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***New York State  
Testing Program***

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**2022**

**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

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## **FORMULAS**

**Right Rectangular Prism**

$$V = Bh \text{ or } V = lwh$$

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## 2-Point Holistic Rubric

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

\* 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

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

\* 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).

## 2022 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 have 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.

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

**Show your work.**

**Answer** \_\_\_\_\_ teaspoons

## EXEMPLARY RESPONSE

39

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

**Show your work.**

$$12 \times 20 = 240 \text{ quarts}$$

$$240 \div 4 = 60 \text{ gallons}$$

$$60 \div 10 = 6 \text{ teaspoons}$$

*or*

$$20 \div 4 = 5 \text{ gallons per tank}$$

$$5 \times 12 = 60 \text{ gallons}$$

$$60 \div 10 = 6 \text{ teaspoons}$$

*or*

$$10 \times 4 = 40 \text{ quarts}$$

1 teaspoon per 10 gallons or 40 quarts

$\frac{1}{2}$  teaspoon per 5 gallons or 20 quarts or 1 tank

$$\frac{1}{2} \times 12 = 6 \text{ teaspoons}$$

*or other valid process*

**Answer**     6     teaspoons

39

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

**Show your work.**

4 quarts=1 gallon  
 $20 \div 4 = 5$  gallons each tank  
 $12 \text{ tanks} \times 5 \text{ gallons} = 60$  gallons of water  
 $60 \div 10 = 6$   
6 teaspoons will be needed of water conditioner

**Answer**

6

teaspoons

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

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total number of gallons of water in all fish tanks is correctly calculated and the total number of teaspoons of water conditioner is correctly determined using sound procedures. This response is complete and correct.

# GUIDE PAPER 2

39

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

Show your work.

$$\begin{array}{r} 12 \\ \times 20 \\ \hline 00 \\ + 240 \\ \hline 240 \end{array} \text{ quarts}$$

$$4 \overline{) 240} = 60$$

240 quarts = 60 g

$$\frac{4 \text{ g}}{1} = \frac{1 \text{ g}}{4}$$

1 tsp 2 3 4 5 6  
10 10 10 10 10 10

Answer 6 teaspoons

## Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The total amount of water in all tanks is correctly calculated and converted to gallons. The result is correctly split into six groups of 10 gallons to determine the total number of teaspoons of water conditioner that will be used for all the water. This response is complete and correct.

## GUIDE PAPER 3

39

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

**Show your work.**

$$\begin{aligned} 10 \text{ gallons} &= 40 \text{ quarts} \\ \text{Each tank gets } &\frac{1}{2} \text{ teaspoon} \\ 12 \times \frac{1}{2} &= 6 \end{aligned}$$

Kallie will use 6  
teaspoons of  
water  
conditioner for  
all the fish  
tanks.

**Answer**

teaspoons

### 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 quarts is carried out correctly. The amount of water conditioner that needs to be used for one tank is correctly calculated and multiplied by 12 tanks to determine the total number of teaspoons of water conditioner that will be used for all the water. This response contains sufficient work to show a thorough understanding.

# GUIDE PAPER 4

39

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

*Show your work.*

$$\begin{array}{r} 12 \\ \times 20 \\ \hline 00 \\ 240 \\ \hline 240 \end{array}$$

$$\begin{array}{r} 6 \\ 40 \overline{) 240} \\ \underline{240} \\ 0 \end{array}$$

Answer 6 teaspoons

## Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The total amount of water, in quarts, is correctly calculated and the total number of teaspoons of water conditioner is correctly determined; however, the last step of dividing by 40 is insufficiently explained. It is not clear from the work what 40 represents and why division by 40 is part of the correct process. This response contains the correct solution, but the required work is incomplete.

## GUIDE PAPER 5

39

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

**Show your work.**

$$\begin{array}{r} \times 12 \\ 20 \text{ quarts} \\ \hline 140 \end{array}$$

$$140 \div 4 = 35$$

$$35 \div 10 = 3 \text{ remainder } 5$$

Total teaspoons:

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

**Answer**

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

teaspoons

### 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 occurs when computing the total amount of water in all tanks ( $12 \times 20 \neq 140$ ). The rest of the work converting to gallons and determining the total number of teaspoons of water conditioner is performed correctly. This response contains an incorrect solution but applies a mathematically appropriate process.

# GUIDE PAPER 6

39

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

Show your work.

$$\begin{array}{r} 12 \\ \times 20 \\ \hline 00 \\ + 240 \\ \hline 240 \end{array}$$

$$\begin{array}{r} \times 5 \\ 4 \overline{) 20} \\ \underline{-20} \\ 00 \end{array}$$

$$\begin{array}{r} \times 24 \\ 10 \overline{) 240} \\ \underline{-200} \\ 40 \\ \underline{-40} \\ 00 \end{array}$$

Answer 24 teaspoons

## Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The total amount of water in all tanks, in quarts, is correctly calculated; however, the obtained answer is not converted to gallons, prior to dividing by 10, resulting in an incorrect solution. This response correctly addresses only some elements of the task.

