New York State Testing Program

2023

Mathematics Test

Grade 5

Scoring Leader Materials

Training Set

QAI28352

Note to Scorers

You may notice that some questions in these scoring materials appear with a bracketed credit value showing the respective number of credits. This is due to a style change that was recently field tested; therefore, not all items will have the bracketed credit value. An example of what the bracketed credit value looks like is provided below for your reference.

Example: Stem of the question. [2]

Grade 5 Mathematics Reference Sheet

CONVERSIONS

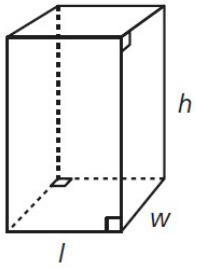
1 yard = 3 feet
1 mile = 5,280 feet
1 mile = 1,760 yards

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 liter = 1,000 milliliters

1 pound = 16 ounces
1 ton = 2,000 pounds
1 kilogram = 1,000 grams

FORMULAS AND FIGURES

Right Rectangular Prism



$V = l \times w \times h$
$V = B \times h$

1-Credit Constructed-Response Rubric

1 Credit	A 1-credit response is a **correct answer** to the question which indicates a thorough understanding of mathematical concepts and/or procedures.
0 Credits*	A 0-credit response is incorrect, irrelevant, or incoherent.

* 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).

2-Credit Constructed-Response Holistic Rubric

2 Credits	A 2-credit 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 • 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 Credit	A 1-credit response demonstrates only a partial understanding of the mathematical concepts and/or procedures in the task. This response • 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 Credits*	A 0-credit 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-Credit Constructed-Response Holistic Rubric

3 Credits	A 3-credit 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 • 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 Credits	A 2-credit response demonstrates a partial understanding of the mathematical concepts and/or procedures in the task. This response • 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 Credit	A 1-credit response demonstrates only a limited understanding of the mathematical concepts and/or procedures in the task. This response • 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 Credits*	A 0-credit 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).

2023 1-Credit Constructed-Response Mathematics Scoring Policies

1. The student is **not** required to show work for 1-credit constructed-response question, therefore, any work shown will **not** be scored. A clearly identified correct response should still receive full credit.
2. If the student clearly identifies a correct answer but fails to write that answer in the answer space, the student should still receive full credit.
3. If the student provides one legible response (and one response only), the rater should score the response, even if it has been crossed out.
4. If the student has written more than one response but has crossed some out, the rater should score only the response that has **not** been crossed out.
5. If the student provides more than one response but does not indicate which response is to be considered the correct response and none have been crossed out, the student shall not receive credit.
6. If the student does not provide the answer in the form as directed in the question, the student will not receive credit.
7. In questions requiring number sentences, the number sentences must be written horizontally.
8. When measuring angles with a protractor, there is a +/- 5 degrees deviation allowed of the true measure.
9. 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.

2023 2- and 3-Credit Constructed-Response Mathematics Scoring Policies

1. If a student shows the work in other than a designated "Show your work" or "Explain" area, that work should still be scored.
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 space, the student should still receive full credit.
3. If students are directed to show work or provide an explanation, a correct answer with **no** work shown or **no** explanation provided, receives **no** credit.
4. If students are **not** directed to show work, any work shown will **not** be scored. This applies to questions that do **not** ask for any work and questions that ask for work for one part and do **not** ask for work in another part.
5. If the student provides one legible response (and one response only), the rater should score the response, even if it has been crossed out.
6. If the student has written more than one response but has crossed some out, the rater should score only the response that has **not** been crossed out.
7. If the student provides more than one response, but does not indicate which response is to be considered the correct response and none have been crossed out, the student shall not receive full credit.
8. Trial-and-error responses are **not** subject to Scoring Policy #6 above, since crossing out is part of the trial-and-error process.
9. If a response shows repeated occurrences of the same conceptual error within a question, the conceptual error should **not** be considered more than once in gauging the demonstrated level of understanding.
10. In questions requiring number sentences, the number sentences must be written horizontally.
11. When measuring angles with a protractor, there is a +/- 5 degrees deviation allowed of the true measure.
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.

36

The heights, in inches, of four towers made from toothpicks are shown below.

- 33.1
- 33.2
- 29.3
- 33.3

Write a number sentence comparing the heights, in inches, of the two tallest towers. Be sure to include the symbol >, <, or = in your answer.

Answer _____

EXEMPLARY RESPONSE

36

The heights, in inches, of four towers made from toothpicks are shown below.

- 33.1
- 33.2
- 29.3
- 33.3

Write a number sentence comparing the heights, in inches, of the two tallest towers. Be sure to include the symbol >, <, or = in your answer.

$33.3 > 33.2$ *or* $33.2 < 33.3$

or $33.3 - 33.2 = 0.1$

or equivalent

Answer _____

GUIDE PAPER 1

36

The heights, in inches, of four towers made from toothpicks are shown below.

- 33.1
- 33.2
- 29.3
- 33.3

Write a number sentence comparing the heights, in inches, of the two tallest towers. Be sure to include the symbol >, <, or = in your answer.

Answer 33.3-33.2=00.1

Score Point 1 (out of 1 credit)

A correct answer is provided.

GUIDE PAPER 2

36

The heights, in inches, of four towers made from toothpicks are shown below.

- 33.1
- 33.2
- 29.3
- 33.3

Write a number sentence comparing the heights, in inches, of the two tallest towers. Be sure to include the symbol >, <, or = in your answer. [1]

29.3, 33.1, 33.2, 33.3

Answer 33.2 < 33.3.

Score Point 1 (out of 1 credit)

A correct answer is provided.

GUIDE PAPER 3

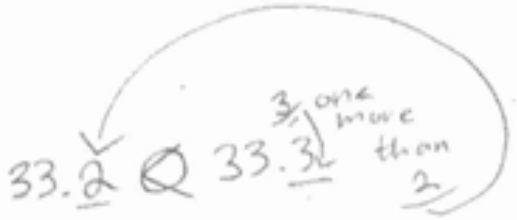
36

The heights, in inches, of four towers made from toothpicks are shown below.

- 33.1
- 33.2
- 29.3
- 33.3

two tallest towers

Write a number sentence comparing the heights, in inches, of the ~~two tallest towers~~. Be sure to include the symbol >, <, or = in your answer. [1]



So, 33.3 is greater than 33.2.

Answer 33.3

Score Point 0 (out of 1 credit)

An incorrect answer is provided.

37

Andre is using a 15-foot piece of ribbon for an art project. He cuts the ribbon into equal-sized pieces $\frac{1}{3}$ foot in length. Using all of the ribbon, how many pieces of ribbon does Andre cut?

Answer _____ pieces

EXEMPLARY RESPONSE

37

Andre is using a 15-foot piece of ribbon for an art project. He cuts the ribbon into equal-sized pieces $\frac{1}{3}$ foot in length. Using all of the ribbon, how many pieces of ribbon does Andre cut?

Answer *45 or equivalent* pieces

GUIDE PAPER 1

37

Andre is using a 15-foot piece of ribbon for an art project. He cuts the ribbon into equal-sized pieces $\frac{1}{3}$ foot in length. Using all of the ribbon, how many pieces of ribbon does Andre cut? [1]

3 6 9 12 15
1 2 3 4 5

$\frac{1}{3} \times 3 = \frac{3}{3} = 1$

$\frac{1}{3} \times 9 = \frac{9}{3} = 3$

$\frac{1}{3} \times 27 = \frac{27}{3} = 9$

$\frac{1}{3} \times 45 \quad \frac{45}{3} = 15\checkmark$

Answer 45 pieces

Score Point 1 (out of 1 credit)

A correct answer is provided.

GUIDE PAPER 2

37

Andre is using a 15-foot piece of ribbon for an art project. He cuts the ribbon into equal-sized pieces $\frac{1}{3}$ foot in length. Using all of the ribbon, how many pieces of ribbon does Andre cut?

$$15 \div \frac{1}{3} = \frac{15}{1} \times \frac{3}{1} = \frac{45}{1} = 45$$

Answer pieces

Score Point 1 (out of 1 credit)

A correct answer is provided.

GUIDE PAPER 3

37

Andre is using a 15-foot piece of ribbon for an art project. He cuts the ribbon into equal-sized pieces $\frac{1}{3}$ foot in length. Using all of the ribbon, how many pieces of ribbon does Andre cut?

