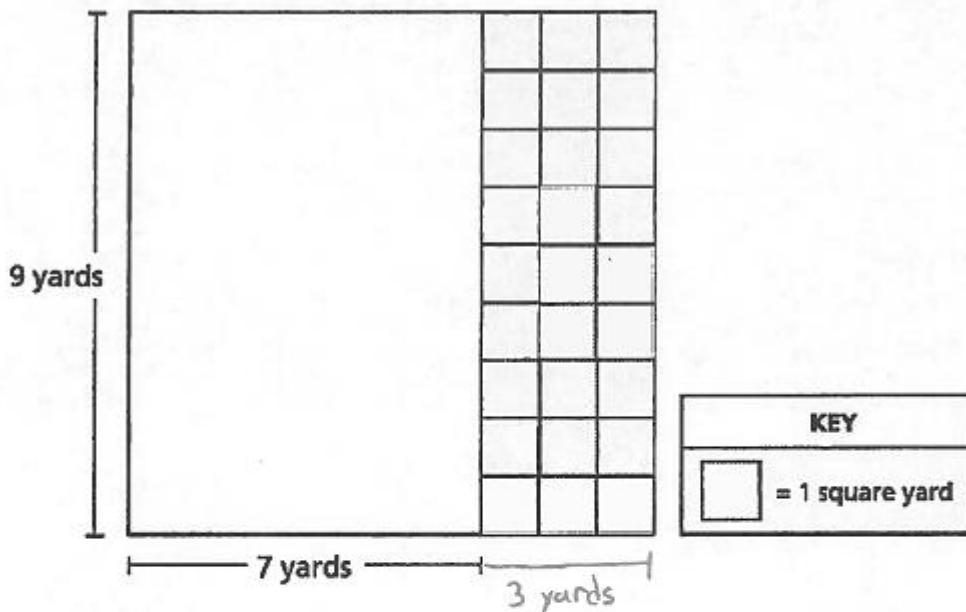
Answer 90 square yards

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

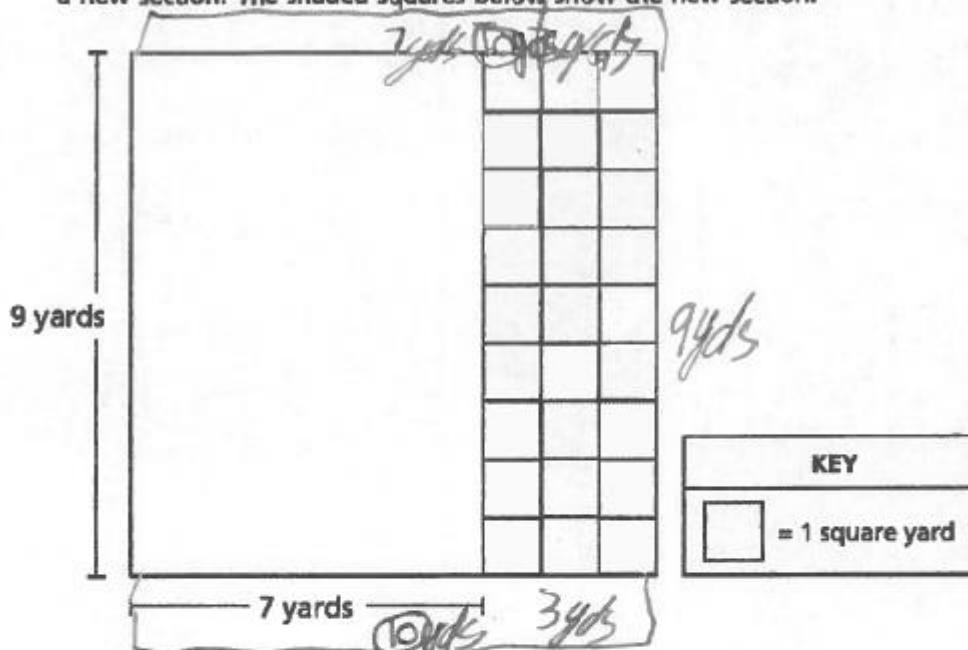
Score Point 2 (out of 2 points)