# GUIDE PAPER 7

39

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

*Show your work.*

A handwritten multiplication problem is shown in a box. The problem is  $12 \times 20 = 240$ . The numbers are written in a simple, slightly messy style. The multiplication is set up with 12 on top and 20 below it, with a horizontal line between them. The product 240 is written below the line. The digits are somewhat irregular, with the 0s being quite large and the 2s being smaller.

Kallie will use a total of 240 teaspoons of water conditioner for all the water in the 12 tanks

**Answer**

teaspoons

## 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 total amount of water in all tanks, in quarts, is correctly calculated; however, the answer is incorrectly interpreted as the total number of teaspoons. Holistically, the work shows no overall understanding.

Kallie works at a pet store. Part of her job is to add the correct amount of water conditioner to each fish tank. The list below provides information about the number of fish tanks and the amount of water conditioner she uses.

- There are 12 fish tanks that need water conditioner.
- Each fish tank is filled with 20 quarts of water.
- For every 10 gallons of water, Kallie uses 1 teaspoon of water conditioner.

What is the total number of teaspoons of water conditioner Kallie will use for all the water in the 12 fish tanks?

Show your work.

Need water conditioner.

||||| |||||

Each fish tank



10 gallons of water

1 teaspoon of water conditioner.

20 quarts of water

$$\begin{array}{r}
 20 \\
 12 \\
 + 10 \\
 \hline
 43
 \end{array}$$

Answer 43 teaspoons

**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 solution is obtained using an incorrect procedure. The work and solution are incorrect.

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

*Show your work.*

**Answer** \_\_\_\_\_ unit(s)

## EXEMPLARY RESPONSE

40

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

*Show your work.*

$$\frac{1}{8} \div 3 = \frac{1}{8} \times \frac{1}{3} = \frac{1}{24} \text{ unit}$$

*or*

$$\frac{1}{8} \times \frac{3}{3} = \frac{3}{24}$$

$$\frac{1}{24} + \frac{1}{24} + \frac{1}{24} = \frac{3}{24}$$

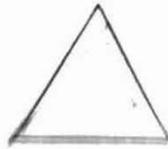
So, each side is  $\frac{1}{24}$  unit.

*or other valid process*

**Answer**            $\frac{1}{24}$            unit(s)

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

*Show your work.*



$$P = \frac{1}{8}$$

sides in a  
triangle

$$\frac{1}{8} \div \frac{3}{1}$$

$$\frac{1}{8} \times \frac{1}{3}$$

$$\left(\frac{1}{24}\right) \text{ unit}$$

check

$$\frac{1}{24} \times 3$$

$$\frac{3}{24} \text{ or } \frac{1}{8}$$

Answer      $\frac{1}{24}$      unit(s)

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

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The length of each side of the triangle is correctly determined using sound procedures. This response is complete and correct.

## GUIDE PAPER 2

40

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

*Show your work.*

$$\frac{1}{24} + \frac{1}{24} + \frac{1}{24} = \frac{3}{24} = \frac{1}{8}$$

3 sides of triangle  
 $1/24 = 1$  side

**Answer**

1/24

unit(s)

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

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The length of each side of the triangle is correctly determined using addition and calculating an equivalent fraction. This response is complete and correct.

## GUIDE PAPER 3

40

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

*Show your work.*

$$\frac{1}{8} \div 3 = \frac{1}{24} \triangle$$

**Answer**

$$\frac{1}{24}$$

unit(s)

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

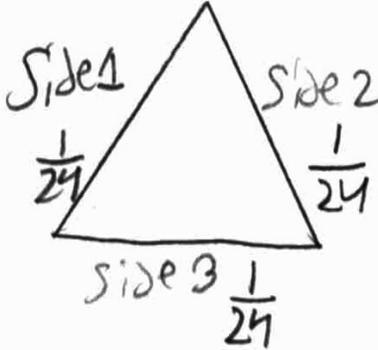
This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The length of each side of the triangle is correctly determined by computing  $\frac{1}{3}$  of the perimeter. The work is sufficient to show a thorough understanding.