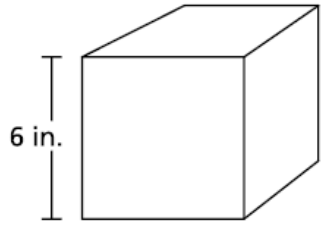
Answer $\frac{1}{45} = 45$ pieces

Score Point 0 (out of 1 credit)

An incorrect answer is provided.

38

What is the volume, in cubic inches, of the cube shown in the diagram below?

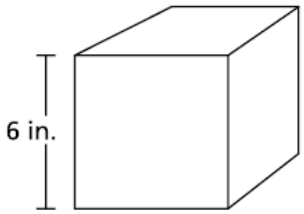


Answer _____ cubic inches

EXEMPLARY RESPONSE

38

What is the volume, in cubic inches, of the cube shown in the diagram below?

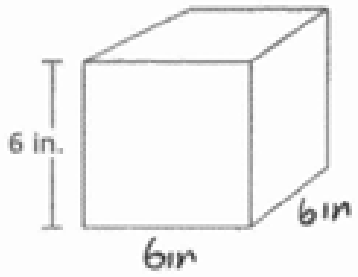


Answer 216 *or equivalent* cubic inches

GUIDE PAPER 1

38

What is the volume, in cubic inches, of the cube shown in the diagram below? [1]



6x6x6 =
36
x 6
216 cubic inches

Answer 216 cubic inches

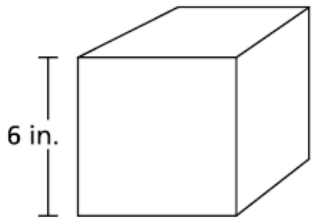
Score Point 1 (out of 1 credit)

A correct answer is provided.

GUIDE PAPER 2

38

What is the volume, in cubic inches, of the cube shown in the diagram below?



Answer 216 cm cubic inches

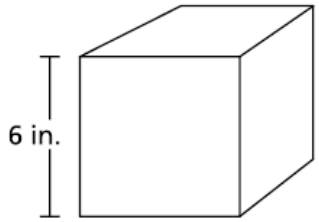
Score Point 1 (out of 1 credit)

A correct answer is provided.

GUIDE PAPER 3

38

What is the volume, in cubic inches, of the cube shown in the diagram below?



Answer $6 \times 6 \times 6 = 18$ cubic inches

Score Point 0 (out of 1 credit)

An incorrect answer is provided.

39

Josiah makes a total of 195 ounces of lemonade. He pours the lemonade into 16-ounce bottles until each bottle is full. What is the greatest number of bottles Josiah can fill completely with the lemonade?

Show your work.

Answer _____ bottles

EXEMPLARY RESPONSE

39

Josiah makes a total of 195 ounces of lemonade. He pours the lemonade into 16-ounce bottles until each bottle is full. What is the greatest number of bottles Josiah can fill completely with the lemonade?

Show your work.

$195 \div 16 = 12\ {}^{3}\!/_{16} = 12\text{R}3$

12 bottles filled completely

or other valid process

Answer 12 bottles

39

Josiah makes a total of 195 ounces of lemonade. He pours the lemonade into 16-ounce bottles until each bottle is full. What is the greatest number of bottles Josiah can fill completely with the lemonade?

Show your work.

195 ÷ 16 =? R3

Answer 12 bottles

Score Point 2 (out of 2 credits)

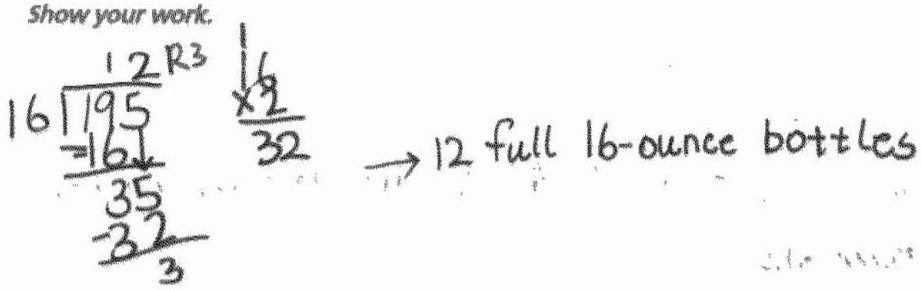
This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The number of bottles is correctly determined using division, the correct remainder is shown in the work, and the solution is correctly truncated to a whole number. This response contains sufficient work to show a thorough understanding.

GUIDE PAPER 2

39

Josiah makes a ~~total of 195 ounces~~ of lemonade. He pours the lemonade into 16-ounce bottles until each bottle is full. What is the greatest number of bottles Josiah can fill completely with the lemonade? [2]

Show your work.



Answer 12 bottles

Score Point 2 (out of 2 credits)

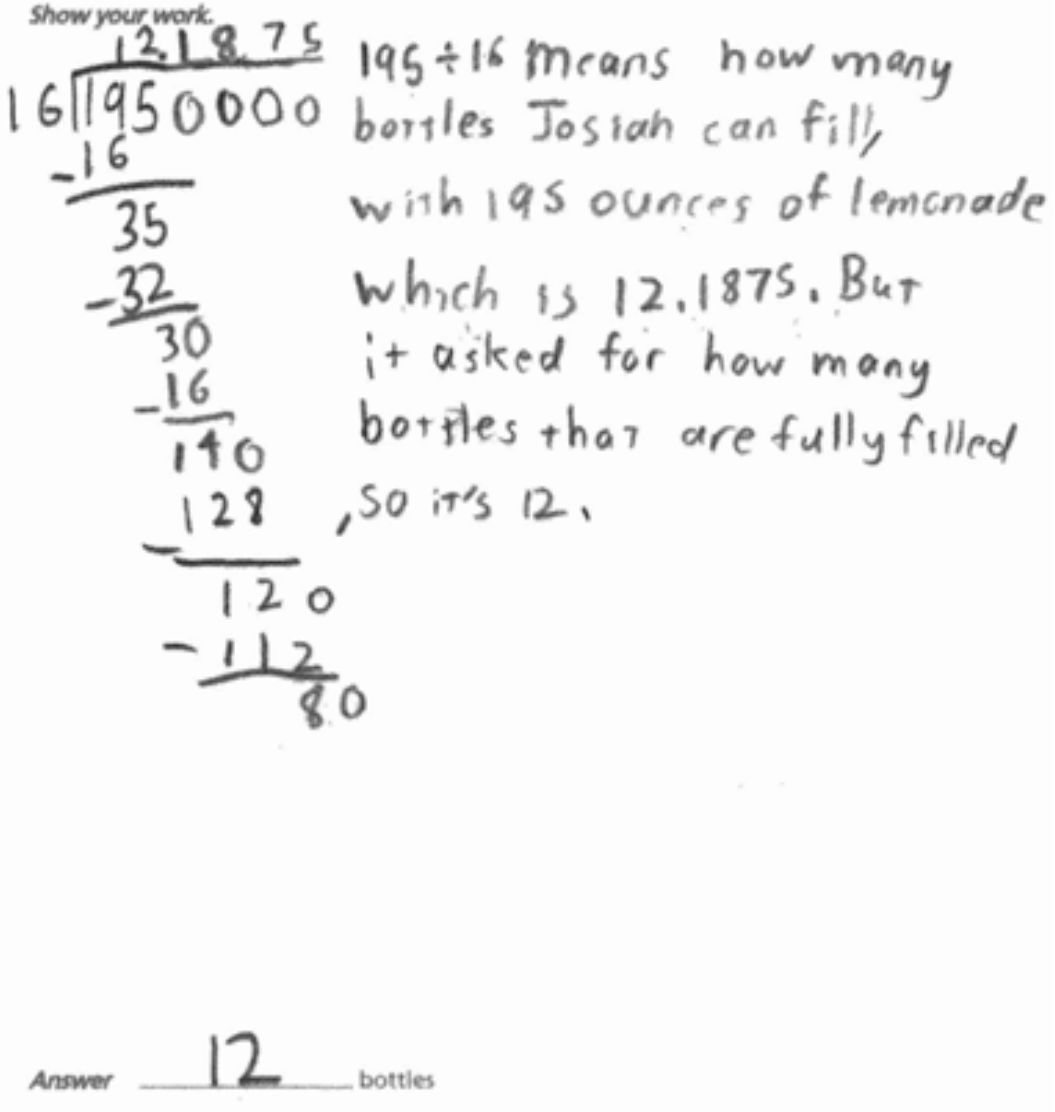
This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The number of bottles is correctly determined using division, and the solution is correctly truncated to a whole number. The response is complete and correct.

