New York State Testing Program

2019

Mathematics Test

Grade 5

Scoring Leader Materials

Training Set

Grade 5 Mathematics Reference Sheet

CONVERSIONS

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

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

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

FORMULAS

Right Rectangular Prism $V = Bh$ or $V = lwh$

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 • 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 • 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

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 • 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 • 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 • 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).

2019 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 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 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.
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 has been crossed out, the student shall not receive full credit.
8. If the student makes a conceptual error (that is an error in understanding rather than an arithmetic or computational error), that student shall not receive more than 50% credit.
9. Trial-and-error responses are **not** subject to Scoring Policy #6 above, since crossing out is part of the trial-and-error process.
10. 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.
11. In questions requiring number sentences, the number sentences must be written horizontally.
12. When measuring angles with a protractor, there is a +/- 5 degrees deviation allowed of the true measure.
13. 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.

39

Martin is using unit cubes to build a tower in the shape of a right rectangular prism. A description of the tower is listed below.

- bottom layer is made of 16 unit cubes
- bottom layer is in the shape of a square prism
- 9 more equal layers of unit cubes are added on top of the bottom layer

What is the total volume, in cubic units, of the completed tower?

Show your work.

Answer _____ cubic units

EXEMPLARY RESPONSE

39

Martin is using unit cubes to build a tower in the shape of a right rectangular prism. A description of the tower is listed below.

- bottom layer is made of 16 unit cubes
- bottom layer is in the shape of a square prism
- 9 more equal layers of unit cubes are added on top of the bottom layer

What is the total volume, in cubic units, of the completed tower?

Show your work.

Number of layers: $9 + 1 = 10$

Number of unit cubes per layer: 16

Total volume: $10 \times 16 = 160$ cubic units

OR

Volume of the bottom layer: 16 cubic units

Volume of all other layers: $9 \times 16 = 144$ cubic units

Total volume: $16 + 144 = 160$ cubic units

OR other valid process

Answer 160 cubic units

39

Martin is using unit cubes to build a tower in the shape of a right rectangular prism. A description of the tower is listed below.

- bottom layer is made of 16 unit cubes
- bottom layer is in the shape of a square prism
- 9 more equal layers of unit cubes are added on top of the bottom layer

What is the total volume, in cubic units, of the completed tower?

Show your work.

I know that one layer is 16 unit cubes and is a square, which means the base of this prism is 4 × 4. And it says there are 9 more layers than one, so there are 10 layers, and 4 × 4 × 10 (l × w × h) equals 160. And another way to figure this out is to calculate 16 × 10 since it's base × height formula.

Answer 160 cubic units

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total volume of all layers of the tower is correctly determined using mathematically sound procedures.

GUIDE PAPER 2

39

Martin is using unit cubes to build a tower in the shape of a right rectangular prism. A description of the tower is listed below.

- bottom layer is made of 16 unit cubes
- bottom layer is in the shape of a square prism
- 9 more equal layers of unit cubes are added on top of the bottom layer

What is the total volume, in cubic units, of the completed tower?

Show your work.

5
16
× 9
144
+ 16
160

Answer 160 cubic units

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The volume of 9 layers is correctly calculated and correctly added to the volume of the bottom layer to determine the solution.

GUIDE PAPER 3

39

Martin is using unit cubes to build a tower in the shape of a right rectangular prism. A description of the tower is listed below.

- bottom layer is made of 16 unit cubes
- bottom layer is in the shape of a square prism
- 9 more equal layers of unit cubes are added on top of the bottom layer

What is the total volume, in cubic units, of the completed tower?

Show your work.

$$\begin{array}{r} 16 \\ \times\ 10 \\ \hline 160 \end{array}$$

Answer it takes 160 cubic units to make the tower cubic units

Score Point 2 (out of 2 points)

This response contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and procedures in the task. The total volume of all layers of the tower is correctly determined using a mathematically sound procedure. Not showing the addition step is acceptable since it is a simple single digit numbers addition.

GUIDE PAPER 4

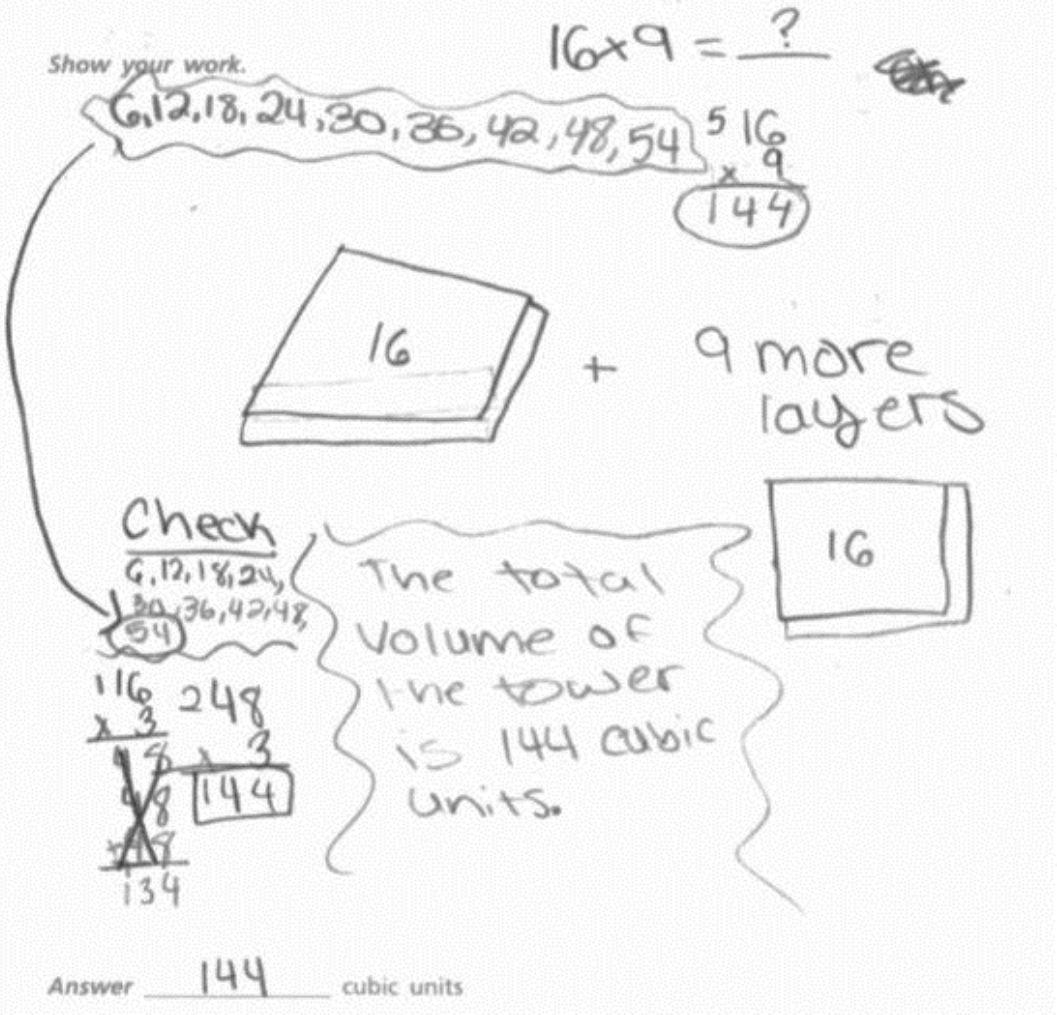
39

Martin is using unit cubes to build a tower in the shape of a right rectangular prism. A description of the tower is listed below.

- bottom layer is made of 16 unit cubes
- bottom layer is in the shape of a square prism
- 9 more equal layers of unit cubes are added on top of the bottom layer

What is the total volume, in cubic units, of the completed tower?

Show your work.



Answer 144 cubic units

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The volume of 9 layers is correctly calculated and the work shows understanding that the bottom layer's volume should be added; however, the addition is not carried out. The response correctly addresses only some elements of the task.

GUIDE PAPER 5

39

Martin is using unit cubes to build a tower in the shape of a right rectangular prism. A description of the tower is listed below.

- bottom layer is made of 16 unit cubes
- bottom layer is in the shape of a square prism
- 9 more equal layers of unit cubes are added on top of the bottom layer

What is the total volume, in cubic units, of the completed tower?

Show your work.

$V = L \times W \times H$
$V = 4 \times 4 \times 9$
$V = 16 \times 9$
$V = 144$ cubic units

Answer 144 cubic units

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The volume of 9 layers is correctly calculated but inappropriately provided as the solution. The volume of the bottom layer is not included in the total volume. The response correctly addresses only some elements of the task.

GUIDE PAPER 6

39

Martin is using unit cubes to build a tower in the shape of a right rectangular prism. A description of the tower is listed below.

- bottom layer is made of 16 unit cubes
- bottom layer is in the shape of a square prism
- 9 more equal layers of unit cubes are added on top of the bottom layer

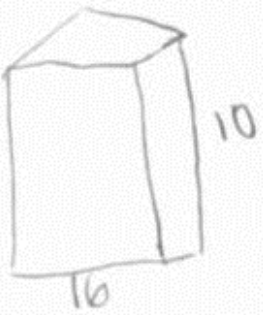
What is the total volume, in cubic units, of the completed tower?

Show your work.

base - 16

bottom - □ + 9 = 10

square - every side equal



16 × 16 × 10

316
× 16
96
+160
256
× 10
2560

Answer 2,560 cubic units

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The value 16 is misinterpreted as the side length of the base rather than the volume of the bottom layer. A correct procedure is then used to calculate the total volume of the tower. The response contains an incorrect solution but applies a mathematically appropriate process.