# GUIDE PAPER 4

40

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

Show your work.



$$\frac{1}{8} \div 3 = \frac{1}{24}$$

$$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{1}{24}$$

$$\frac{1}{8} \times \frac{1}{3} = \frac{1}{24}$$

$$8 + 8 = 16$$
$$16 + 8 = 24$$

Answer  $\frac{1}{24}$  unit(s)

## Score Point 1 (out of 2 points)

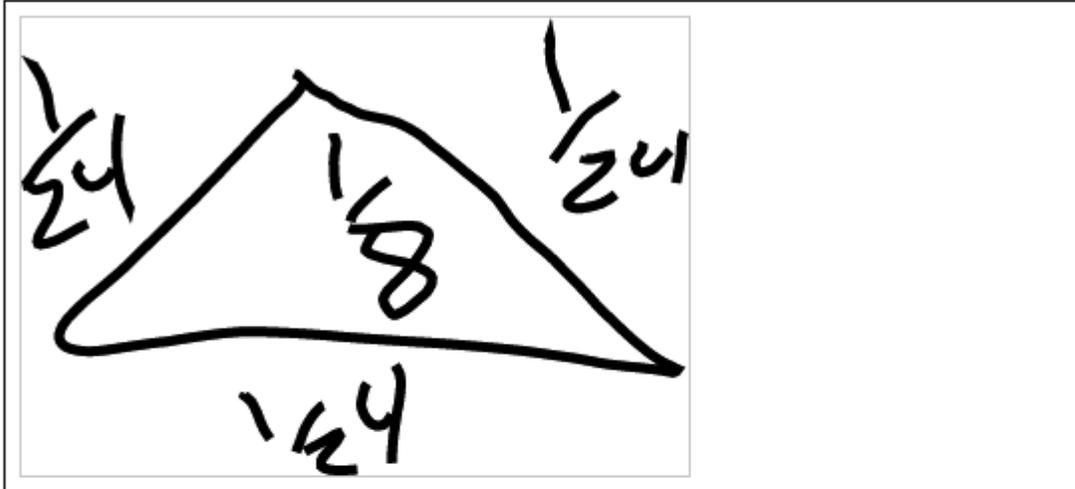
This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Although the length of each side of the triangle is correctly determined and a correct process is shown using division and multiplication, an incorrect equation is provided to obtain the correct solution ( $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} \neq \frac{1}{24}$ ). This response correctly addresses only some elements of the task.

## GUIDE PAPER 5

40

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

*Show your work.*



**Answer**

$$\frac{1}{24}$$

unit(s)

### 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 length of each side of the triangle is correctly identified on the drawing, it is not clear from the work how the solution is obtained. This response contains the correct solution, but the required work is incomplete.

## GUIDE PAPER 6

40

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

Show your work.

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

$$\frac{1}{8} \times \frac{1}{4} = \frac{1}{32}$$

Answer  $\frac{1}{32}$  unit(s)

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

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The work describes a correct process to determine the length of each side of a square instead of the equilateral triangle and shows understanding of how to determine each side of a regular polygon. This response correctly addresses only some elements of the task.

# GUIDE PAPER 7

40

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

*Show your work.*

$\frac{1}{8}$  unit, the length of the triangle is  
 $\frac{1}{8} \div 3 = 6$



The Answer to  
the problem is 6  
because  $\frac{1}{8} \div 3$   
= 6 so in units  
its  $\frac{1}{6}$

**Answer**

unit(s)

## 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 dividing  $\frac{1}{8}$  by 3 is part of the correct process, the division is carried out incorrectly and the rest of the work together with the drawing is incorrect and shows no overall understanding.

40

The perimeter of an equilateral triangle is  $\frac{1}{8}$  unit. What is the length, in units, of each side of the triangle?

*Show your work.*



Answer  $\frac{1}{24}$  unit(s)

**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, the side of the triangle is incorrectly identified as  $\frac{1}{8}$  and the work does not support the obtained solution.

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

***Explain your answer.***

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## EXEMPLARY RESPONSE

41

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

*Explain your answer.*

The value of the digit 4 to the left of the decimal point is four ones or 4. The value of the digit 4 to the right of the decimal point is four tenths or 0.4.

$4 > 0.4$  because 4 is a whole number and 0.4 is part of a whole number.

*or*

The value of the digit 4 to the left of the decimal point is ten times greater than the value of the digit 4 to the right of the decimal point because

$$4 = 0.4 \times 10$$

*or other valid explanation*

41

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

*Explain your answer.*

$$.4 = \frac{4}{10}$$

$$4 > \frac{4}{10}$$

$$4 > .4$$

4 is 10 times greater than .4 or  $\frac{4}{10}$

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

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The values of the digit 4 on both sides of the decimal point are correctly identified. A correct comparison of values is provided. The explanation is complete and correct.

## GUIDE PAPER 2

41

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

*Explain your answer.*

In the number 714.438 the value of the digit 4 to the left of the decimal point is 10 times the value of the 4 to the right of the decimal point.

$$.4 \times 10 = 4$$

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

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The values of the digit 4 on both sides of the decimal point are correctly compared. A correct equation is provided to explain how the two values of the digit 4 compare. The explanation is complete and correct.

# GUIDE PAPER 3

41

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

Explain your answer.

The Four on the left side is a whole number  
on the other hand, the four on the right side is  
part of the whole number, one, since the decimal  
only a part the 0.4 is less than 4.0  
whole numbers P. Decimals  
714 | .438  
(Parts of a whole Number)

4.0 > 0.4

## Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The values of the digit 4 on both sides of the decimal point are correctly compared and a correct explanation in terms of the whole and part of the whole is provided to support the comparison. The explanation is complete and correct.