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*

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

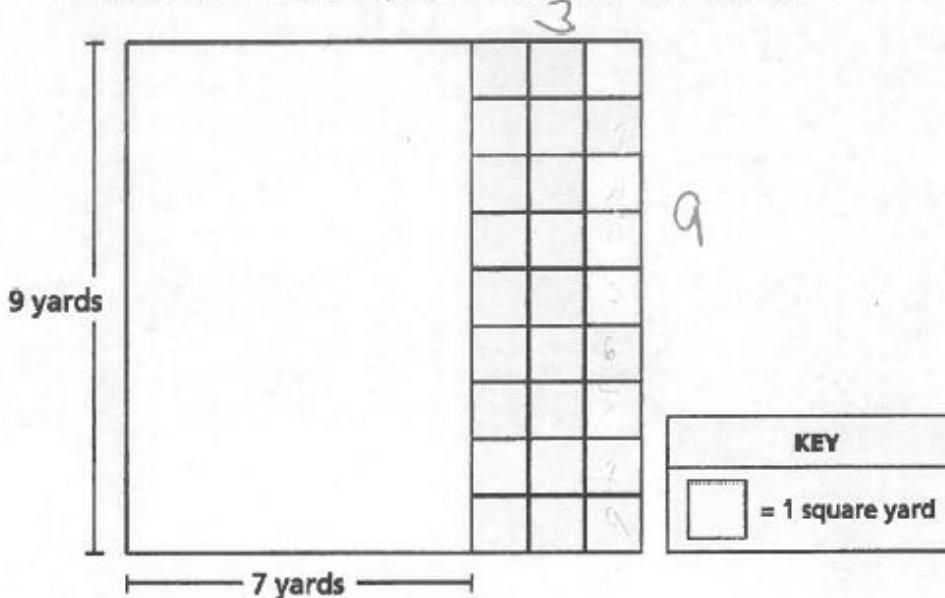
Score Point 2 (out of 2 points)

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

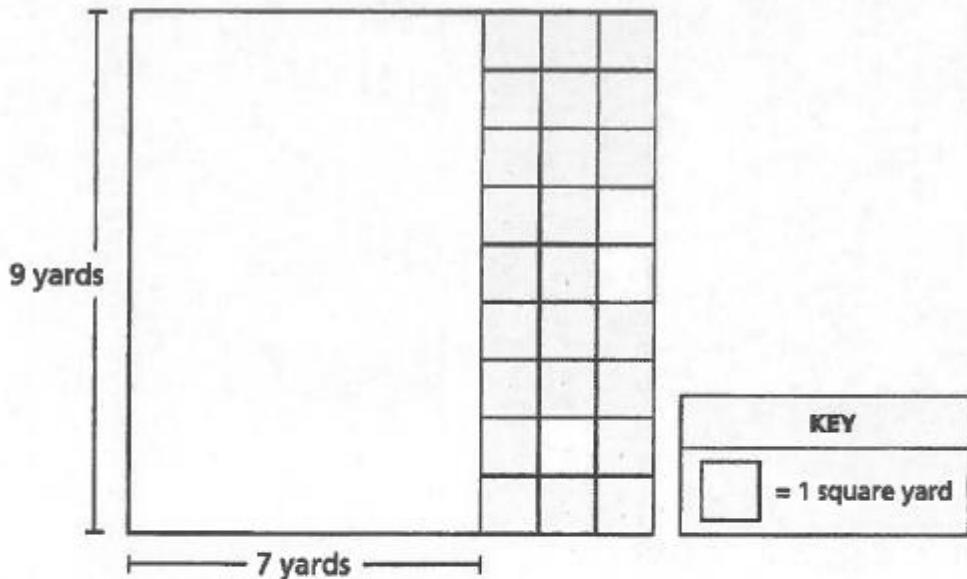
Score Point 2 (out of 2 points)