GUIDE PAPER 7

39

Martin is using unit cubes to build a tower in the shape of a right rectangular prism. A description of the tower is listed below.

- bottom layer is made of 16 unit cubes
- bottom layer is in the shape of a square prism
- 9 more equal layers of unit cubes are added on top of the bottom layer

What is the total volume, in cubic units, of the completed tower?

Show your work.

$$\begin{array}{r} 16 \\ \times \quad 9 \\ \hline 414 \end{array}$$

Answer 414 cubic units

Score Point 0 (out of 2 points)

Although the response contains some elements of a correct procedure, holistically the work is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The volume of 9 layers is incorrectly calculated and the bottom layer's volume is not addressed.

39

Martin is using unit cubes to build a tower in the shape of a right rectangular prism. A description of the tower is listed below.

- bottom layer is made of 16 unit cubes
- bottom layer is in the shape of a square prism
- 9 more equal layers of unit cubes are added on top of the bottom layer

What is the total volume, in cubic units, of the completed tower?

Show your work.

$$\begin{array}{r} {}^{1}16 \\ +\ 9 \\ \hline 25 \end{array}$$ unit cubes

Answer 25 cubic units

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. An incorrect procedure is used to obtain an incorrect solution. Adding volume and layers shows no understanding.

40

Joel has a goal to practice his clarinet for $4\frac{1}{2}$ hours per week. The list below shows the number of hours Joel has practiced so far this week.

- Monday: $1\frac{1}{2}$ hours
- Wednesday: $1\frac{1}{4}$ hours
- Thursday: 1 hour

How many more hours does Joel need to practice this week to meet his goal?

Show your work.

Answer _____ hours

EXEMPLARY RESPONSE

40

Joel has a goal to practice his clarinet for $4\frac{1}{2}$ hours per week. The list below shows the number of hours Joel has practiced so far this week.

- Monday: $1\frac{1}{2}$ hours
- Wednesday: $1\frac{1}{4}$ hours
- Thursday: 1 hour

How many more hours does Joel need to practice this week to meet his goal?

Show your work.

Time spent practicing: $1\frac{1}{2} + 1\frac{1}{4} + 1 = 1\frac{2}{4} + 1\frac{1}{4} + \frac{4}{4} = \frac{6}{4} + \frac{5}{4} + \frac{4}{4} = \frac{15}{4} = 3\frac{3}{4}$ hours

Time left to practice: $4\frac{1}{2} - 3\frac{3}{4} = 4\frac{2}{4} - 3\frac{3}{4} = \frac{18}{4} - \frac{15}{4} = \frac{3}{4}$ hour

OR

$1\frac{1}{2}$ hours = 60 + 30 = 90 min

$1\frac{1}{4}$ hours = 60 + 15 = 75 min

1 hour = 60 min

$4\frac{1}{2}$ hours = 4 × 60 + 30 = 240 + 30 = 270 min

Time spent practicing: 90 + 75 + 60 = 225 min = 3 hours 45 min = $3\frac{3}{4}$ hours

Time left to practice: 270 − 225 = 45 min = $\frac{3}{4}$ hour

OR other valid process

Answer $\frac{3}{4}$ hours

40

Joel has a goal to practice his clarinet for $4\frac{1}{2}$ hours per week. The list below shows the number of hours Joel has practiced so far this week.

- Monday: $1\frac{1}{2}$ hours
- Wednesday: $1\frac{1}{4}$ hours
- Thursday: 1 hour

How many more hours does Joel need to practice this week to meet his goal?

Show your work.

$1 + 1 + 1 = 3$ $\quad \frac{1}{2} = \frac{2}{4}$ $\quad \frac{2}{4} + \frac{1}{4} = \frac{3}{4}$ $\quad \frac{3}{4} + 3 = 3\frac{3}{4}$

$4\frac{1}{2} - 3\frac{3}{4} = \frac{3}{4}$

Answer $\frac{3}{4}$ hours

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The number of hours Joel already practiced is correctly calculated and then correctly subtracted from the total number of hours to determine the solution.

GUIDE PAPER 2

40

Joel has a goal to practice his clarinet for $4\frac{1}{2}$ hours per week. The list below shows the number of hours Joel has practiced so far this week.

- Monday: $1\frac{1}{2}$ hours = 90 min
- Wednesday: $1\frac{1}{4}$ hours = 75 min
- Thursday: 1 hour = 60 min

How many more hours does Joel need to practice this week to meet his goal?

Show your work.

90
+75
165
+60
225

$4\frac{1}{2} = 270$

610
~~270~~
- 225
45 = $\frac{3}{4}$

Answer ~~3~~ 4 hours

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The conversion from hours to minutes is carried out correctly and the amount of time left to practice is correctly calculated using mathematically sound procedures. The answer in minutes is correctly converted back into hours. Per Scoring Policy #1, the work written in other than a designated area should still be scored.

GUIDE PAPER 3

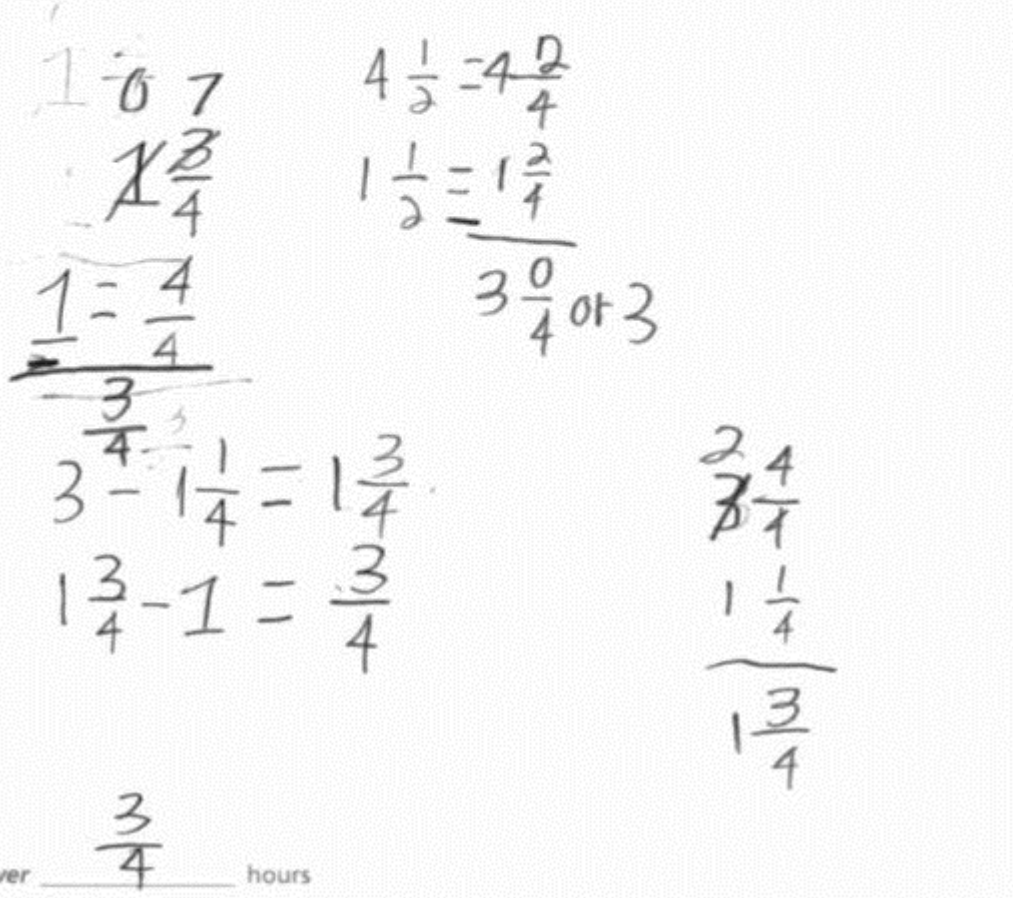
40

Joel has a goal to practice his clarinet for $4\frac{1}{2}$ hours per week. The list below shows the number of hours Joel has practiced so far this week.

- Monday: $1\frac{1}{2}$ hours
- Wednesday: $1\frac{1}{4}$ hours
- Thursday: 1 hour

How many more hours does Joel need to practice this week to meet his goal?

Show your work.



Answer 3/4 hours

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The amount of time left to practice is correctly calculated by subtracting the hours practiced each day from the total number of hours.

GUIDE PAPER 4

40

Joel has a goal to practice his clarinet for $4\frac{1}{2}$ hours per week. The list below shows the number of hours Joel has practiced so far this week.

- Monday: $1\frac{1}{2}$ hours
- Wednesday: $1\frac{1}{4}$ hours
- Thursday: 1 hour

How many more hours does Joel need to practice this week to meet his goal?

Show your work.

$1\frac{1}{2} + 1\frac{1}{4} + 1 = 3\frac{3}{4}$ $\quad 4\frac{1}{2} - 3\frac{3}{4} = \frac{1}{4}$

Answer $\frac{1}{4}$ hours to meet his goal hours

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The number of hours Joel already practiced is correctly calculated; however, a calculation error occurs when subtracting the result from the total number of hours. The response contains an incorrect solution but applies a mathematically appropriate process.

GUIDE PAPER 5

40

Joel has a goal to practice his clarinet for $4\frac{1}{2}$ hours per week. The list below shows the number of hours Joel has practiced so far this week.