## GUIDE PAPER 4

41

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

*Explain your answer.*

The value of 4 in the digit to the left of the decimal point compares to the 4 to the right of the decimal point because the 4 to the left of the decimal point is ten times greater than the 4 on the right of the decimal point.

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

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The values of the digit 4 are correctly compared; however, the explanation is incomplete: the two values of the digit 4 are not identified or explained, and it is not clear why the comparison is true. This response correctly addresses only some elements of the task.

## GUIDE PAPER 5

41

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

*Explain your answer.*

the four to the left of the decimal point is greater than the four to the right side of the decimal.  
 $4. > .4$

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

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The two values of the digit 4 are correctly compared; however, these values are not explained, and it is not clear why the comparison is correct. This response correctly addresses only some elements of the task.

## GUIDE PAPER 6

41

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

*Explain your answer.*

the 4 on the right of the decimal  
is 4 tenths. the 4 on the left  
of the decimal is 4 ones.

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

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The two values of the digit 4 are correctly identified; however, the comparison is not provided. This response correctly addresses only some elements of the task.

## GUIDE PAPER 7

41

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

*Explain your answer.*

The 4 in the left is in the one place and the other one is on the tenths place

### 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 place holder description of the digit 4 on both sides of the decimal point is correct, this, by itself, is insufficient to identify or explain the two values of the digit 4. The comparison is not provided. Holistically, the explanation is insufficient to show any understanding.

41

In the number 714.438, how does the value of the digit 4 to the left of the decimal point compare to the value of the digit 4 to the right of the decimal point?

*Explain your answer.*

4=right side > 4=left side

**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 comparison is provided. The explanation shows no understanding.

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each
- pen: \$1.79 each

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

***Show your work.***

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

## EXEMPLARY RESPONSE

42

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each
- pen: \$1.79 each

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

*Show your work.*

$$2.85 \times 5 = \$14.25$$

$$1.79 \times 3 = \$5.37$$

$$14.25 + 5.37 = \$19.62$$

$$20.00 - 19.62 = \$0.38 \text{ in change}$$

*or other valid process*

*Answer* \$ 0.38

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each
- pen: \$1.79 each

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

**Show your work.**

$$2.85 \times 5 = 14.25$$

$$1.79 \times 3 = 5.37$$

$$5.37 + 14.25 = 19.62$$

$$20.00 - 19.62 = 0.38$$

**Answer** \$

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

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The cost of supplies is correctly calculated and subtracted from the paid amount to determine the change. This response is complete and correct.

## GUIDE PAPER 2

42

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each
- pen: \$1.79 each

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

Show your work.

$$\begin{array}{r} 4 \quad 2 \\ 2 \quad 85 \\ + 2.85 \\ \hline 2.85 \\ 2.85 \\ 2.85 \\ \hline 14.25 \end{array}$$

$$\begin{array}{r} 2 \quad 2 \\ 1.79 \\ \times 3 \\ \hline 5.37 \end{array} \quad \begin{array}{r} 2 \quad 2 \\ 1.79 \\ + 1.79 \\ \hline 1.79 \\ 5.37 \end{array} \quad \begin{array}{r} 1 \\ 14.25 \\ + 5.37 \\ \hline 19.62 \end{array}$$
$$\begin{array}{r} 1 \quad 9 \quad 9 \quad 10 \\ 20.00 \\ - 19.62 \\ \hline 00.38 \end{array}$$

Answer \$ 0.38

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

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. Repeated addition is correctly used to determine the costs of notebooks and pens. The amount of change is correctly determined by subtracting the cost of supplies from the paid amount. This response is complete and correct.

# GUIDE PAPER 3

42

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each
- pen: \$1.79 each

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

Show your work.

$$\begin{array}{r}
 42 \\
 \$2.85 \\
 \times 5 \\
 \hline
 \$14.25
 \end{array}$$

notebooks in total

$$\begin{array}{r}
 22 \\
 \$1.79 \\
 \times 3 \\
 \hline
 \$5.37
 \end{array}$$

pens in total

$$\begin{array}{r}
 1 \\
 5.37 \\
 + 14.25 \\
 \hline
 19.62
 \end{array}$$

She will get 38 cents.

$$\begin{array}{r}
 199 \\
 - 19.62 \\
 \hline
 \text{€}38
 \end{array}$$

Answer \$ 38

## Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The cost of supplies is correctly calculated and subtracted from the paid amount to determine the change. The answer in the answer line is taken to be in cents as it is clearly indicated to be in cents in the work. The symbol written by the number 38 when subtracting is understood to represent cents.

# GUIDE PAPER 4

42

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each  $|||||$
- pen: \$1.79 each  $||$

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

Show your work.