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

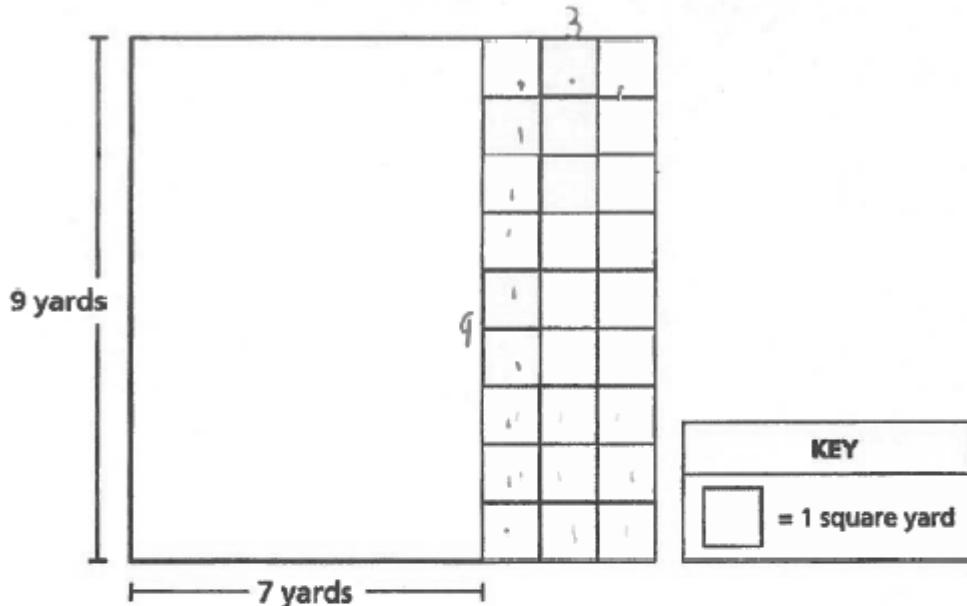
Score Point 1 (out of 2 points)

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

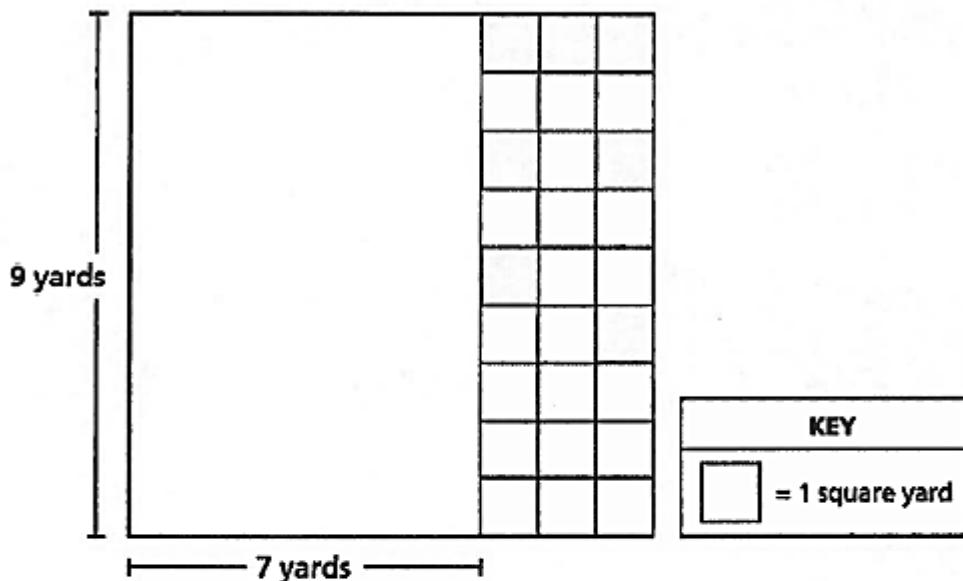
Score Point 1 (out of 2 points)