GUIDE PAPER 3

39

Josiah makes a total of 195 ounces of lemonade. He pours the lemonade into 16-ounce bottles until each bottle is full. What is the greatest number of bottles Josiah can fill completely with the lemonade? [2]

Show your work.



Answer 12 bottles

Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The number of bottles is correctly determined using division, and the solution is correctly truncated to a whole number. This response is complete and correct.

GUIDE PAPER 4

39

Josiah makes a total of 195 ounces of lemonade. He pours the lemonade into 16-ounce bottles until each bottle is full. What is the greatest number of bottles Josiah can fill completely with the lemonade?

Show your work.

$16 \times 12 = 192$ this examplifies how many bottle he can use wich are 12.

Answer 12 bottles

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Although the number of bottles is correctly determined, it is not clear from the work why 12 is the solution because the remainder is not calculated or addressed. The trial-and-error process only shows one attempt and is insufficient to show a thorough understanding. This response contains the correct solution, but the required work is incomplete.

GUIDE PAPER 5

39

Josiah makes a total of 195 ounces of lemonade. He pours the lemonade into 16-ounce bottles until each bottle is full. What is the greatest number of bottles Josiah can fill completely with the lemonade? [2]

Show your work.

1
16
x 2
32

12
16 | 195
16
35
32
3

Answer 12 r 3 bottles

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Although a correct process is used to determine the number of bottles, the answer is not truncated, and an incorrect solution is provided. This response contains an incorrect solution but applies a mathematically appropriate process.

GUIDE PAPER 6

39

Josiah makes a total of 195 ounces of lemonade. He pours the lemonade into 16-ounce bottles until each bottle is full. What is the greatest number of bottles Josiah can fill completely with the lemonade?

Show your work.

195 ÷ 16 = 12 remainder 2

Answer 12 bottles

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Although a correct process is used to determine the number of bottles, and a correct solution is provided, the work contains a calculation error which detracts from a full understanding. This response correctly addresses only some elements of the task.

GUIDE PAPER 7

39

Josiah makes a total of 195 ounces of lemonade. He pours the lemonade into 16-ounce bottles until each bottle is full. What is the greatest number of bottles Josiah can fill completely with the lemonade?

Show your work.

$195 \div 16 = 12$

$12 \div 6 = 2$

Answer 2 bottles

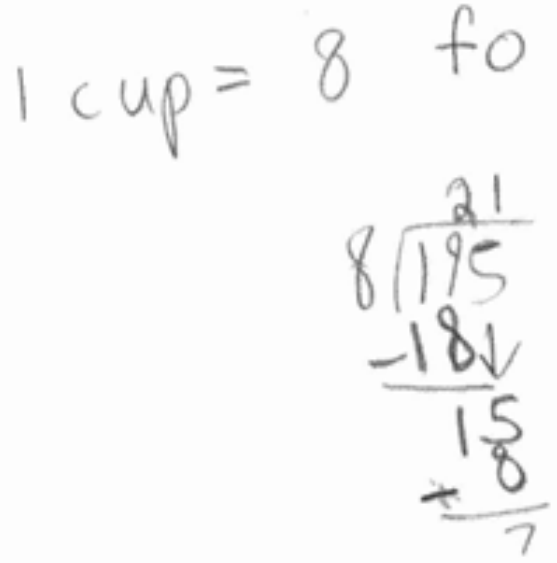
Score Point 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. Although the work contains a correct process, the fractional part of the number is missing in the first equation, which makes the first equation incorrect, and the second equation is not relevant to the task. Holistically, this response is insufficient to show any understanding.

39

Josiah makes a total of 195 ounces of lemonade. He pours the lemonade into 16-ounce bottles until each bottle is full. What is the greatest number of bottles Josiah can fill completely with the lemonade? [2]

Show your work.



Answer 7 bottles

Score Point 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. The total amount of lemonade is inappropriately divided by 8, the division is incorrectly performed, and the remainder is inappropriately provided as the solution. This response is incorrect and shows no overall understanding.

40

A multiplication problem is shown below.

$$42 \times \frac{5}{8}$$

A student claims that the product will be greater than 42. Is the student's claim correct? Explain without calculating the product.

Explain how you know your answer is correct.

EXEMPLARY RESPONSE

40

A multiplication problem is shown below.

$$42 \times \frac{5}{8}$$

A student claims that the product will be greater than 42. Is the student's claim correct? Explain without calculating the product.

Explain how you know your answer is correct.

No, the student is not correct because multiplying 42 by a fraction less than 1 results in a product smaller than 42.

or

No, the student is not correct.

$42 \times 1 = 42$. Since $\frac{5}{8}$ is less than 1, then the product of 42 and $\frac{5}{8}$ would be less than 42.

or other valid explanation

40

A multiplication problem is shown below.

$$42 \times \frac{5}{8}$$

A student claims that the product will be greater than 42. Is the student's claim correct? Explain without calculating the product. [2]

Explain how you know your answer is correct.

The student's claim is not correct because a number has to be multiplied by 1 to get that same number. With a denominator of 8, the numerator would have to be 8 to equal 42 when multiplied. However, since 5 is less than 8, $\frac{5}{8}$ is less than 1, and therefore $42 \times \frac{5}{8}$ would be less than 42.

Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The student's claim is correctly identified, and a correct explanation is provided comparing $\frac{5}{8}$ and 1 and the corresponding products to support the claim. This explanation is complete and correct.

GUIDE PAPER 2

40

A multiplication problem is shown below.

$$42 \times \frac{5}{8}$$

A student claims that the product will be greater than 42. Is the student's claim correct? Explain without calculating the product.

Explain how you know your answer is correct.

I know that the product is less than 42 because if something is multiplied by one, the product is the factor. If something is multiplied by LESS than one, the product is less than the factor, because the other factor is less than one, a fraction is less than one.

Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The student's claim is correctly identified, and a correct explanation is provided comparing ⅝ and 1 and the corresponding products to support the claim. This explanation is sufficient to show a thorough understanding.

GUIDE PAPER 3

40

A multiplication problem is shown below.

$$42 \times \frac{5}{8}$$

A student claims that the product will be greater than 42. Is the student's claim correct? Explain without calculating the product.

Explain how you know your answer is correct.

The student is incorrect because if you multiply anything thats less than one the whole would be less than its earlier form.

Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The student's claim is correctly identified, and a correct explanation is provided comparing $\frac{5}{8}$ and 1 to support the claim. This explanation is sufficient to show a thorough understanding.

GUIDE PAPER 4

40

A multiplication problem is shown below.

$$42 \times \frac{5}{8}$$

A student claims that the product will be greater than 42. Is the student's claim correct? Explain without calculating the product. [2]

Explain how you know your answer is correct.

No, because 5 is less than 8, so it's less than 1. 1 would make it equal, the divisor has to be more than 1 for the product to be more.

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The student's claim is correctly identified. The explanation suggests some understanding of why the product will be less than 42; however, the comparisons are not clearly stated, and an incorrect term "*divisor*" is used when explaining the product. This response correctly addresses only some elements of the task.

GUIDE PAPER 5

40

A multiplication problem is shown below.

$$42 \times \frac{5}{8}$$

A student claims that the product will be greater than 42. Is the student's claim correct? Explain without calculating the product.

Explain how you know your answer is correct.

The student's claim is not correct because when you multiply a whole number by a fraction the result is less than the whole number.

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The student's claim is correctly identified. The explanation suggests some understanding of why the product will be less than 42; however, the explanation lacks clarity because the fraction is not stated to be less than 1. This response correctly addresses only some elements of the task.

GUIDE PAPER 6

40

A multiplication problem is shown below.

$$42 \times \frac{5}{8}$$

A student claims that the product will be greater than 42. Is the student's claim correct? Explain without calculating the product. [2]

Explain how you know your answer is correct.

When you multiply 42x5, you'll definitly get a numbr greater than 42. But, you'll have to divide it by 8- making it less.

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The student's claim is correctly identified. The explanation suggests some understanding of why the product will be less than 42; however, $\frac{5}{8}$ and 1 are not compared, and it is not clear from the explanation why the product is less than 42. This response correctly addresses only some elements of the task.

GUIDE PAPER 7

40

A multiplication problem is shown below.

$$42 \times \frac{5}{8}$$

A student claims that the product will be greater than 42. Is the student's claim correct? Explain without calculating the product.