- Monday: $1\frac{1}{2}$ hours
- Wednesday: $1\frac{1}{4}$ hours
- Thursday: 1 hour

How many more hours does Joel need to practice this week to meet his goal?

Show your work.

$$1\frac{2}{4}$$
$$1\frac{1}{4}$$
$$1$$
$$= 3\frac{3}{4}$$

Answer joel needs to practice for $\frac{3}{4}$ more hours hours

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The number of hours Joel already practiced is correctly calculated. Although the correct solution is provided, the subtraction is not shown. It is not clear how the solution is obtained since the fraction ¾ is also part of the mixed number 3¾. The response contains the correct solution but the required work is incomplete.

GUIDE PAPER 6

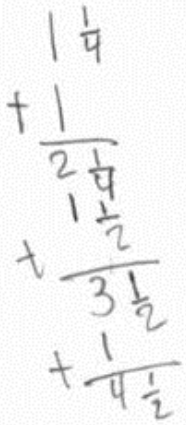
40

Joel has a goal to practice his clarinet for $4\frac{1}{2}$ hours per week. The list below shows the number of hours Joel has practiced so far this week.

- Monday: $1\frac{1}{2}$ hours
- Wednesday: $1\frac{1}{4}$ hours
- Thursday: 1 hour

How many more hours does Joel need to practice this week to meet his goal?

Show your work.



Answer 1 hours

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A calculation error is made when determining the number of hours Joel already practiced ($2¼ + 1½ \neq 3½$). The result is correctly used to determine the amount of time left to practice to meet the goal. The response contains an incorrect solution but applies a mathematically appropriate process.

GUIDE PAPER 7

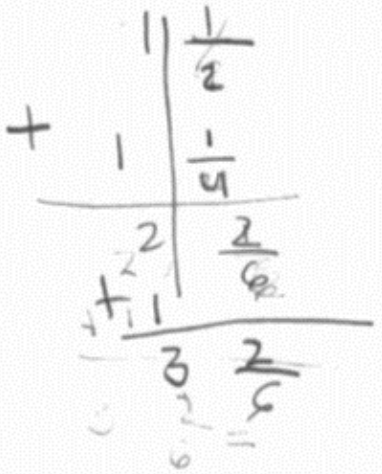
40

Joel has a goal to practice his clarinet for $4\frac{1}{2}$ hours per week. The list below shows the number of hours Joel has practiced so far this week.

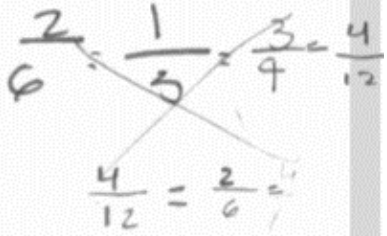
- Monday: $1\frac{1}{2}$ hours
- Wednesday: $1\frac{1}{4}$ hours
- Thursday: 1 hour

How many more hours does Joel need to practice this week to meet his goal?

Show your work.



DO NOT WRITE BEYOND THIS AREA



Answer 3 2/6 hours

Score Point 0 (out of 2 points)

Although the response contains some elements of a correct procedure, holistically the work is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. A calculation error is made when determining the number of hours Joel already practiced and the number of hours left to practice is not addressed.

40

Joel has a goal to practice his clarinet for $4\frac{1}{2}$ hours per week. The list below shows the number of hours Joel has practiced so far this week.

- Monday: $1\frac{1}{2}$ hours
- Wednesday: $1\frac{1}{4}$ hours
- Thursday: 1 hour

How many more hours does Joel need to practice this week to meet his goal?

Show your work.

Joel needs 3/4 of an hour so he can reach his gole

Answer jeol need 3/4 of an hour so he can reeach his gole hours

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. Although the correct solution is provided, no work is shown to support it. Per Scoring Policy #3, this response receives no credit.

41

How does the value of the digit 2 in the number 32,000 compare with the value of the digit 2 in the number 26,000 ?

Explain your answer.

EXEMPLARY RESPONSE

41

How does the value of the digit 2 in the number 32,000 compare with the value of the digit 2 in the number 26,000?

Explain your answer.

The value of the digit 2 in 26,000 is 20,000.

The value of the digit 2 in 32,000 is 2,000.

20,000 > 2,000.

OR

The value of the digit 2 in 26,000 is 10 times greater than the value of the digit 2 in 32,000.

OR

The value of the digit 2 in 32,000 is $\frac{1}{10}$ the value of the digit 2 in 26,000.

OR other valid explanation

41

How does the value of the digit 2 in the number 32,000 compare with the value of the digit 2 in the number 26,000 ?

Explain your answer.

The value of the digit 2 in the number 32,000 is ten times less than the value of the digit 2 in the number 26,000. The digit 2 in the number 32,000 is in the the one thousands place while the digit 2 in the number 26,000 is in the ten thousands place.

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The place values of the digit 2 in the two numbers are correctly compared and a correct explanation is provided. The phrase "*is ten times less than*" is taken to mean "*is one tenth the value of*," and is considered an inconsequential error.

GUIDE PAPER 2

41

How does the value of the digit 2 in the number 32,000 compare with the value of the digit 2 in the number 26,000?

Explain your answer.

The value of the digit 2 in 32,000 is 1/10 of the value of digit 2 in 26,000. And the value of digit 2 in 26,000 is 10 times greater tha the value of digit 2 in 32,000.

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The place values of the digit 2 in the two numbers are correctly compared and a correct explanation is provided.

GUIDE PAPER 3

41

How does the value of the digit 2 in the number 32,000 compare with the value of the digit 2 in the number 26,000?

Explain your answer.

The number 2 in 26,000 in bigger than the 2 in 32,000 because the value 2 in 26,000 is 20,000 and the value 2 in 32,000 is 2,000

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The place values of the digit 2 in the two numbers are correctly compared and a correct explanation is provided.

GUIDE PAPER 4

41

How does the value of the digit 2 in the number 32,000 compare with the value of the digit 2 in the number 26,000 ?

Explain your answer.

the digit 2 in 32000 is in the thousand place and the digit 2 in 26000 is in the ten thousand place

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The place value of the digit 2 in each number is correctly explained; however, a comparison is not provided. The response correctly addresses only some elements of the task.

GUIDE PAPER 5

41

How does the value of the digit 2 in the number 32,000 compare with the value of the digit 2 in the number 26,000 ?

Explain your answer.

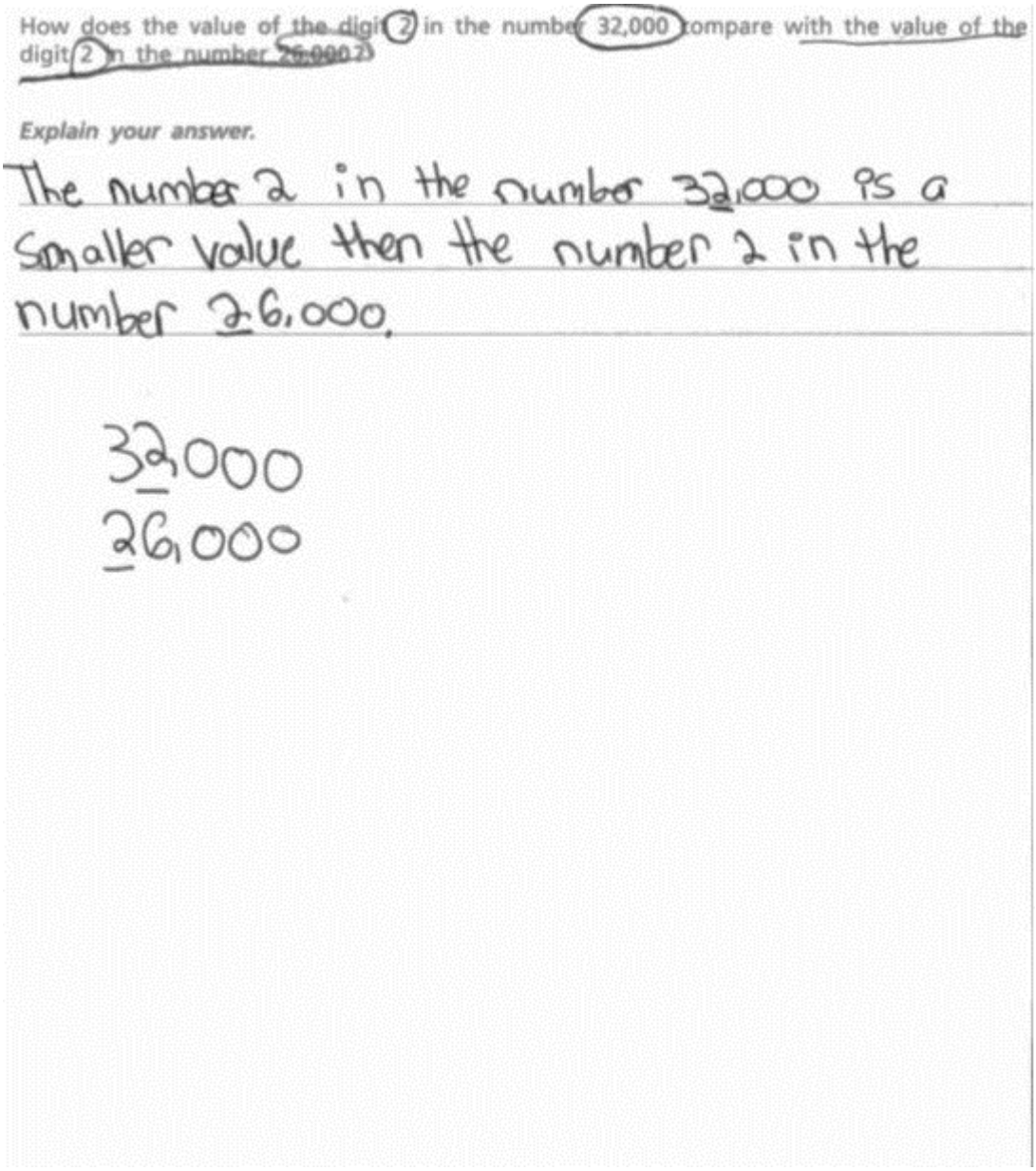
$26000 = 20000$
$32000 = 2000$
$2000 \angle 20000$

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct comparison is provided; however, the explanation contains two incorrect identities and is insufficient to explain the value of the digit 2 in the two given numbers. The response correctly addresses only some elements of the task.