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

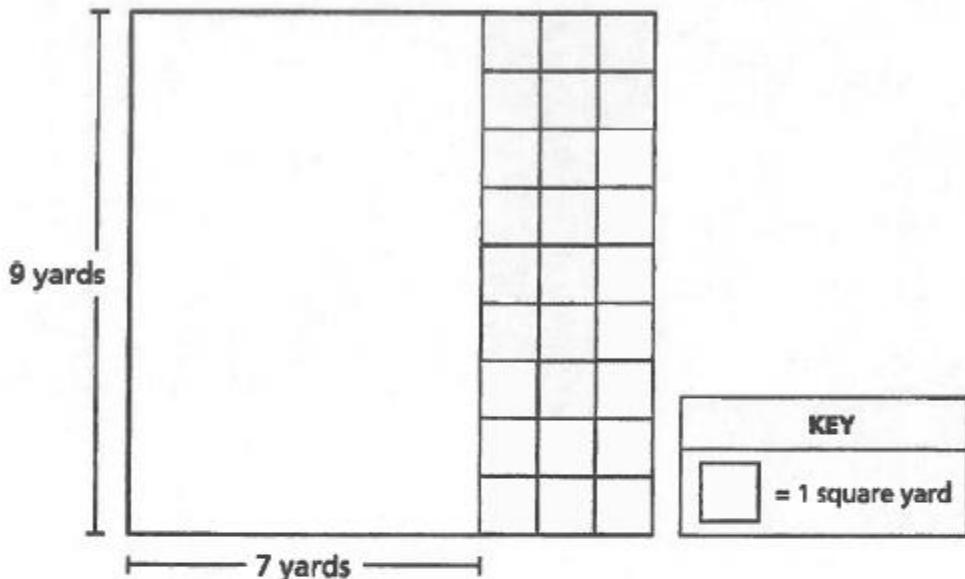
Score Point 1 (out of 2 points)

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)

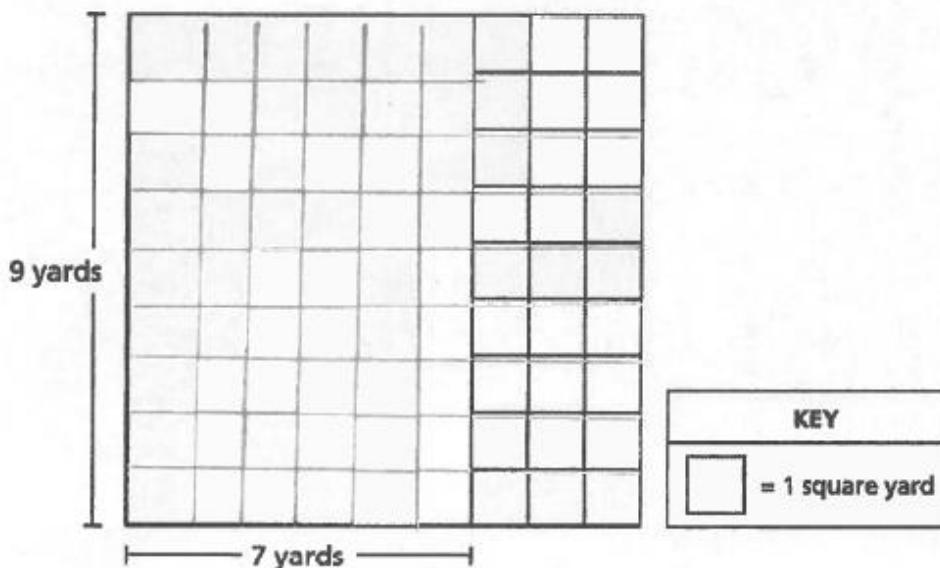
While an attempt is made to determine the area of the new section, a calculation error ($9 \times 3 = 25$) results in an incorrect value. Additionally, no attempt is made to calculate and include the original area of the shop. Holistically, the response is not sufficient to demonstrate even a limited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

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

A handwritten multiplication problem is shown: $9 \times 7 = 53$. The word "square yard" is written above the problem, and the result "53" is written below it. There are several small marks and lines around the numbers, likely from a previous attempt or a different problem.