Explain how you know your answer is correct.

$$\frac{42}{1} \times \frac{5}{8} = \frac{210}{8}$$

Score Point 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. The student's claim is not identified as incorrect, and no explanation is provided without calculating the product. This response is irrelevant to the task and shows no overall understanding.

40

A multiplication problem is shown below.

$$42 \times \frac{5}{8}$$

A student claims that the product will be greater than 42. Is the student's claim correct? Explain without calculating the product. [2]

Explain how you know your answer is correct.

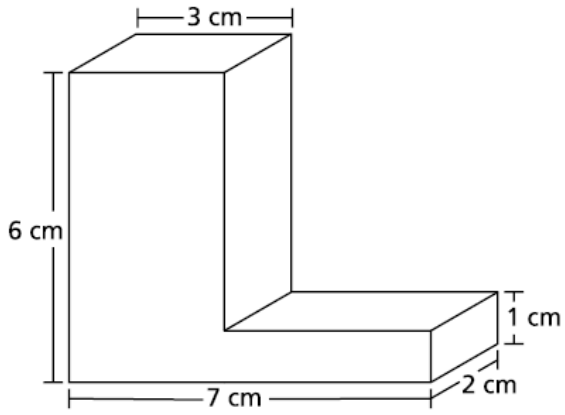
Without calculating the product, I think he is correct. If we multiply all of this, it will get a big number greater then 42. When you multiply, the number gets bigger.

Score Point 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. The student's claim is incorrectly identified, and an incorrect explanation is provided. Holistically, this explanation shows no overall understanding.

41

A diagram of a 3-dimensional figure is shown below.



What is the volume, in cubic centimeters, of the figure?

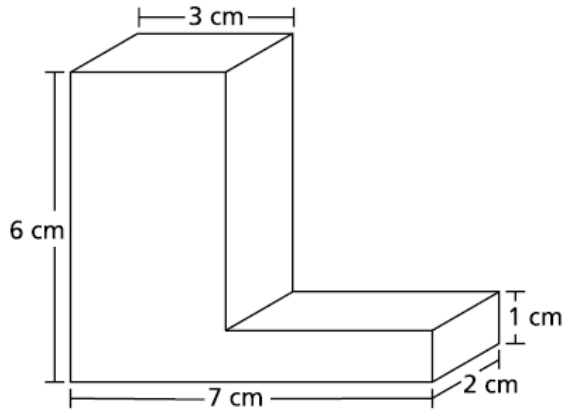
Show your work.

Answer _____ cubic centimeters

EXEMPLARY RESPONSE

41

A diagram of a 3-dimensional figure is shown below.



What is the volume, in cubic centimeters, of the figure?

Show your work.

$6 \times 3 \times 2 = 18 \times 2 = 36$

$(7 - 3) \times 2 \times 1 = 4 \times 2 \times 1 = 8$

$36 + 8 = 44$ cubic centimeters

or

$(6 - 1) \times 3 \times 2 = 5 \times 3 \times 2 = 30$

$7 \times 2 \times 1 = 14$

$30 + 14 = 44$ cubic centimeters

or

$6 \times 7 \times 2 = 84$

$(7 - 3) \times (6 - 1) \times 2 = 4 \times 5 \times 2 = 40$

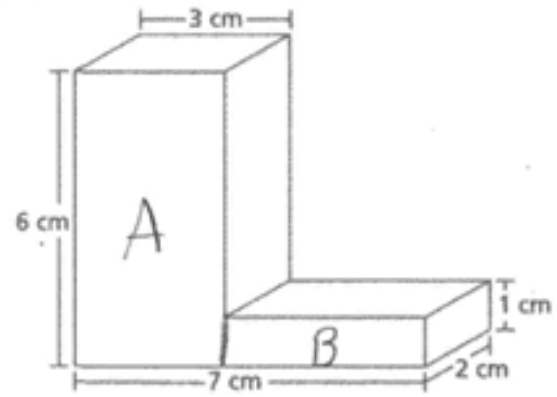
$84 - 40 = 44$ cubic centimeters

or other valid process

Answer 44 cubic centimeters

41

A diagram of a 3-dimensional figure is shown below.



What is the volume, in cubic centimeters, of the figure? [2]

Show your work.

(A)

$V = L \times W \times H$

$V = 3 \times 2 \times 6$

$3 \times 12 = 36$

36 cubic cm

(B)

$V = L \times W \times H$

$V = 4 \times 2 \times 1$

$4 \times 2 = 8$

8 cubic cm

$$\begin{array}{r} {\scriptstyle 1} \\ 36 \\ +\ 8 \\ \hline 44 \end{array}$$

Answer 44 cubic centimeters

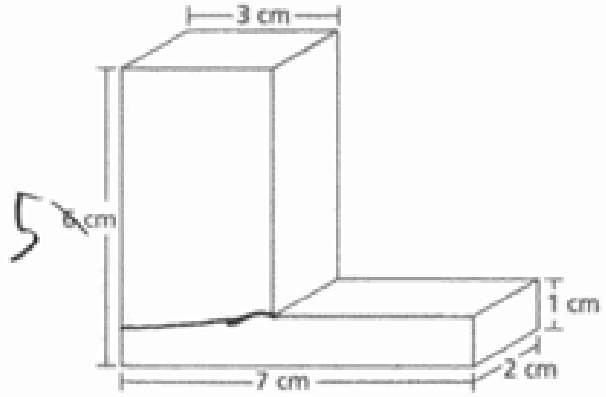
Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The figure is split into two parts. The volume of each part and the total volume are correctly determined using sound procedures. This response is complete and correct.

GUIDE PAPER 2

41

A diagram of a 3-dimensional figure is shown below.



What is the volume, in cubic centimeters, of the figure? [2]

Show your work.

5x3=15x2=30cm
+7x2=14x1=14
44cm

Answer 44 cubic centimeters

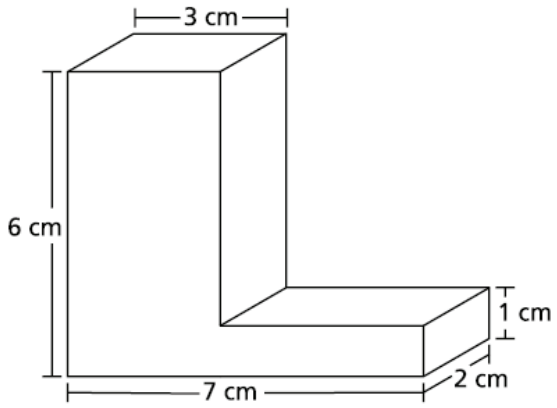
Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The figure is split into two parts. The volume of each part and the total volume are correctly determined using sound procedures. Incorrect units in the work do not detract from the demonstration of a thorough understanding. This response contains sufficient work to show a thorough understanding.

GUIDE PAPER 3

41

A diagram of a 3-dimensional figure is shown below.



What is the volume, in cubic centimeters, of the figure?

Show your work.

v1 = l x w x h v2 = l x w x h

v1 = 7 x 2 x1 v2 = 3 x 2 x 5 Total
volume = 44cm

v1 = 14 v2 = 30

Answer _____ cubic centimeters

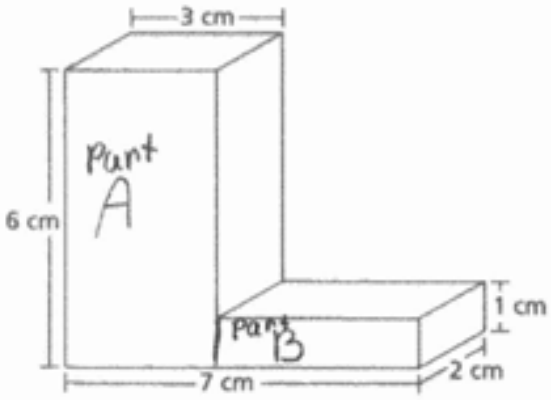
Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The figure is split into two parts. The volume of each part and the total volume are correctly determined using sound procedures. Although the last step of adding the two volumes is not shown and an incorrect unit is referenced, the response contains sufficient work to show a thorough understanding. Per Scoring Policy #2 for 2- and 3-credit responses, a clearly identified correct answer in the work should receive full credit.

GUIDE PAPER 4

41

A diagram of a 3-dimensional figure is shown below.



What is the volume, in cubic centimeters, of the figure? [2]

Show your work.