GUIDE PAPER 6

41


How does the value of the digit 2 in the number 32,000 compare with the value of the digit 2 in the number 26,000?

Explain your answer.

The number 2 in the number 32,000 is a smaller value then the number 2 in the number 26,000.

32,000
26,000

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Although the values of the digit 2 in the two numbers are correctly compared, the explanation does not sufficiently address the place value and is incomplete. The response correctly addresses only some elements of the task.

GUIDE PAPER 7

41

How does the value of the digit 2 in the number 32,000 compare with the value of the digit 2 in the number 26,000?

Explain your answer.

It is 10 times greater. You are just shifting the 2 1 time to the left.

Score Point 0 (out of 2 points)

Although the response contains some elements of a correct procedure, holistically the explanation is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. The order of the numbers being compared is not described, and the explanation incorrectly implies that the value of the digit 2 in 32,000 "*is 10 times greater*" than the value of the digit 2 in 26,000.

41

How does the value of the digit 2 in the number 32,000 compare with the value of the digit 2 in the number 26,000 ?

Explain your answer.

how i got my answer was i looked at both and 32,000 is bigger than 26,000

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 comparison is irrelevant and the explanation does not address the task.

42

There are 5 cups of oatmeal in a container. Stella eats $\frac{1}{3}$ cup of the oatmeal every day for breakfast. In how many days will Stella finish all the oatmeal in the container?

Show your work.

Answer _____ days

EXEMPLARY RESPONSE

42

There are 5 cups of oatmeal in a container. Stella eats $\frac{1}{3}$ cup of the oatmeal every day for breakfast. In how many days will Stella finish all the oatmeal in the container?

Show your work.

$5 \div {}^{1}\!/_{3} = 5 \times {}^{3}\!/_{1} = 15$ days

OR

$1 = {}^{3}\!/_{3}$

There are 3 servings of $^{1}\!/_{3}$ cup in 1 cup of oatmeal.

$3 \times 5 = 15$ servings in 5 cups

Therefore, in 15 days Stella will finish all the oatmeal.

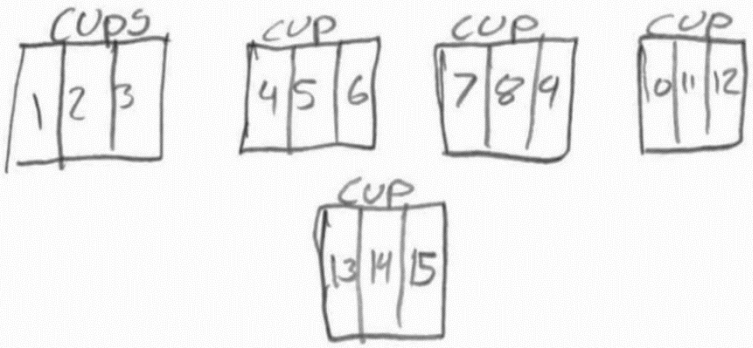
OR other valid process

Answer 15 days

42

There are 5 cups of oatmeal in a container. Stella eats $\frac{1}{3}$ cup of the oatmeal every day for breakfast. In how many days will Stella finish all the oatmeal in the container?

Show your work.



$\frac{5}{1} \div \frac{1}{3} = \frac{5}{1} \times \frac{3}{1} = 15$ days

Answer 15 days

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The chart correctly represents 15 servings of ⅓ in 5 cups of oatmeal and correct calculations are provided to determine the number of days needed to eat all the oatmeal.

GUIDE PAPER 2

42

There are 5 cups of oatmeal in a container. Stella eats $\frac{1}{3}$ cup of the oatmeal every day for breakfast. In how many days will Stella finish all the oatmeal in the container?

Show your work.

1 cup =3/3

3/3x5=15/3

Answer In 15 days Stella will finsh the 5 cups of oatmeal. days

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The 5 cups of oatmeal are correctly written using thirds and the numerator of the fraction is correctly interpreted as the number of days needed to eat all the oatmeal.

GUIDE PAPER 3

42

There are 5 cups of oatmeal in a container. Stella eats $\frac{1}{3}$ cup of the oatmeal every day for breakfast. In how many days will Stella finish all the oatmeal in the container?

Show your work.

$5 \div \frac{1}{3} = 15.$

Answer it will take stella 15 days to finish the oatmeal. days

Score Point 2 (out of 2 points)

This response contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and procedures in the task. The number of days needed to eat all the oatmeal is correctly determined using a sound procedure.

GUIDE PAPER 4

42

There are 5 cups of oatmeal in a container. Stella eats $\frac{1}{3}$ cup of the oatmeal every day for breakfast. In how many days will Stella finish all the oatmeal in the container?

Show your work.

$\frac{1}{3} = 3 \quad 3 \times 5 = 15$

Answer 15 days

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The number of days needed to eat all the oatmeal is correctly determined; however, the work does not sufficiently explain the step from ⅓ to 3 and it is not clear what "*⅓ = 3*" represents. The response contains the correct solution but the required work is incomplete.

GUIDE PAPER 5

42

There are 5 cups of oatmeal in a container. Stella eats $\frac{1}{3}$ cup of the oatmeal every day for breakfast. In how many days will Stella finish all the oatmeal in the container?

Show your work.

$5 \div \frac{1}{3} =$ $5 \times 3 = 18$

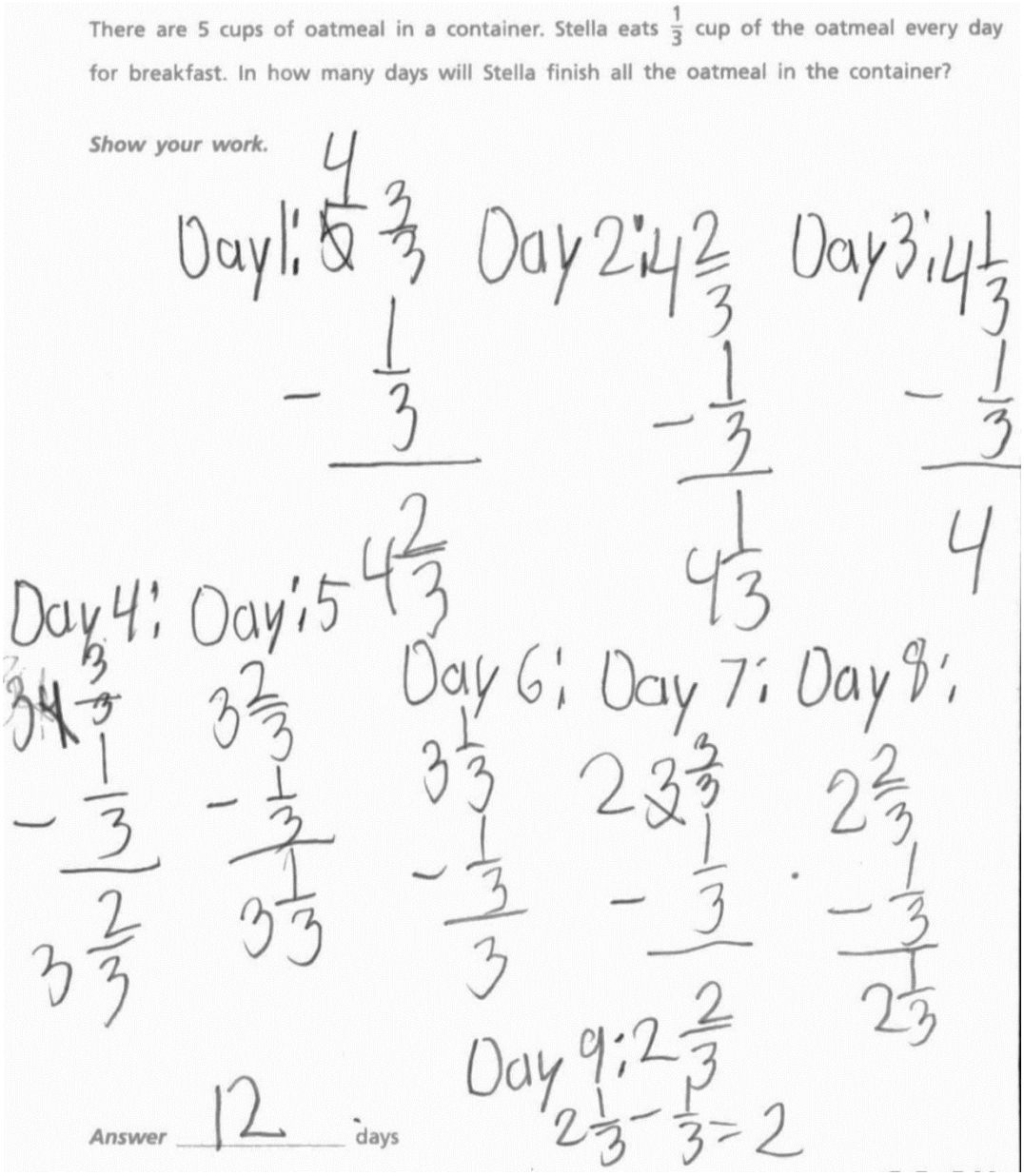
Answer 18 days

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct procedure is used to determine the number of days; however, a calculation error results in an incorrect solution. The response contains an incorrect solution but applies an appropriate process.