Answer 53 square yards

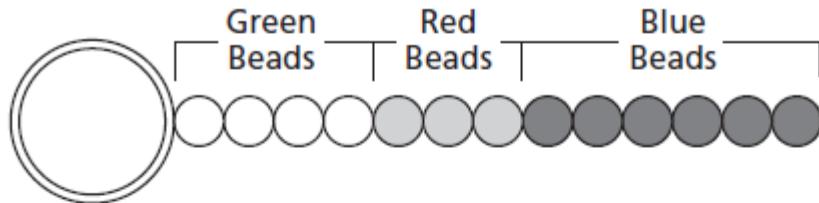
Score Point 0 (out of 2 points)

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.

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

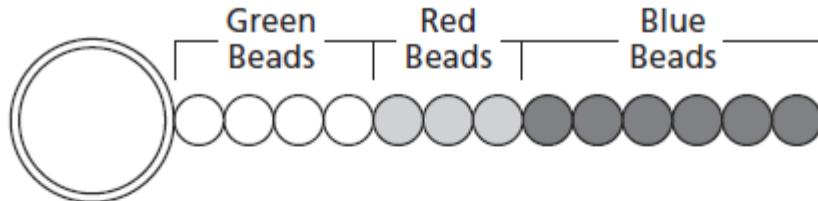
_____ blue beads

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

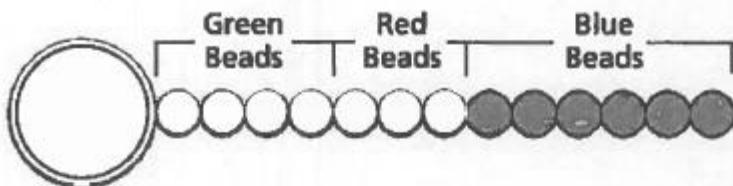
GUIDE PAPER 1

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)

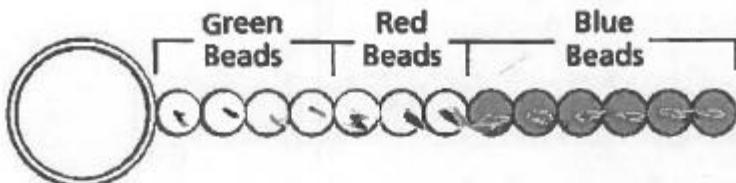
This response demonstrates a thorough understanding of the mathematical concepts in the task. The correct number of key chains to be made is calculated and correctly multiplied by the numbers of red and blue beads per chain.

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)

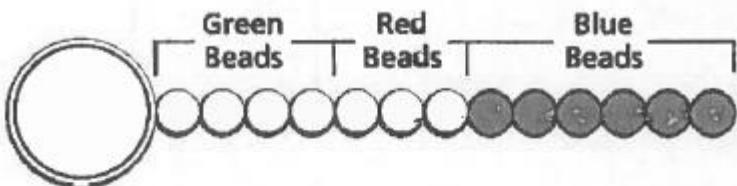
This response demonstrates a thorough understanding of the mathematical concepts in the task. The number of key chains to be made is correctly multiplied by the numbers of red and blue beads per chain. A multiplication by the number of green beads per chain sufficiently verifies the correct number of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

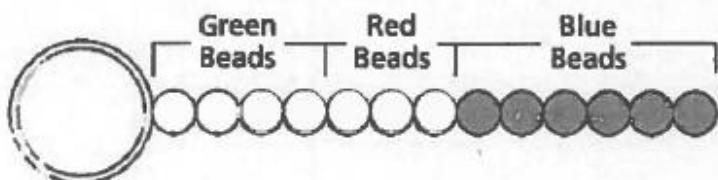
This response demonstrates a thorough understanding of the mathematical concepts in the task. The number of key chains to be made is correctly multiplied by the numbers of red and blue beads per chain. No work is shown to derive the value of 5 key chains; however, this step is acceptable to be performed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