A

3X6X3=54cm

B

4X2X1=8cm

54
+ 8
62

Answer 62 cubic centimeters

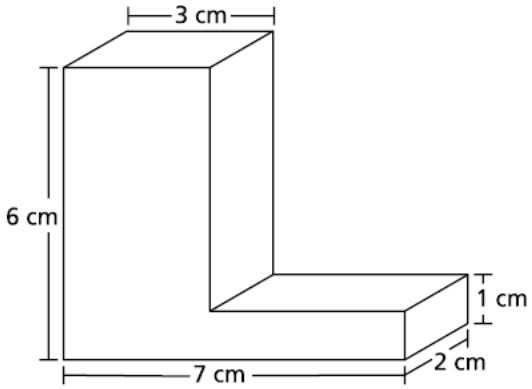
Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The figure is split into two parts. The volume of part B is correctly determined; however, an incorrect dimension of 3 instead of 2 is used when calculating the volume of part A. The two volumes are correctly added to determine the solution. This response correctly addresses only some elements of the task.

GUIDE PAPER 5

41

A diagram of a 3-dimensional figure is shown below.



What is the volume, in cubic centimeters, of the figure?

Show your work.

A	B
L = 3cm	L = 4cm
W = 2cm	W = 2cm
H = 6cm	H = 1cm
3 × 2 = 6	4 × 2 = 8
6 × 6 = 36	8 × 1 = 8

Volume for A = 36cubic centimeters
Volume for B = 8cubic centimeters
36 × 8 = 288 cubic centimeters

Answer The volume of this figure is 288cubic centimeters cubic centimeters

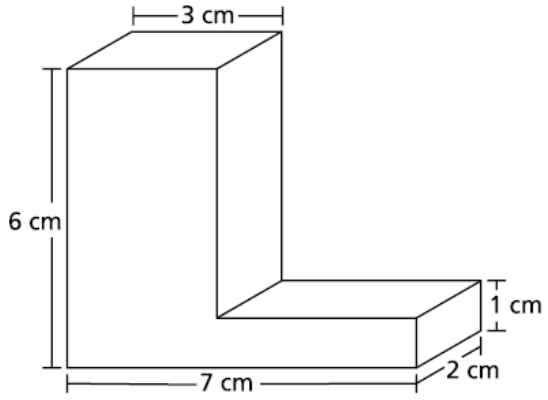
Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The figure is split into two parts. The volume of each part is correctly determined using sound procedures; however, the two volumes are inappropriately multiplied when determining the total volume. This response correctly addresses only some elements of the task.

GUIDE PAPER 6

41

A diagram of a 3-dimensional figure is shown below.



What is the volume, in cubic centimeters, of the figure?

Show your work.

prism A 36 cubic centi. Prism B 8 cubic centi.

Answer 44 cubic centimeters

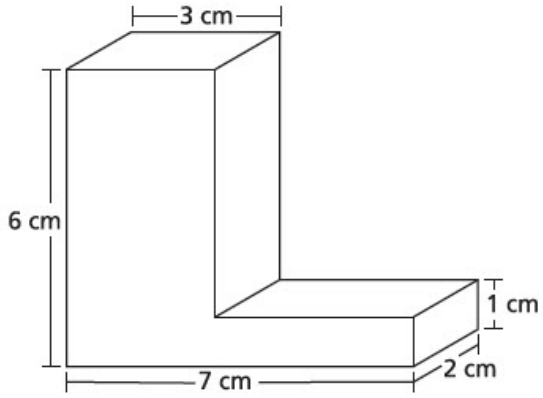
Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Although the volumes of two parts of the figure and the total volume are correctly determined, the process to calculate the volume is not shown, and it is not clear how the volumes are obtained. This response contains the correct solution, but the required work is incomplete.

GUIDE PAPER 7

41

A diagram of a 3-dimensional figure is shown below.



What is the volume, in cubic centimeters, of the figure?

Show your work.

$= 44$

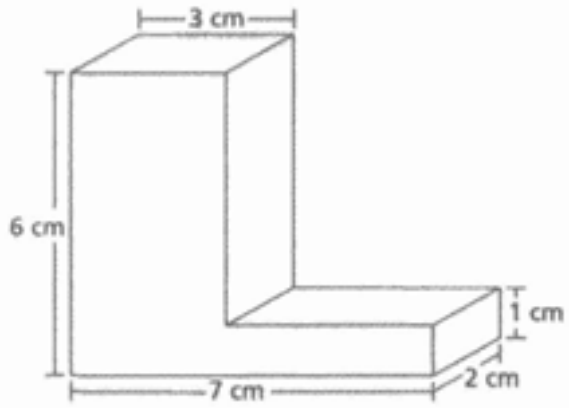
Answer $44\ cm^3$ cubic centimeters

Score Point 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. The correct solution is provided with no work. Per Scoring Policy #3 for 2- and 3-credit responses, this response receives no credit.

41

A diagram of a 3-dimensional figure is shown below.



What is the volume, in cubic centimeters, of the figure? [2]

Show your work.

3X7X6
21X6
21
6
126

Answer 126 cubic centimeters

Score Point 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. The volume of an irrelevant figure is calculated and inappropriately provided as the solution. Holistically, this response shows no overall understanding.

42

A student writes 67.203 in expanded form as shown below.

$$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$$

The student made an error. Where did the student make an error? As part of your answer, write the number in the correct expanded form.

Explain your answer.

EXEMPLARY RESPONSE

42

A student writes 67.203 in expanded form as shown below.

$$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$$

The student made an error. Where did the student make an error? As part of your answer, write the number in the correct expanded form.

Explain your answer.

The student multiplied 3 by $1/100$ instead of $1/1000$.

The correct expanded form is:

$(6 \times 10) + (7 \times 1) + (2 \times 1/10) + (3 \times 1/1000)$.

or

The student put the digit 3 in the hundredths place instead of in the thousandths place.

The correct expanded form is:

$(6 \times 10) + (7 \times 1) + (2 \times 1/10) + (3 \times 1/1000)$.

or other valid explanation

42

A student writes 67.203 in expanded form as shown below.

$$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$$

The student made an error. Where did the student make an error? As part of your answer, write the number in the correct expanded form.

Explain your answer.

The student put $(3 \times \frac{1}{100})$ instead of $(3 \times \frac{1}{1000})$ and that changes the place value of the 3.
If the student submits the answer in that expanded form then it would be 67.23 not 67.203. If the student wanted 67.203 then they would have to do $(6 \times 10) + (7 \times 1) + (2 \times \frac{1}{10}) + (3 \times \frac{1}{1000})$. If they wanted a 0 in the hundreths place then they would have to go straight to $\frac{1}{1000}$ and skip over $\frac{1}{100}$.

Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The error is correctly identified and explained using place values, and the correct expanded form of the number is written. This explanation is complete and correct.

GUIDE PAPER 2

42

A student writes 67.203 in expanded form as shown below.

$$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$$

The student made an error. Where did the student make an error? As part of your answer, write the number in the correct expanded form. [2]

Explain your answer.

The error is that they put 3 in the hundredth place, it should be the thousandths place. The correct answer is $(6\times10)+(7\times1)+(2\times\frac{1}{10})+(3\times\frac{1}{1,000})$

Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The error is correctly identified and explained using place values, and the correct expanded form of the number is written. This explanation is complete and correct.

GUIDE PAPER 3

42

A student writes 67.203 in expanded form as shown below.

$$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$$

The student made an error. Where did the student make an error? As part of your answer, write the number in the correct expanded form. [2]

Explain your answer.

The students error was that he did $(3 \times \frac{1}{100})$ when it is to like this $(3 \times \frac{1}{1000})$. $(6 \times 10) + (7 \times 1) + (2 \times \frac{1}{10} + (3 \times \frac{1}{1000}) = 67,203$

Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The error is correctly identified and explained, and the correct expanded form of the number is written. This explanation is complete and correct.

GUIDE PAPER 4

42

A student writes 67.203 in expanded form as shown below.

$$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$$

The student made an error. Where did the student make an error? As part of your answer, write the number in the correct expanded form.

Explain your answer.

he messed up when he did $3 \times \frac{1}{100}$ but should of done was $3 \times \frac{1}{1000}$

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The error is correctly identified and explained; however, the correct expanded form of the number is not written. This response correctly addresses only some elements of the task.

GUIDE PAPER 5

42

A student writes 67.203 in expanded form as shown below.

$$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$$

The student made an error. Where did the student make an error? As part of your answer, write the number in the correct expanded form. [2]

Explain your answer.

$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{1000}\right)$

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct expanded form of the number is written with the error corrected; however, the error is not sufficiently identified and explained. This response correctly addresses only some elements of the task.