The student's work shows a series of subtraction problems. It starts with 20.00 and subtracts 2.85 five times to find the total cost of notebooks (14.25). Then, it subtracts 1.79 three times to find the total cost of pens (5.37). The final result is 0.37.

$$\begin{array}{r} 20.00 \\ - 2.85 \\ \hline 17.15 \\ - 2.85 \\ \hline 14.30 \\ - 2.85 \\ \hline 11.45 \\ - 2.85 \\ \hline 8.60 \\ - 2.85 \\ \hline 5.75 \\ - 1.79 \\ \hline 3.96 \\ - 1.79 \\ \hline 2.17 \\ - 1.79 \\ \hline 0.38 \end{array}$$

Answer \$ 0.37

## Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Repeated subtraction is used to determine the amount of change and the cost of notebooks is correctly subtracted; however, a calculation error occurs when subtracting the cost of the first pen ( $5.75 - 1.79 \neq 3.95$ ), resulting in an incorrect solution. This response contains an incorrect solution but applies a mathematically appropriate process.

## GUIDE PAPER 5

42

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each
- pen: \$1.79 each

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

**Show your work.**

so i did  $2.85 \times 5 = 14.25$  then i did  $1.79 \times 3 = 5.37$  then i did  
 $14.25 + 5.37 = 19.62 - 20.00 = .38$  cents

**Answer** \$

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

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The costs of notebooks and pens are correctly calculated and added to determine the cost of supplies; however, the subtraction is written in an incorrect order when computing the change and the work contains incorrect units by 0.38. This response correctly addresses only some elements of the task.

## GUIDE PAPER 6

42

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each
- pen: \$1.79 each

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

**Show your work.**

i added  $2.85 \times 5$  gave me 14.25 and pen cost is  $1.79 \times 3$  equal 5.37 and the change was 308 cents

**Answer** \$

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

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The cost of notebooks, in dollars, is correctly determined. The cost of supplies is understood to be calculated in cents. Although the correct solution, in cents, is provided in the answer box, an incorrect amount of change is stated in the work and the actual subtraction is not shown. This response correctly addresses only some elements of the task.

# GUIDE PAPER 7

42

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each
- pen: \$1.79 each

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

**Show your work.**

$$\begin{aligned}20 - (2.85 \times 5) + (1.79 \times 3) \\20 - (4.25 + 5.37) \\20 - 9.26 = 10.38 \text{ dollars in change}\end{aligned}$$

**Answer** \$

## 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 parentheses are correctly used around the sum in the second expression, they are omitted in the first expression. The work contains three different calculation errors when determining the solution: the cost of notebooks (4.25), the total cost of supplies (9.26) and the amount of change are calculated incorrectly. Holistically, this response is insufficient to show even a limited understanding.

42

Maddy buys 5 notebooks and 3 pens. The price of each item is listed below.

- notebook: \$2.85 each
- pen: \$1.79 each

Maddy pays for the notebooks and pens with a \$20.00 bill. How much change will Maddy receive?

*Show your work.*

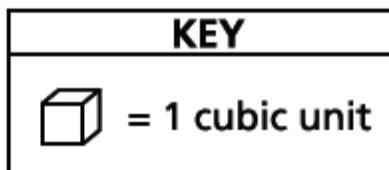
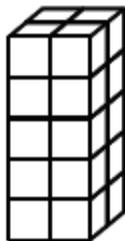
$$\begin{array}{r} \phantom{2} \phantom{.} \phantom{8} \phantom{5} \\ \phantom{2} \phantom{.} \phantom{8} \phantom{5} \\ + 1 \phantom{.} \phantom{7} \phantom{9} \\ \hline 4 \phantom{.} \phantom{6} \phantom{4} \phantom{0} \end{array}$$

Answer \$ 4.64

### 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 cost of one notebook and one pen is calculated. The quantities of supplies and the amount of change are not addressed. The work shows no overall understanding of the task.

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.



What is the total volume, in cubic units, of the 4 towers Colin built?

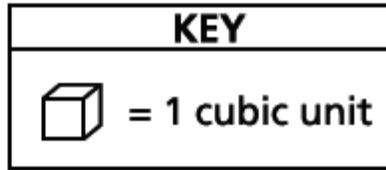
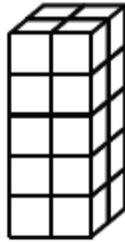
*Show your work.*

**Answer** \_\_\_\_\_ cubic units

## EXEMPLARY RESPONSE

43

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.



What is the total volume, in cubic units, of the 4 towers Colin built?

*Show your work.*

$$V = 2 \times 2 \times 5 = 20 \text{ cubic units}$$

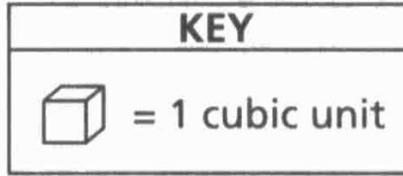
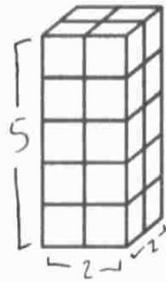
$$\text{Total volume} = 20 \times 4 = 80 \text{ cubic units}$$

*or other valid process*

*Answer*     80     cubic units

43

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.