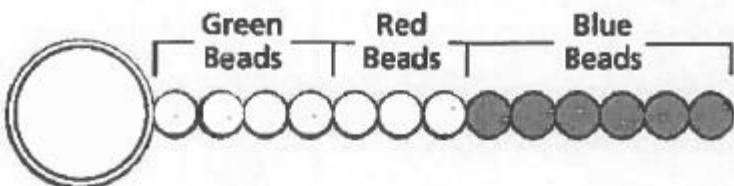
This response demonstrates a partial understanding of the mathematical concepts in the task. Repeated addition is used to correctly calculate the total number of each color of beads; however, the answers are transcribed onto the wrong answer blanks and the work does not label which column is for which 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)

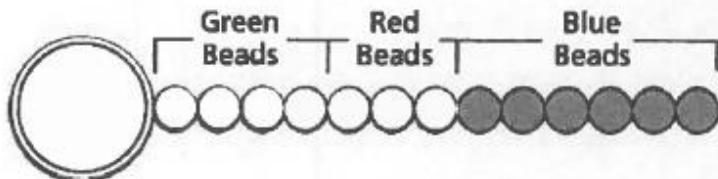
This response demonstrates a partial understanding of the mathematical concepts in the task. Cumulative addition of green beads shows the correct total number of key chains and the correct solutions are provided; however, no intermediate work is shown to link these steps. The response addresses most, 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)

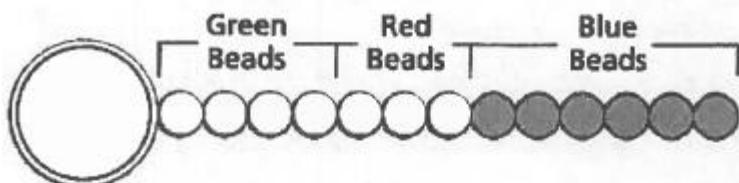
This response demonstrates a partial understanding of the mathematical concepts in the task. The number of key chains to be made is correctly multiplied by the number of red and blue beads per chain; however, the answers are transposed in both the work and the answer blanks. Although the response contains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

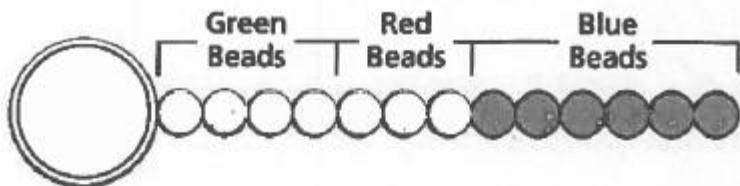
GUIDE PAPER 8

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)

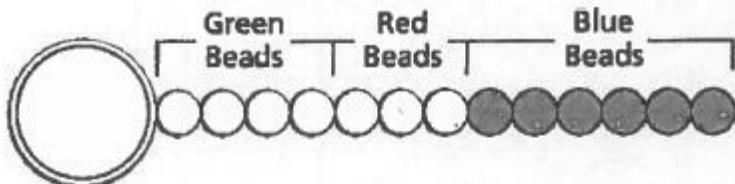
This response demonstrates only a limited understanding of the mathematical concepts in the task. Although the response contains correct solutions, the required work is limited. The work only repeats the final solutions and the value of 20 green beads from the prompt.

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)

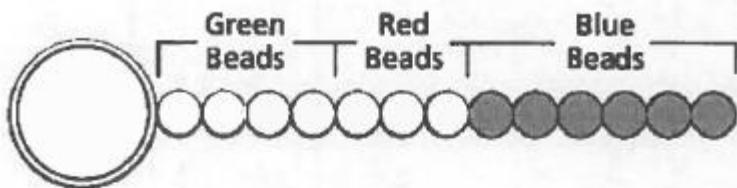
This response demonstrates only a limited understanding of the mathematical concepts in the task. Although the response contains correct solutions, the required work is limited. The work only repeats the final solutions and the value of 20 green beads from the prompt.