GUIDE PAPER 6

42

A student writes 67.203 in expanded form as shown below.

$$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$$

The student made an error. Where did the student make an error? As part of your answer, write the number in the correct expanded form.

Explain your answer.

Its supposed to be $(3 \times \frac{1}{1000})$

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The error is corrected; however, the error is not sufficiently explained, and the correct expanded form of the number is not written. This response correctly addresses only some elements of the task.

GUIDE PAPER 7

42

A student writes 67.203 in expanded form as shown below.

$$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$$

The student made an error. Where did the student make an error? As part of your answer, write the number in the correct expanded form.

Explain your answer.

The student made in error when they did (3 times $\frac{1}{100}$)

(6 times 10)+(7 times 1)+(2 times $\frac{1}{10}$)+ (0) +(3 times $\frac{1}{100}$)

Score Point 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. Although the location of an error is correctly identified, the error is not corrected or explained, and an incorrect expanded form of the number is written. Holistically, this explanation is insufficient to show any understanding.

42

A student writes 67.203 in expanded form as shown below.

$$(6 \times 10) + (7 \times 1) + \left(2 \times \frac{1}{10}\right) + \left(3 \times \frac{1}{100}\right)$$

The student made an error. Where did the student make an error? As part of your answer, write the number in the correct expanded form. [2]

Explain your answer.

$60 + 7 + \frac{2}{10} + \frac{3}{100} = 67\frac{23}{100}$

Score Point 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. The error is not explained, and the correct expanded form of the number is not written. This response is irrelevant to the task.

43

Adam opens a $\frac{1}{2}$-pound can of tuna. He uses all the tuna to feed his cats. He puts an equal amount of tuna in 4 containers for his cats. How much tuna, in pounds, is in each container?

Show your work.

Answer _____ pound(s)

EXEMPLARY RESPONSE

43

Adam opens a $\frac{1}{2}$-pound can of tuna. He uses all the tuna to feed his cats. He puts an equal amount of tuna in 4 containers for his cats. How much tuna, in pounds, is in each container?

Show your work.

$\frac{1}{2} \div 4 =$

$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$ pound of tuna

or

$16 \div 2 = 8$ oz per can

$8 \div 4 = 2$ oz per container

$\frac{2}{16} = \frac{1}{8}$ pound of tuna

or other valid process

Answer $\frac{1}{8}$ *or equivalent* pound(s)

43

Adam opens a $\frac{1}{2}$-pound can of tuna. He uses all the tuna to feed his cats. He puts an equal amount of tuna in 4 containers for his cats. How much tuna, in pounds, is in each container? [2]

Show your work.

1 pound = 16 oz.

8
2⟌16

8 oz
2
4⟌8

Answer 2/16 pound(s)

Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The amount of tuna per container, in ounces, is correctly determined using sound procedures, and the solution is correctly converted to pounds. This response is complete and correct.

GUIDE PAPER 2

43

Adam opens a $\frac{1}{2}$-pound can of tuna. He uses all the tuna to feed his cats. He puts an equal amount of tuna in 4 containers for his cats. How much tuna, in pounds, is in each container? [2]

Show your work.

$\frac{1}{8}$ because

$\frac{1}{8} \times 4 = \frac{4}{8} = \frac{1}{2}$

Answer $\frac{1}{8}$ pound(s)

Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The fraction ½ is correctly converted to ⁴⁄₈, and a correct multiplication equation is written to show four ⅛-pound servings per 1 can of tuna. The solution is correctly determined from the written equation. This response contains sufficient work to show a thorough understanding.

GUIDE PAPER 3

43

Adam opens a $\frac{1}{2}$-pound can of tuna. He uses all the tuna to feed his cats. He puts an equal amount of tuna in 4 containers for his cats. How much tuna, in pounds, is in each container?

Show your work.

$\frac{1}{2} \div 4 = \frac{1}{8}$

Answer $\frac{1}{8}$ pound(s)

Score Point 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The amount of tuna per container is correctly determined using division. This response contains sufficient work to show a thorough understanding.

GUIDE PAPER 4

43

Adam opens a $\frac{1}{2}$-pound can of tuna. He uses all the tuna to feed his cats. He puts an equal amount of tuna in 4 containers for his cats. How much tuna, in pounds, is in each container?

Show your work.

$\frac{1}{2} \div 4 =$

$\frac{1}{2} \times \frac{1}{4} = \frac{1}{8}$ or 8

Answer 8 pound(s)

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct process is written to determine the amount of tuna per container, and the work contains the correct answer ⅛; however, the reciprocal of this answer is inappropriately provided as a solution. This response correctly addresses only some elements of the task.

GUIDE PAPER 5

43

Adam opens a $\frac{1}{2}$-pound can of tuna. He uses all the tuna to feed his cats. He puts an equal amount of tuna in 4 containers for his cats. How much tuna, in pounds, is in each container?

Show your work.

$2 \times 4 = 8$, so $\frac{1}{8}$ of a pound is in one container.

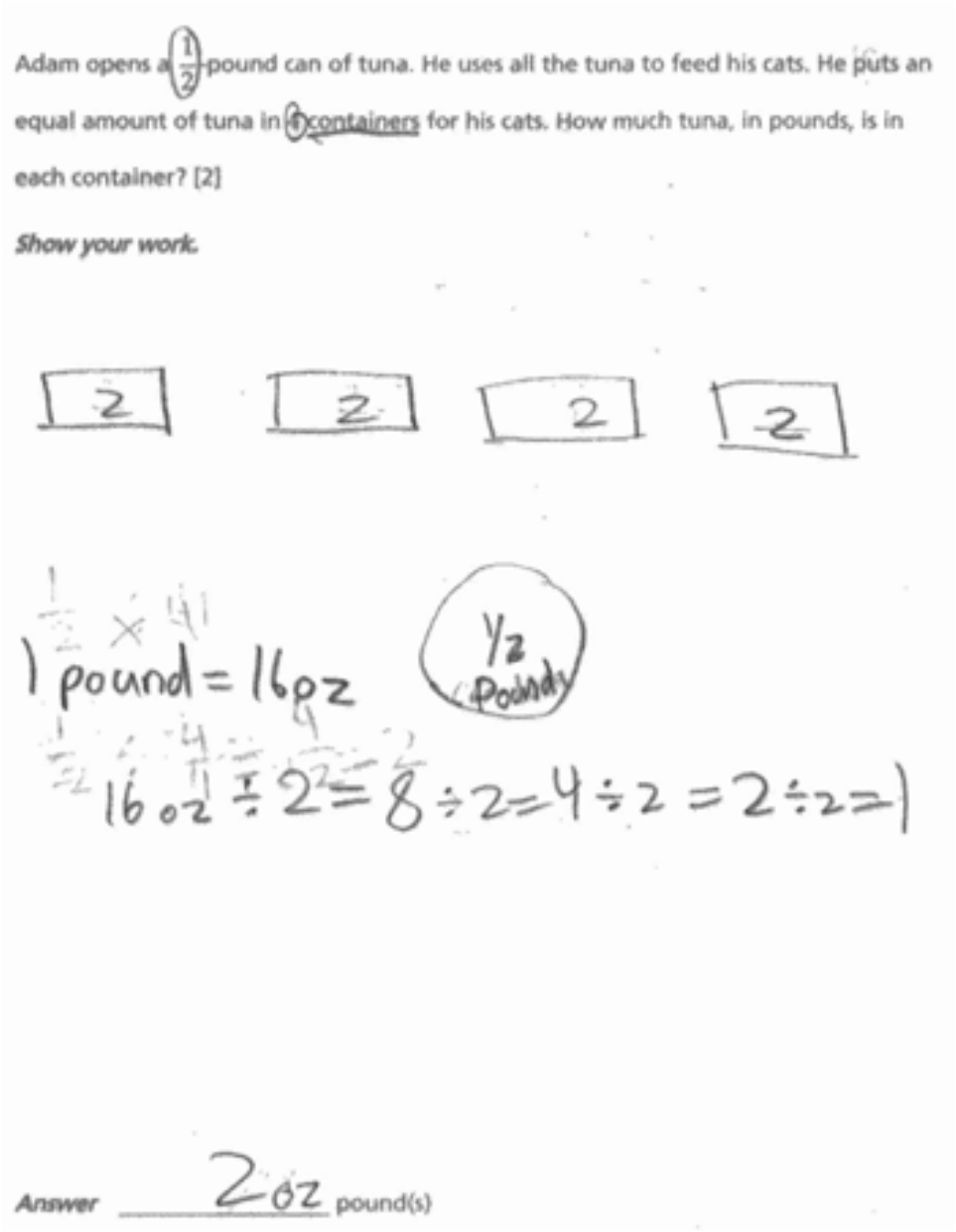
Answer $\frac{1}{8}$ pound(s)

Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Although the amount of tuna per container is correctly determined, it is not clear whether the 8 represents the number of equal parts or the number of ounces per can, and the step from 8 to ⅛ is not explained. This response contains a correct solution, but the required work is incomplete.