What is the total volume, in cubic units, of the 4 towers Colin built?

Show your work.

$$V = L \times W \times H$$

$$\begin{matrix} \downarrow & \downarrow & \downarrow \\ 2 & 2 & 5 \end{matrix}$$

I know

---

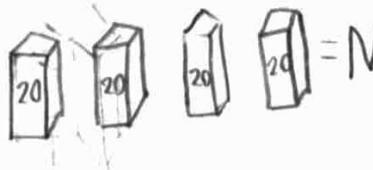

$$V = 2 \times 2 \times 5$$

4 towers

$$2 \times 2 = 4$$

$$4 \times 5 = 20$$

$$\begin{array}{r} \times 20 \\ 4 \\ \hline 80 \end{array}$$



Answer 80 cubic units

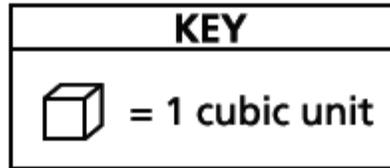
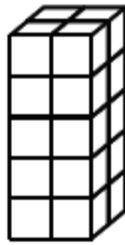
**Score Point 2 (out of 2 points)**

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The volume of one tower is correctly calculated and multiplied by 4 to determine the total volume of all towers. This response is complete and correct.

## GUIDE PAPER 2

43

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.



What is the total volume, in cubic units, of the 4 towers Colin built?

*Show your work.*

$L \times W \times h$   
 $5 \times 2 \times 2$

$5 \times 2 = 10$

$$\begin{array}{r} 10 \\ + 10 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 20 \\ + 20 \\ \hline 40 \end{array}$$

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

**Answer**

80

cubic units

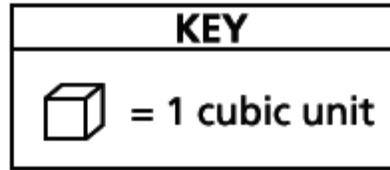
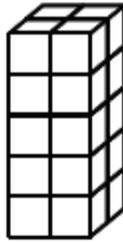
### Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The volume of one tower is correctly calculated and repeated addition is correctly used to determine the total volume of all towers. This response is complete and correct.

# GUIDE PAPER 3

43

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.



What is the total volume, in cubic units, of the 4 towers Colin built?

*Show your work.*

$$10 + 10 = 20$$
$$20 + 20 + 20 + 20 = 80$$

**Answer**

80

cubic units

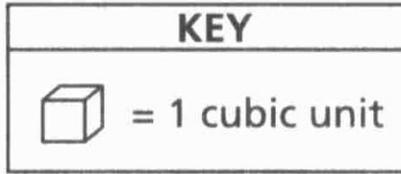
## Score Point 2 (out of 2 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The volume of one tower is correctly calculated by adding the number of blocks in the front and back of the tower. The total volume of all towers is correctly determined using repeated addition. The work is sufficient to show a thorough understanding.

# GUIDE PAPER 4

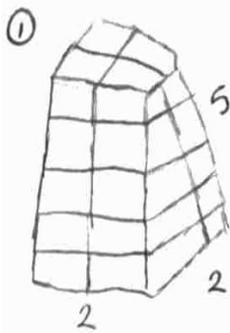
43

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.

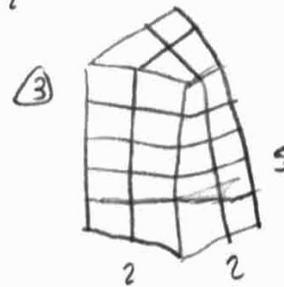
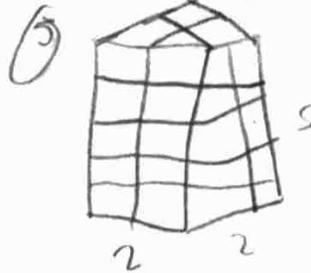
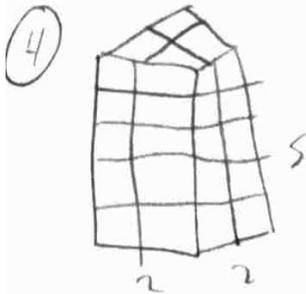
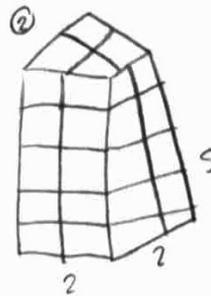


What is the total volume, in cubic units, of the 4 towers Colin built?