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 showing 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.

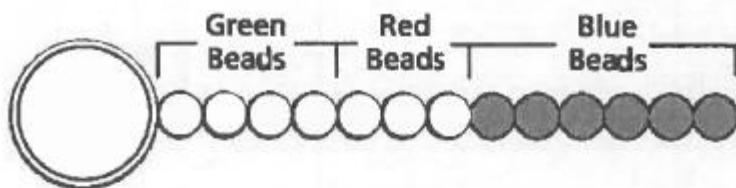
GUIDE PAPER 11

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

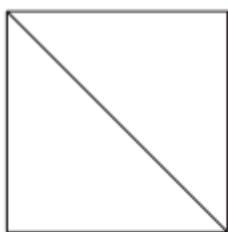
Score Point 0 (out of 3 points)

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.

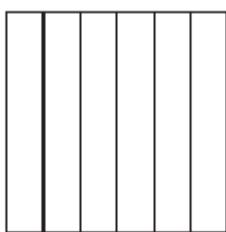
51

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

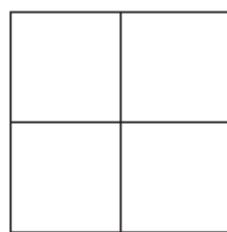
A



B



C

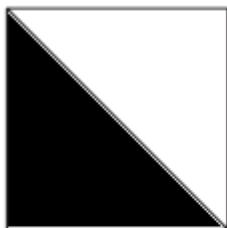


EXEMPLARY RESPONSE

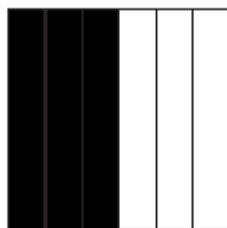
51

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

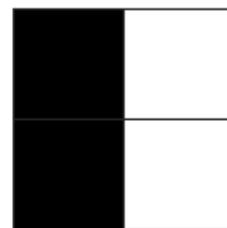
A



B



C



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

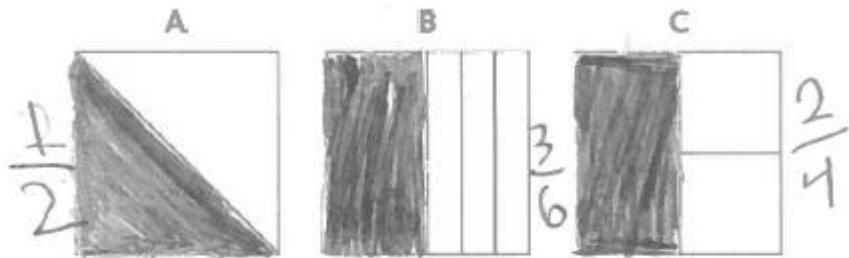
Or other valid response.

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)

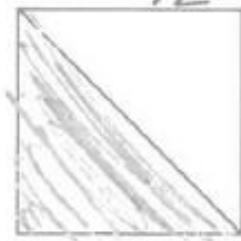
This response demonstrates a thorough understanding of the mathematical concepts in the task. The models are appropriately shaded and the explanation correctly identifies that all fractions reduce to $\frac{1}{2}$.