GUIDE PAPER 6

43



Score Point 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The amount of tuna per container, in ounces, is correctly determined; however, the solution is not converted to pounds. This response correctly addresses only some elements of the task.

GUIDE PAPER 7

43

Adam opens a $\frac{1}{2}$-pound can of tuna. He uses all the tuna to feed his cats. He puts an equal amount of tuna in 4 containers for his cats. How much tuna, in pounds, is in each container?

Show your work.

1/2x1/2x1/2x1/2=1/8

Answer 1/8 pound(s)

Score Point 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. The work shows an incorrect procedure to obtain a correct solution. This response is incorrect and shows no overall understanding.

43

Adam opens a $\frac{1}{2}$-pound can of tuna. He uses all the tuna to feed his cats. He puts an equal amount of tuna in 4 containers for his cats. How much tuna, in pounds, is in each container? [2]

Show your work.

1
1/8

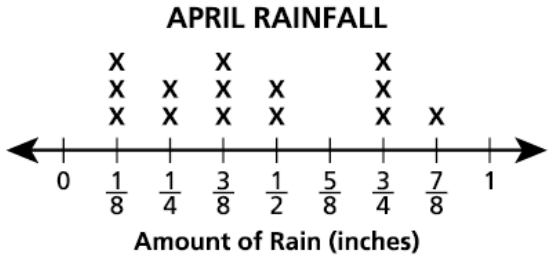
Answer _____ pound(s)

Score Point 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. The correct solution is provided with no work. Per Scoring Policy #3 for 2- and 3-credit responses, this response receives no credit.

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

Answer _____ inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April?

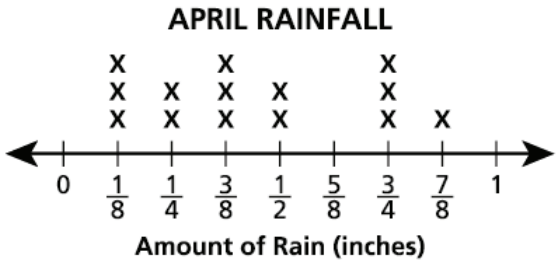
Show your work.

Answer _____ inches

EXEMPLARY RESPONSE

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

$3 \times 1/8 = 3/8$

$2 \times 1/4 = 2 \times 2/8 = 2/4 = 4/8 = 1/2$

$3 \times 3/8 = 9/8 = 1\,1/8$

$2 \times 1/2 = 2 \times 4/8 = 8/8 = 1$

$3 \times 3/4 = 3 \times 6/8 = 9/4 = 18/8 = 2\,2/8 = 2\,1/4$

$1 \times 7/8 = 7/8$

$3/8 + 4/8 + 9/8 + 8/8 + 18/8 + 7/8 = 49/8 = 6\,1/8$

or other valid process

Answer *49/8 or 6 1/8 or equivalent* inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April?

Show your work.

$8\,1/4 - 6\,1/8 =$

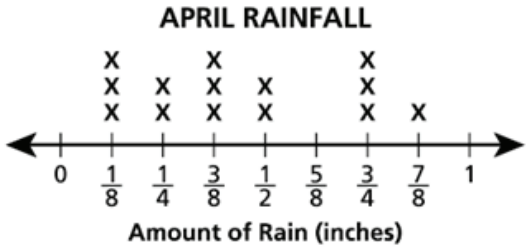
$8\,2/8 - 6\,1/8 = 2\,1/8$

or other valid process

Answer *2 1/8 or equivalent* inches

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

Equation: $(\frac{1}{8} \times 3) + (\frac{1}{4} \times 2) + (\frac{3}{8} \times 3) + (\frac{1}{2} \times 2) + (\frac{3}{4} \times 3) + (\frac{7}{8} \times 1) = r$

$\frac{3}{8} + \frac{4}{8} + 1\frac{1}{8} + 1 + 2\frac{2}{8} + \frac{7}{8} = 6\frac{1}{8}$

Answer $6\frac{1}{8}$ inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April?

Show your work.

Equation (change $\frac{1}{4}$ to $\frac{2}{8}$) $8\frac{2}{8} - 6\frac{1}{8} = p$

$8 - 6 = 2$, $\frac{2}{8} - \frac{1}{8} = \frac{1}{8}$, so the answer is $2\frac{1}{8}$

Answer $2\frac{1}{8}$ inches

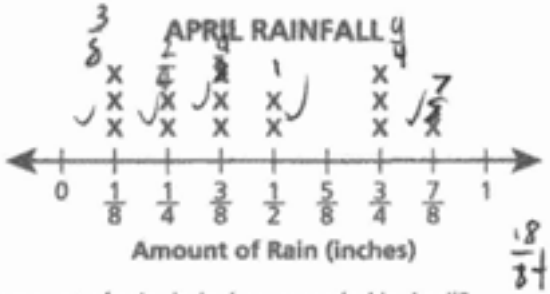
Score Point 3 (out of 3 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total amount of rain is correctly calculated by adding the recorded amounts of rain, and the difference in total rainfall between the two months is correctly determined. This response is complete and correct.

GUIDE PAPER 2

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

Answer 6 1/8 inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April? [3]

Show your work.

Answer 2 1/8 inches

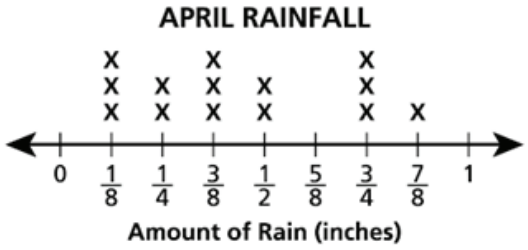
Score Point 3 (out of 3 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total amount of rain is correctly calculated by adding the recorded amounts of rain, and the difference in total rainfall between the two months is correctly determined. Per Scoring Policy #1 for 2- and 3-credit responses, the work shown in other than a designated "Show your work" area should still be scored. This response is complete and correct.

GUIDE PAPER 3

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

(3x1/8) + (2x2/8) + (3x3/8) +(2x4/8) + (3x6/8) + (1x7/8)

Answer $6\frac{1}{8}$ inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April?

Show your work.

$8\frac{2}{8} - 6\frac{1}{8} = 2\frac{1}{8}$

Answer $2\frac{1}{8}$ inches

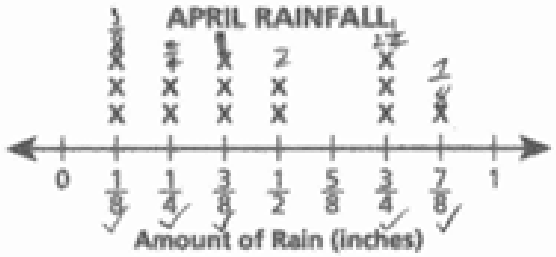
Score Point 3 (out of 3 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total amount of rain is correctly calculated by adding the recorded amounts of rain, and the difference in total rainfall between the two months is correctly determined. This response contains sufficient work to show a thorough understanding.

GUIDE PAPER 4

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

$\frac{9}{8}+\frac{3}{8}=\frac{12}{8}=1\frac{4}{8}$ $2\frac{1}{4}+\frac{3}{4}=2\frac{3}{4}\times2=2\frac{6}{8}$

$1\frac{4}{8}+\frac{7}{8}$ $1\frac{11}{8}$ $=2\frac{3}{8}+2\frac{6}{8}=4\frac{9}{8}=5\frac{1}{8}-12=7\frac{1}{8}$

Answer $7\frac{1}{8}$ inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April? [3]

Show your work.