Show your work.



$$2 \times 2 \times 5$$



Answer 100 cubic units

$$\begin{array}{r}
 2 \times 2 \times 5 = 20 \\
 2 \times 2 + 5 = 20 \\
 2 + 2 \times 5 = 20 \\
 2 + 2 + 5 = 20 \\
 2 \times 2 \times 5 = 20 \\
 \hline
 100
 \end{array}$$

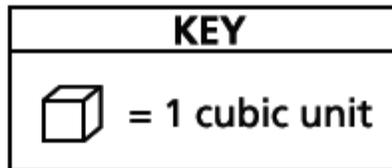
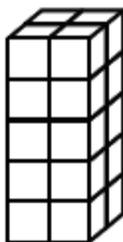
## Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The volume of one tower is correctly calculated; however, the volume of one extra tower is inappropriately added when determining the total volume of all towers. This response correctly addresses only some elements of the task.

# GUIDE PAPER 5

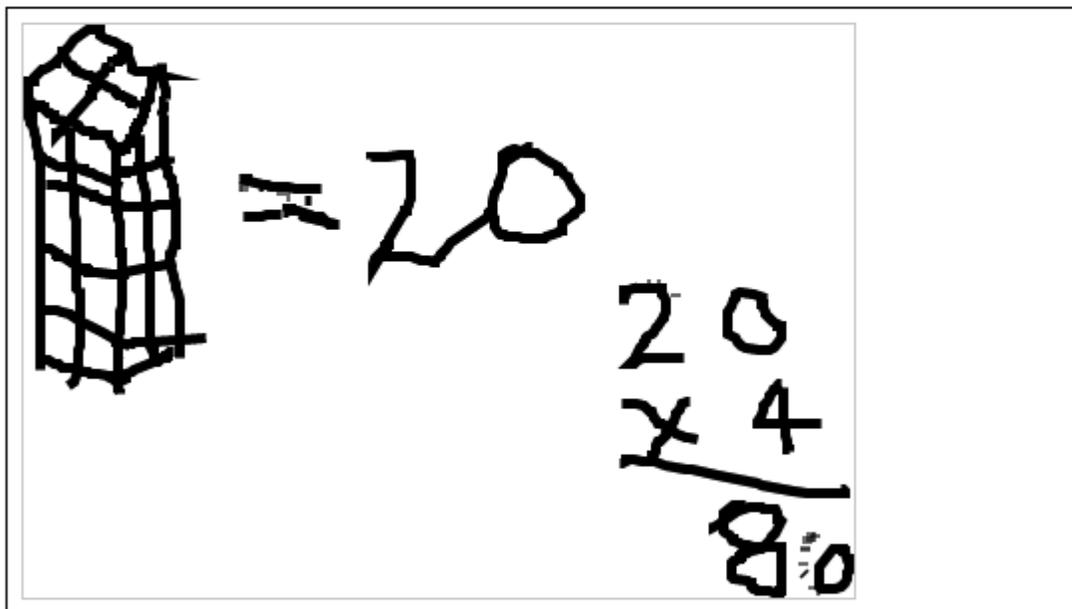
43

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.



What is the total volume, in cubic units, of the 4 towers Colin built?

*Show your work.*



**Answer**

80

cubic units

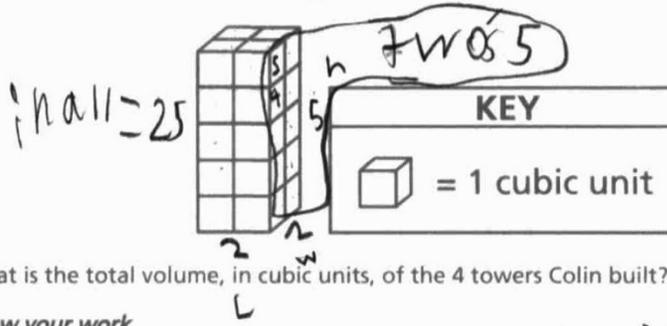
## Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. Although the total volume of all towers is correctly determined, it is not clear from the work how the volume of one tower is calculated. This response contains the correct solution, but the required work is incomplete.

# GUIDE PAPER 6

43

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.



What is the total volume, in cubic units, of the 4 towers Colin built?

Show your work.

$$L \times W \times H$$
$$2 \times 2 \times 5$$

$$5 \times 2 = 10 \times 2 = 20$$

but in all is

$$25 \quad 50 \quad 20$$

x the other 5

$$= 25.$$

Answer 25 cubic units

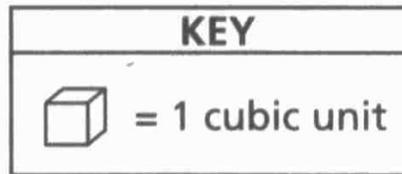
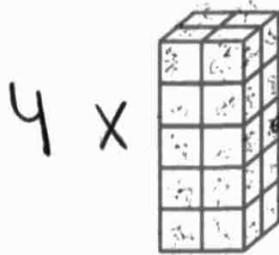
## Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The volume of one tower is correctly calculated; however, an incorrect solution is provided for the total volume of all towers and it is not clear how it is obtained. This response correctly addresses only some elements of the task.