GUIDE PAPER 2

51

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

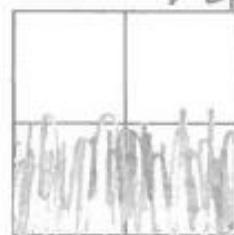
A $\frac{1}{2}$



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

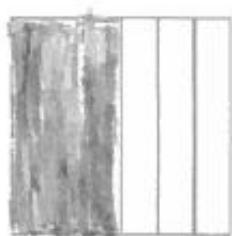
51

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

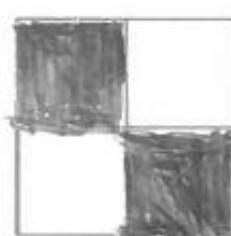
A



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)

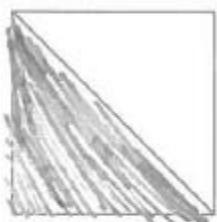
This response demonstrates a thorough understanding of the mathematical concepts in the task. The models are appropriately shaded and the explanation correctly identifies that all fractions reduce to $\frac{1}{2}$.

GUIDE PAPER 4

51

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

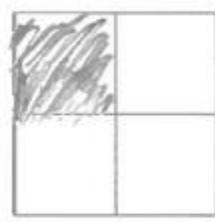
A



B



C



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

Score Point 2 (out of 3 points)

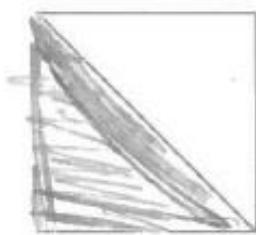
This response demonstrates a partial understanding of the mathematical concepts in the task. Two of the models are appropriately shaded by $\frac{1}{2}$; however, the third model is only shaded by $\frac{1}{4}$. The explanation, while not strong, does convey the concept of all fractions reducing to an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

GUIDE PAPER 5

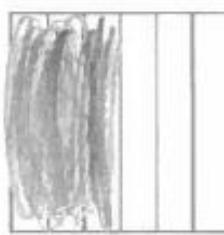
51

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)

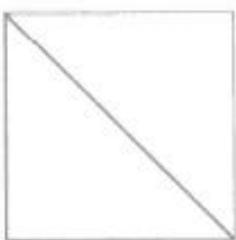
This response demonstrates a partial understanding of the mathematical concepts in the task. Two of the models are appropriately shaded by $\frac{1}{2}$; however, the third model is shaded by $\frac{3}{4}$. The explanation does not sufficiently address the equivalence of all three fractions, but it is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

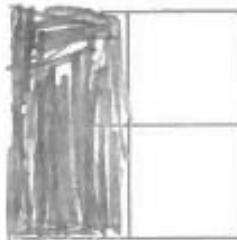
A



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.

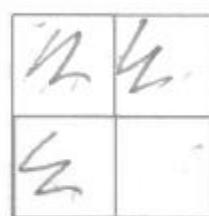
A



B



C



$\frac{1}{2}$

$\frac{3}{6}$

$\frac{1}{4}$

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

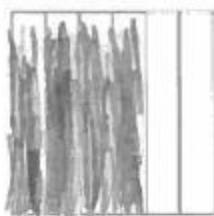
51

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)

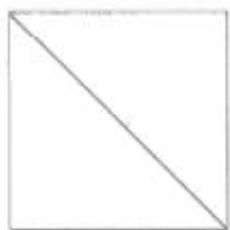
This response demonstrates only a limited understanding of the mathematical concepts in the task. Two of the models are appropriately shaded wholly and equivalently; however, the second model is shaded by $\frac{4}{6}$. Additionally, the explanation inappropriately equates only the total number of shaded 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.

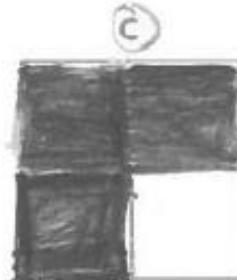
A



B



C



c is my answer because A and you
correcl3.

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.

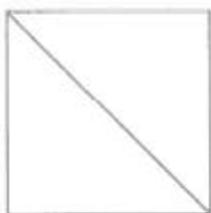
GUIDE PAPER 11

Additional

51

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

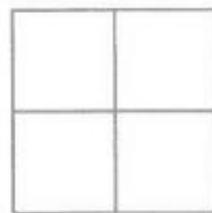
A



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.

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 \$ _____

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.

$$8 \times 80 = 640$$

Answer S 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 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.