GUIDE PAPER 6

42



Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct procedure of repeated subtraction is used to determine the number of days needed to finish the oatmeal; however, the work after "*Day 9*" is not shown and the process is stopped early with oatmeal still remaining. The response contains an incorrect solution but applies an appropriate process.

GUIDE PAPER 7

42

There are 5 cups of oatmeal in a container. Stella eats $\frac{1}{3}$ cup of the oatmeal every day for breakfast. In how many days will Stella finish all the oatmeal in the container?

Show your work.

$5 \div \frac{1}{3} = 1\frac{2}{3}$

$5 \div 3 = 1\frac{2}{3}$

Answer $1\frac{2}{3}$ days

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. Although the work contains the correct procedure, the numbers are incorrectly divided. A second, incorrect procedure is shown to obtain the same incorrect solution. Holistically, the work shows no overall understanding.

42

There are 5 cups of oatmeal in a container. Stella eats $\frac{1}{3}$ cup of the oatmeal every day for breakfast. In how many days will Stella finish all the oatmeal in the container?

Show your work.

$5 \times \frac{1}{3}$

$\frac{5}{1} - \frac{1}{5} \times \frac{1}{3} = \frac{1}{15}$

Keep
Change
Flip

Answer 15 days

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. Although the correct solution is provided, it is obtained using an incorrect procedure.

43

Olga decorates blankets with ribbon. She has 12 yards of ribbon. She uses 22 feet of the ribbon to decorate blankets. After she decorates the blankets, how many feet of ribbon remain?

Show your work.

Answer _____ feet

EXEMPLARY RESPONSE

43

Olga decorates blankets with ribbon. She has 12 yards of ribbon. She uses 22 feet of the ribbon to decorate blankets. After she decorates the blankets, how many feet of ribbon remain?

Show your work.

1 yard = 3 feet

$12 \times 3 = 36$ feet of ribbon to start with

$36 - 22 = 14$ feet of ribbon left

OR

1 foot = $\frac{1}{3}$ yard

$22 \times \frac{1}{3} = 22 \div 3 = 7\frac{1}{3}$ yards of ribbon used

$12 - 7\frac{1}{3} = 4\frac{2}{3}$ yards of ribbon left

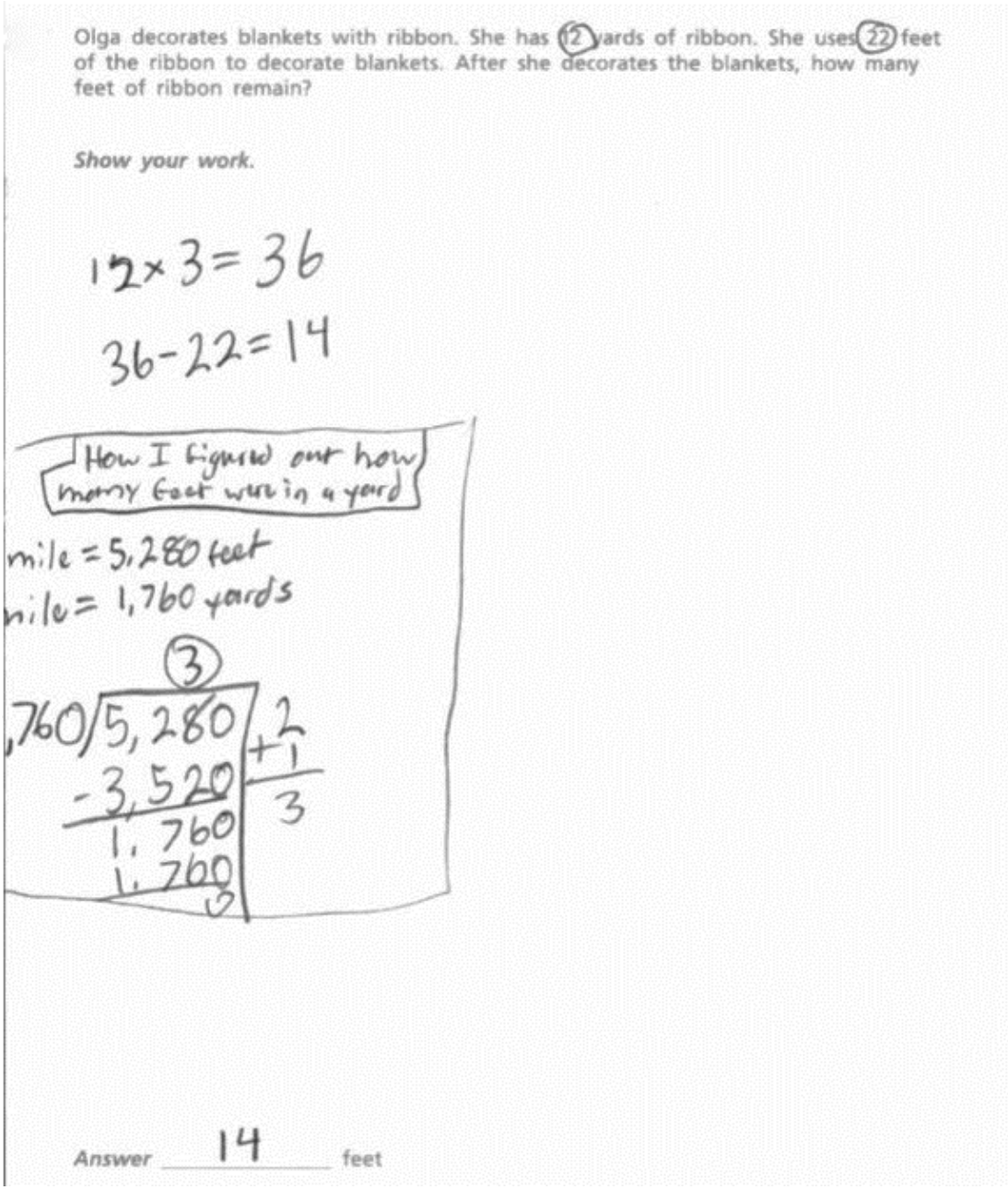
1 yard = 3 feet

$4\frac{2}{3} \times 3 = \frac{14}{3} \times 3 = 14$ feet of ribbon left

OR other valid process

Answer 14 feet

43



Olga decorates blankets with ribbon. She has 12 yards of ribbon. She uses 22 feet of the ribbon to decorate blankets. After she decorates the blankets, how many feet of ribbon remain?

Show your work.

12 × 3 = 36

36 − 22 = 14

How I figured out how many feet were in a yard

mile = 5,280 feet

mile = 1,760 yards

3

1,760 | 5,280 | 2 + 1

−3,520 | 3

1,760

1,760

0

Answer 14 feet

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The conversion to feet is carried out correctly and the remaining length is correctly determined using mathematically sound procedures.

GUIDE PAPER 2

43

Olga decorates blankets with ribbon. She has 12 yards of ribbon. She uses 22 feet of the ribbon to decorate blankets. After she decorates the blankets, how many feet of ribbon remain?

Show your work.

Step 1

12 x 3 = 36 feet

Step 2

36
- 22
14

Check

36 - 3 = 12

14
+ 22
36

Answer 14 feet

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The conversion to feet is carried out correctly and the remaining length is correctly determined using mathematically sound procedures.

GUIDE PAPER 3

43

Olga decorates blankets with ribbon. She has 12 yards of ribbon. She uses 22 feet of the ribbon to decorate blankets. After she decorates the blankets, how many feet of ribbon remain?

Show your work.