$8\frac{1\times2}{4\times2}=8\frac{2}{8}$

$-7\frac{1}{8}$

$1\frac{1}{8}$

Answer $1\frac{1}{8}$ inches

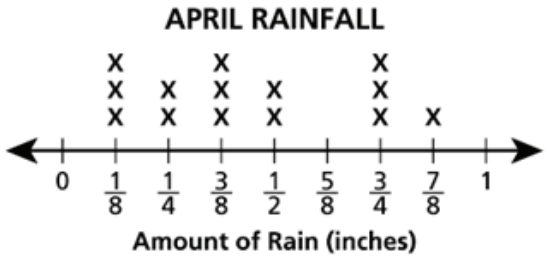
Score Point 2 (out of 3 credits)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. The total amount of rain is calculated using the correct process; however, 2 instead of 1 is added to 5⅛, resulting in an incorrect total. The total rainfall amounts are correctly subtracted to determine the difference in rainfall. This response reflects some minor misunderstanding of the underlying mathematical concepts and procedures.

GUIDE PAPER 5

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

1/8x1/3=3/8
2/8x2/1=4/8
3/8x3/1=9/8=1 and 1/8
4/8x2/1=1
6/8x3/1=18/8=2 and 2/8
7/8x1/1=7/8
3/8+4/8+1 and 1/8+1+2 and 2/8+7/8=6 and 1/8

Answer 6 and 1/8 inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April?

Show your work.

6 and 1/8-8 and 2/8=2 and 1/8 so the difference beetween the two is 2 and 1/8

Answer the diference between the two is 2 and 1/8 inches

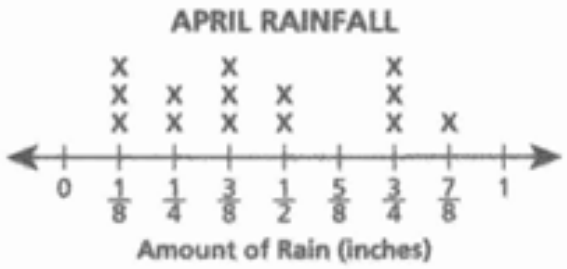
Score Point 2 (out of 3 credits)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. The total amount of rain is correctly calculated by adding the recorded amounts of rain. Although the difference in total rainfall is correctly determined, the subtraction is written in an incorrect order which detracts from a thorough understanding. This response appropriately addresses most, but not all, aspects of the task.

GUIDE PAPER 6

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

$\frac{3}{8}+\frac{4}{8}+\frac{9}{8}+\frac{8}{6}+\frac{7}{8}+\frac{18}{8}=$

Answer $3\frac{1}{8}$ inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April? [3]

Show your work.

$8\frac{2}{8}-3\frac{1}{8}=5\frac{1}{8}$

Answer $5\frac{1}{8}$ inches

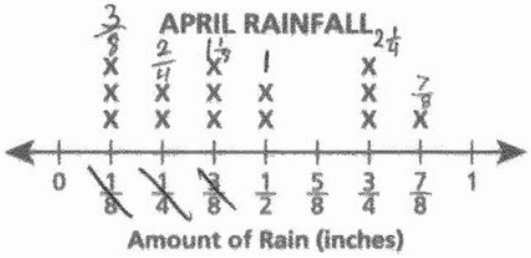
Score Point 2 (out of 3 credits)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. The total amount of rain is calculated using the correct process; however, a calculation error occurs when adding the amounts. The total rainfall amounts are correctly subtracted to determine the difference in rainfall. This response appropriately addresses most, but not all, aspects of the task.

GUIDE PAPER 7

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

2
7/8
1 1/8
1
2 2/8
7/8
6 1/8

Answer 6 1/8 inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April? [3]

Show your work.

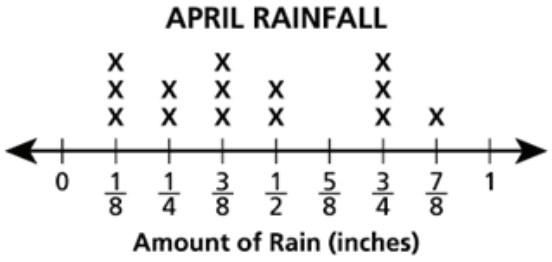
Answer 2 2/8 inches

Score Point 1 (out of 3 credits)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. The total amount of rain is correctly calculated by adding the recorded amounts of rain; however, an incorrect solution for the difference in total rainfall is provided with no work to show how the solution is obtained. This response addresses some elements of the task correctly but provides reasoning that is incomplete.

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

I added them all together and got $6\frac{6}{8}$

Answer $6\frac{6}{8}$ inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April?

Show your work.

$8\frac{1}{4} - 6\frac{6}{8} = 1\frac{4}{8}$

Answer $1\frac{4}{8}$ inches

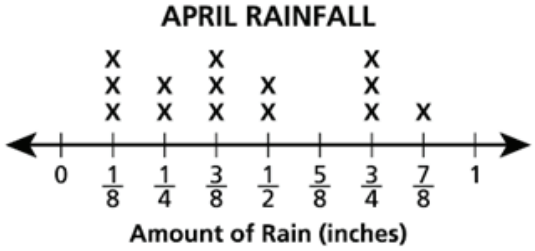
Score Point 1 (out of 3 credits)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. The total amount of rain is incorrectly calculated, and it is not clear how the incorrect solution is obtained. The total rainfall amounts are correctly subtracted to determine the difference in rainfall. This response addresses some elements of the task correctly but provides reasoning that is faulty and incomplete.

GUIDE PAPER 9

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

$\frac{3}{8} + \frac{1}{2} + 1\frac{1}{8} + 1 + 2\frac{1}{4} + \frac{7}{8} = 1\frac{4}{8} + \frac{7}{8} = 2\frac{3}{8}$

$2\frac{3}{8} + \frac{1}{2} + 1 = 3\frac{7}{8}$

Answer $3\frac{7}{8}$ inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April?

Show your work.

$3\frac{7}{8} + 8\frac{1}{4} = 12\frac{1}{8}$

Answer $12\frac{1}{8}$ inches

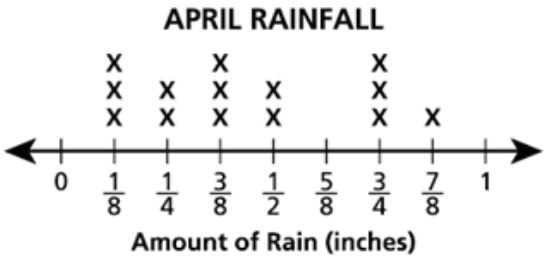
Score Point 1 (out of 3 credits)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. The total amount of rain is calculated using the correct process, and the work contains a correct expression to determine the total; however, the amount 2¼ is ignored when adding. The total rainfall amounts are inappropriately added instead of subtracted. This response addresses some elements of the task correctly but exhibits multiple flaws related to misunderstanding of important aspects of the task.

GUIDE PAPER 10

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

3/8 + 2/4 + 1 + 1 + 2 1/4 + 7/8

Answer 4 inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April?

Show your work.

4 ÷ 8 1/4

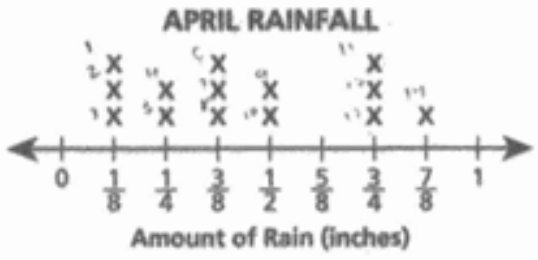
Answer 2 inches

Score Point 0 (out of 3 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. An incorrect expression is written to determine the total rainfall because one of the amounts should be 1⅛ instead of 1, and the written amounts are incorrectly added. An incorrect process is shown to determine the difference in total rainfall. Holistically, this response shows no overall understanding.

44

The line plot below shows the recorded amount of rain that fell in a city during the month of April.



What was the total amount of rain, in inches, recorded in April?

Show your work.

Answer 14 inches

The total amount of rain that fell in the city during the month of August was $8\frac{1}{4}$ inches.

What was the difference in total rainfall, in inches, between August and April? [3]

Show your work.

$8\frac{1}{4}+14 \quad \frac{14}{56}$

$\frac{1}{14}+4 \quad \frac{4}{56}$

$-\quad 8 \quad \frac{10}{56}$

Answer $8\frac{10}{56}$ inches

Score Point 0 (out of 3 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task. The number of days it rained is calculated and inappropriately provided as the solution for the total rainfall. Although an attempt is made to determine the difference in total rainfall, ¼ instead of 14 is inappropriately used when subtracting. This response is incorrect, irrelevant, and shows no overall understanding.

Grade 5
Mathematics

Scoring Leader Materials
2023 Training Set