$12 \times 3 = 36 - 22 = 14$feet

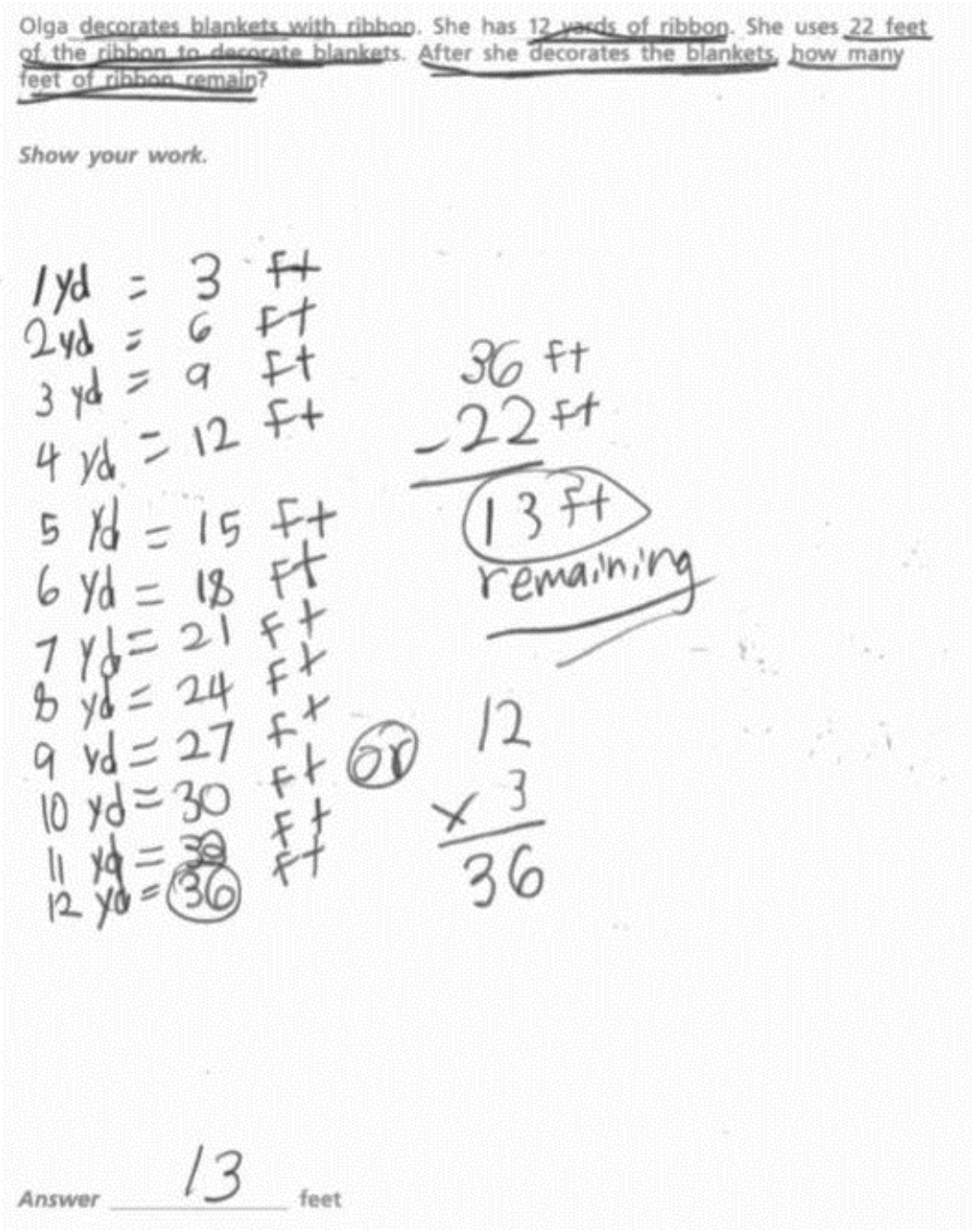
Answer 14 feet

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The conversion to feet is carried out correctly and the remaining length is correctly determined using mathematically sound procedures.

GUIDE PAPER 4

43



Olga decorates blankets with ribbon. She has 12 yards of ribbon. She uses 22 feet of the ribbon to decorate blankets. After she decorates the blankets, how many feet of ribbon remain?

Show your work.

1 yd = 3 ft
2 yd = 6 ft
3 yd = 9 ft
4 yd = 12 ft
5 yd = 15 ft
6 yd = 18 ft
7 yd = 21 ft
8 yd = 24 ft
9 yd = 27 ft
10 yd = 30 ft
11 yd = 33 ft
12 yd = 36

36 ft
−22 ft
13 ft
remaining

or

12
× 3
36

Answer 13 feet

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The conversion to feet is carried out correctly; however, a calculation error is made when subtracting the used length of ribbon, which results in an incorrect solution. The response contains an incorrect solution but applies a mathematically appropriate process.

GUIDE PAPER 5

43

Olga decorates blankets with ribbon. She has 12 yards of ribbon. She uses 22 feet of the ribbon to decorate blankets. After she decorates the blankets, how many feet of ribbon remain?

Show your work.

$12 \times 36 = 432$
$432 - 22 = 410\text{ft}$

Answer 410 feet

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Yards are inappropriately converted to inches instead of feet. The result is correctly used to determine the remaining length. The response correctly addresses only some elements of the task.

GUIDE PAPER 6

43

Olga decorates blankets with ribbon. She has 12 yards of ribbon. She uses 22 feet of the ribbon to decorate blankets. After she decorates the blankets, how many feet of ribbon remain?

Show your work.

$$\begin{array}{r} 12 \\ \times \quad 3 \\ \hline 36 \end{array}$$

Answer 36 feet

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The conversion to feet is carried out correctly but inappropriately provided as a solution. The remaining length is not calculated. The response correctly addresses only some elements of the task.

GUIDE PAPER 7

43

Olga decorates blankets with ribbon. She has 12 yards of ribbon. She uses 22 feet of the ribbon to decorate blankets. After she decorates the blankets, how many feet of ribbon remain?

Show your work.

$12 \times 22 = 264$
$264 - 22 = 242$

Answer she has 242 ft of ribbon left feet

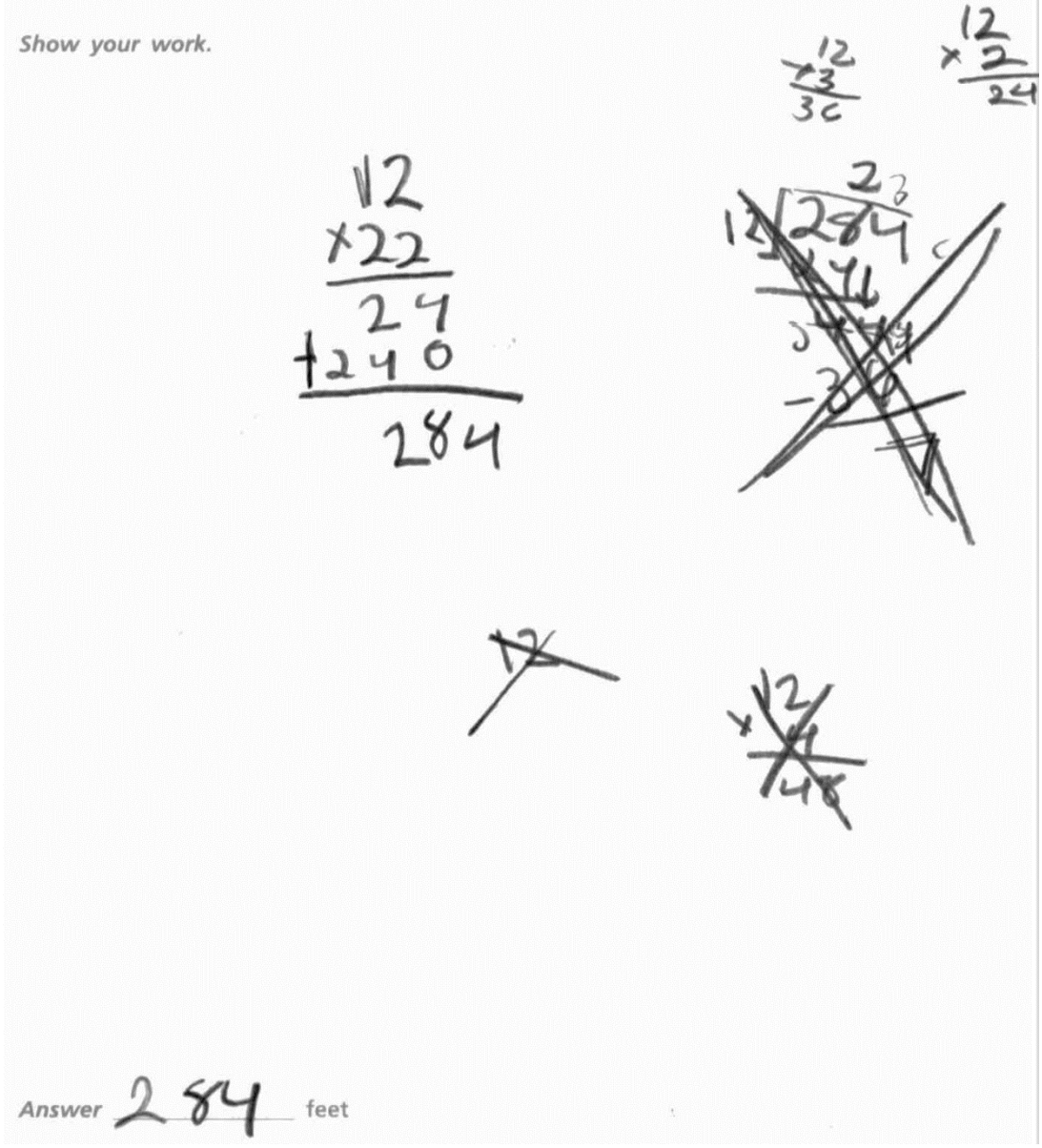
Score Point 0 (out of 2 points)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. Although the subtraction is correctly carried out and can be considered as part of the correct process, multiplying numbers given in the prompt (12 × 22) is an incorrect procedure and holistically, shows no overall understanding.

43

Olga decorates blankets with ribbon. She has 12 yards of ribbon. She uses 22 feet of the ribbon to decorate blankets. After she decorates the blankets, how many feet of ribbon remain?

Show your work.



Answer 284 feet

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. An incorrect procedure is used to obtain an incorrect solution.

44

In the expression $5 \times \frac{y}{7}$, what value of y would make a product greater than 5 ?

Explain your answer.

EXEMPLARY RESPONSE

44

In the expression $5 \times \frac{y}{7}$, what value of y would make a product greater than 5 ?

Explain your answer.

Any value of $y > 7$ would make the product greater than 5, because if $y > 7$ then the factor $y/7$ will be greater than 1. If a number is multiplied by a factor greater than 1 than the product is greater than this number.

OR

$y = 10$, because $5 \times 10/7 = 50/7 = 7\,1/7$

$7\,1/7 > 5$

OR any other value(s) of $y > 7$ with a valid explanation

44

In the expression $5 \times \frac{y}{7}$, what value of y would make a product greater than 5 ?

Explain your answer.

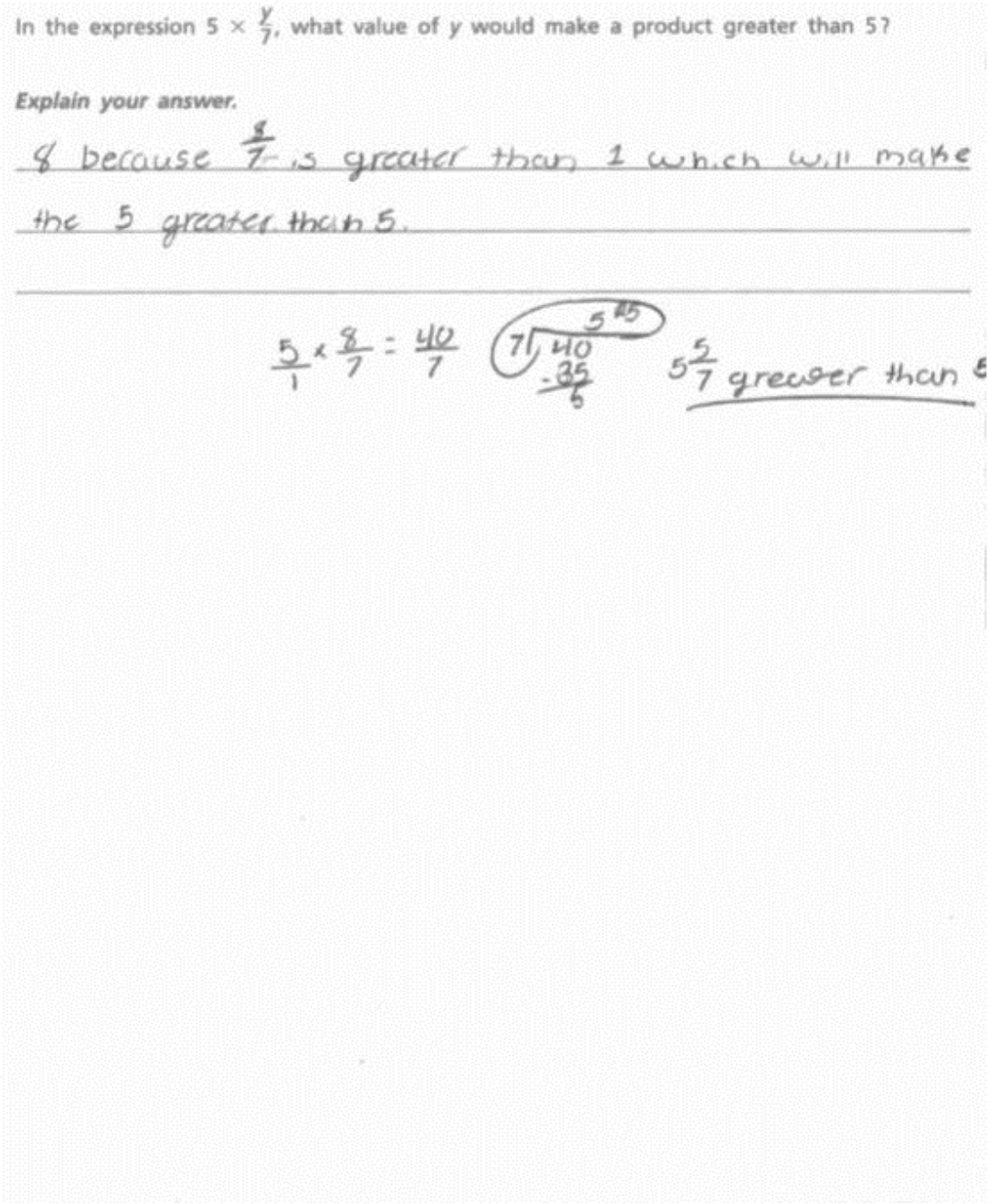
Any value greater than the denominator, multiplied by the whole number 5 would give you a product greater than 5. For example; $\frac{5}{1} \times \frac{8}{7}$ $= \frac{40}{7} = 5\frac{5}{7} > 5$

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The range of all possible y-values is correctly identified and a correct explanation with a specific example is provided.

GUIDE PAPER 2

44



Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. A correct value of *y* is chosen and a correct explanation is provided.

GUIDE PAPER 3

44

In the expression $5 \times \frac{y}{7}$, what value of y would make a product greater than 5 ?

Explain your answer.

$\frac{5}{1} \times \frac{8}{7} = \frac{40}{7}$

$40 \div 7 = 5\frac{5}{7}$ Value of y = 8

Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. A correct value of y is chosen and a correct mathematical explanation is provided.

GUIDE PAPER 4

44

In the expression $5 \times \frac{y}{7}$, what value of y would make a product greater than 5?

Explain your answer.

8 because it would turn $\frac{8}{7}$ into a mixed number like $1\frac{1}{5}$ and the product would then become $5\frac{1}{7}$.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct value of y is chosen; however, the expression is incorrectly evaluated, which detracts from the demonstration of full understanding. The response correctly addresses only some elements of the task.

GUIDE PAPER 5

44

In the expression $5 \times \frac{y}{7}$, what value of y would make a product greater than 5 ?

Explain your answer.

If the value of y was eight your answer would be greater than 5

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct value of y is chosen; however, the explanation is incomplete: the expression is not evaluated for the chosen value. The response correctly addresses only some elements of the task.

GUIDE PAPER 6

44

In the expression $5 \times \frac{y}{7}$, what value of y would make a product greater than 5?

Explain your answer.

If the value of y is greater than 7/1 whole. So it could be 8.

Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. A correct value of y is chosen; however, it is inappropriately compared with the value of the fraction instead of the denominator. Some understanding is shown that factor $y/7$ should be greater than 1. The response correctly addresses only some elements of the task.

GUIDE PAPER 7

44

In the expression $5 \times \frac{y}{7}$, what value of y would make a product greater than 5?

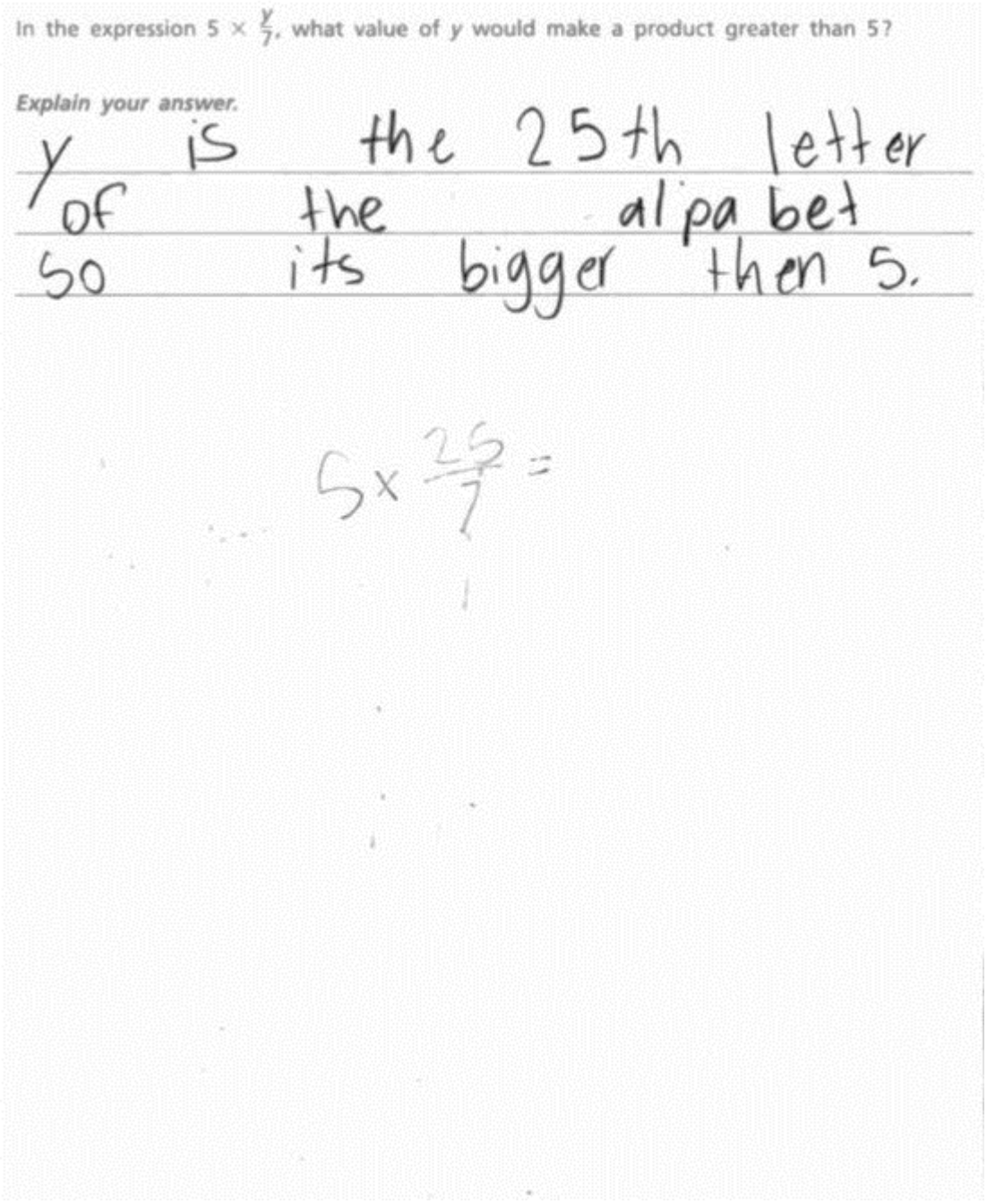
Explain your answer.

$\frac{35}{7}$

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. An answer with no explanation is provided. It is not clear if the chosen answer is the numerator of the fraction or the value of the fraction. Per Scoring Policy #3, this response receives no credit.

44


In the expression $5 \times \frac{y}{7}$, what value of y would make a product greater than 5?

Explain your answer.

y is the 25th letter of the alpa bet so its bigger then 5.

$5 \times \frac{25}{7} =$

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 explanation is irrelevant. Per Scoring Policy #6, the erased part of the response should not be scored.

45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.

Answer Portion B _____ ounces

Portion C _____ ounces

EXEMPLARY RESPONSE

45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.

$$\text{Portion B} = 2 \times \text{Portion A}$$

$$\text{Portion B} = 8.25 + 8.25 = 2 \times 8.25 = 16.5 \text{ ounces}$$

$$\text{Portion C} = 2 \times \text{Portion B}$$

$$\text{Portion C} = 8.25 + 8.25 + 8.25 + 8.25 = 2 \times 16.5 = 33 \text{ ounces}$$

OR other valid process

Answer Portion B 16.5 ounces

Portion C 33 ounces

45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.

B
8.25
+ 8.25
16.50

1 2
8.25
+8.25
8.25
8.25
33.00

Answer Portion B 16.50 ounces

Portion C 33.00 ounces

Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The weight of each portion is correctly calculated using repeated addition. The response is complete and correct.

GUIDE PAPER 2

45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.

A 8.25 B $8.25 \times 2 = 16.50$ C $16.50 \times 2 = 33.00$

Answer Portion B 16.50 ounces

Portion C 33.00 ounces

Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The weight of each portion is correctly calculated using multiplication. The response is complete and correct.

GUIDE PAPER 3

45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.

$8 + 8 = 16$
$.25 + .25 = .50$
$16 + .50 = 16.50 =$ portion b
$16 + 16 = 32$
$.50 + .50 = 1$
$32 + 1 = 33 =$ portion c

Answer Portion B 16.50 ounces

Portion C 33 ounces

Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The weight of each portion is correctly calculated using sound procedures. The response is complete and correct.

GUIDE PAPER 4

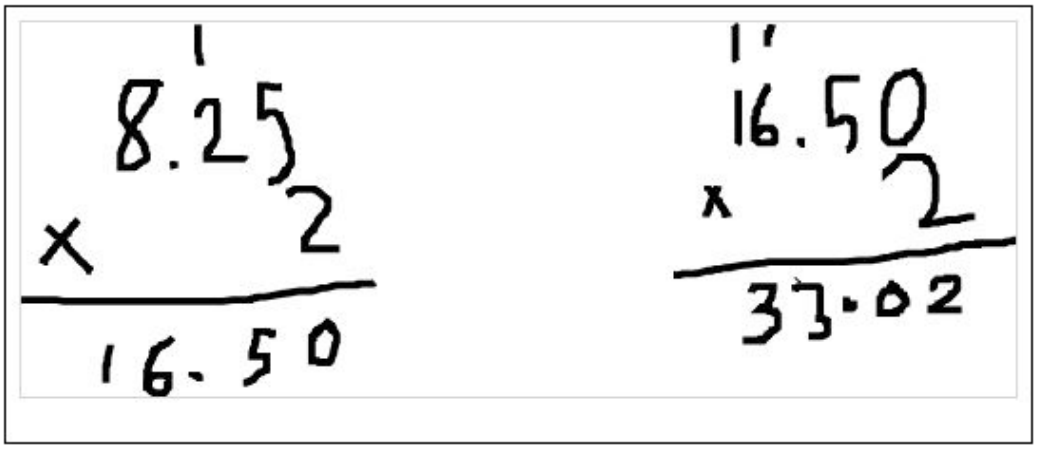
45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.



Answer Portion B 16.50 ounces

Portion C 33.02 ounces

Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. A correct process is applied to determine the weight of each portion and the weight of portion B is correctly calculated; however, a calculation error leads to an incorrect solution for portion C. The response contains an incorrect solution but provides sound procedures.

GUIDE PAPER 5

45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.

+1 +1
16.50
+16.50
33.00

Answer Portion B 16.50 ounces

Portion C 33.00 ounces

Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. The weight of each portion is correctly calculated; however, the work does not show how the answer for portion B is obtained. The response appropriately addresses most but not all aspects of the task.

GUIDE PAPER 6

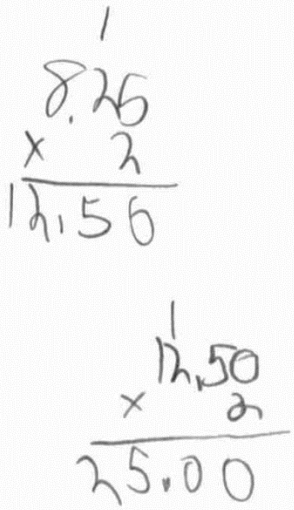
45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.



Answer Portion B 12.50 ounces

Portion C 25.00 ounces

Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. A correct process is applied to determine the weight of each portion; however, a calculation error leads to an incorrect solution for portion B. The result is correctly used to determine the weight of portion C. The response contains an incorrect solution but provides sound procedures.

GUIDE PAPER 7

45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.

portion A 8.25

portion b 8.25+8.25=16.50

portion c 16.50+8.25 =24.75

Answer Portion B portion b ounces is 16.50 ounces

Portion C portion c ounces is 24.75 ounces

Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. The weight of portion B is correctly determined. A conceptual error is made when calculating the weight of portion C: the weight of portion B is inappropriately increased by a factor of 1.5 instead of 2. The response addresses some elements of the task correctly but reaches an inadequate solution and provides reasoning that is faulty. Per Scoring Policy #8, this response cannot receive more than 50% credit.

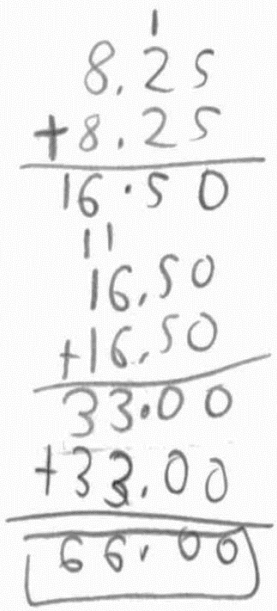
45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.



Answer Portion B 33.00 ounces

Portion C 66.00 ounces

Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. A conceptual error is made when calculating the weight of portion B: the weight of portion A is inappropriately increased by a factor of 4 instead of 2. The result is correctly used to calculate the weight of portion C. The response addresses some elements of the task correctly but reaches an inadequate solution and provides reasoning that is faulty.

GUIDE PAPER 9

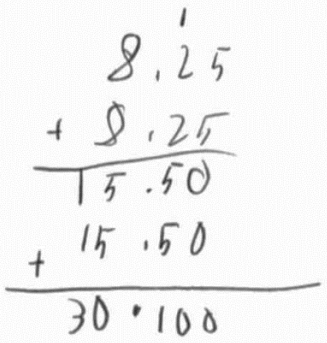
45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.



Answer Portion B 15.50 ounces

Portion C 30.100 ounces

Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. A correct process is applied to determine the weight of each portion; however, multiple calculation errors lead to an incorrect solution for portion C and the solution for portion B is not clearly identified in the work and appears to be 1.50 in the answer space. The response addresses some elements of the task correctly but reaches an inadequate solution and provides reasoning that is faulty and incomplete.

GUIDE PAPER 10

45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.

$8.25 \times 2 = 82.5$

$82.5 \times 3 = 825.$

Answer Portion B [82.5 ounces] ounces

Portion C [825 ounces] ounces

Score Point 0 (out of 3 points)

Although the response contains some correct elements, holistically the work is not sufficient to demonstrate even a limited understanding of the mathematical concepts in the task. A correct process is attempted when calculating the weight of portion B; however, the result shows 8.25 is multiplied by 10 instead of 2. The work for portion C attempts to triple instead of double the weight of portion B, and once again actually multiplies by a factor of 10. The response shows no overall understanding.

45

Diane has pizza dough for making pizzas. She separates the dough into the three portions listed below.

- Portion A is 8.25 ounces.
- Portion B is twice as much as portion A.
- Portion C is twice as much as portion B.

What is the weight, in ounces, of portion B and the weight, in ounces, of portion C?

Show your work.

Answer Portion B 16.50 ounces

Portion C 33 ounces

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. Although the correct solutions are provided, they are not supported with work. Per Scoring Policy #3, this response receives no credit.