# GUIDE PAPER 7

43

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.



What is the total volume, in cubic units, of the 4 towers Colin built?

*Show your work.*

$$\begin{array}{r} 1 \\ 44 \\ 94 \\ 94 \\ 444 \\ \hline 176 \end{array}$$

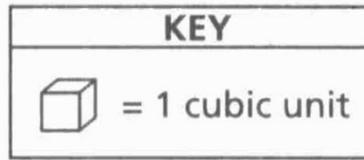
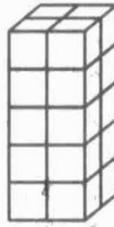
Answer 176 cubic units

## 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. The volume of one tower is incorrectly calculated, and it is not clear from the work how this incorrect volume is obtained. Although the calculated volume is correctly added four times, holistically, the work is insufficient to show any understanding.

43

Colin built 4 identical towers using unit cubes. One of the towers is pictured below.



What is the total volume, in cubic units, of the 4 towers Colin built?

Show your work.

$$5 \times 2 = 10$$

Answer 10 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 determine the volume of the tower. The total volume of all towers is not addressed. The work shows no overall understanding.

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

*Show your work.*

*Answer* \_\_\_\_\_ miles

## EXEMPLARY RESPONSE

44

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

*Show your work.*

$$3\frac{1}{2} = \frac{7}{2} = \frac{28}{8}$$

$$\frac{3}{4} = \frac{6}{8}$$

$$1\frac{1}{8} + \frac{3}{4} = \frac{9}{8} + \frac{6}{8} = \frac{15}{8} \text{ miles} = 1\frac{7}{8} \text{ miles}$$

$$3\frac{1}{2} - \frac{15}{8} = \frac{28}{8} - \frac{15}{8} = \frac{13}{8} = 1\frac{5}{8} \text{ miles}$$

*or*

$$\begin{aligned} 3\frac{1}{2} - (1\frac{1}{8} + \frac{3}{4}) &= \frac{28}{8} - \frac{9}{8} - \frac{6}{8} \\ &= \frac{13}{8} = 1\frac{5}{8} \text{ miles} \end{aligned}$$

*or other valid process*

**Answer**  $1\frac{5}{8}$  or  $\frac{13}{8}$  miles

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

Show your work.

$$1\frac{1}{8} + \frac{3}{4}$$

$$\frac{9}{8} + \frac{3}{4}$$

$$\frac{9}{8} + \frac{6}{8} = \frac{15}{8} = 1\frac{7}{8}$$

$$3\frac{1}{2} - 1\frac{7}{8}$$

$$3\frac{4}{8} - 1\frac{7}{8}$$

$$\frac{28}{8} - \frac{15}{8} = \frac{13}{8} = 1\frac{5}{8}$$

$1\frac{5}{8}$  miles

Answer      $1\frac{5}{8}$      miles

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

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The two distances that Sam walks are correctly added, and the remaining distance that needs to be walked to reach the goal is correctly determined using sound procedures. This response is complete and correct.

## GUIDE PAPER 2

44

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

*Show your work.*

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

$$2\frac{3}{8} - \frac{3}{4} = \frac{13}{8} \text{ or } 1\frac{5}{8}$$

$$2\frac{3}{8} = \frac{19}{8}$$

$$\frac{3}{4} = \frac{6}{8}$$

*Answer*

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

miles

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

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The two distances that Sam walks are correctly subtracted from his goal to determine the solution. This response is complete and correct.

## GUIDE PAPER 3

44

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

*Show your work.*

$$1\frac{1}{8} + \frac{3}{4} = 1\frac{7}{8}$$
$$3\frac{1}{2} - 1\frac{7}{8} = 1\frac{5}{8}$$

*Answer*

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

miles

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

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The two distances that Sam walks are correctly added, and the obtained answer is correctly subtracted from his goal to determine the solution. This response is sufficient to show a thorough understanding.

# GUIDE PAPER 4

44

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

Show your work.

$$\frac{3}{4} \times \frac{2}{2} = \frac{6}{8} \quad 4 \text{ (8)}$$

$$\frac{1}{2} \times \frac{4}{4} = \frac{4}{8} \quad 2 \text{ (8)}$$

$$\frac{6}{8} + \frac{4}{8} = \frac{10}{8}$$

$$3\frac{1}{2} - 1\frac{10}{8} = 1\frac{5}{8}$$

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

## Score Point 1 (out of 2 points)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The two distances that Sam walks are correctly added, and the correct solution is provided; however, the subtraction is written in an incorrect order when determining the remaining distance that needs to be walked. This response correctly addresses only some elements of the task.

## GUIDE PAPER 5

44

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

Show your work.

$$3\frac{1}{2} - \left( \frac{1}{8} + \frac{3}{4} \right)$$

$$1\frac{2}{4} + \frac{3}{4} = 1\frac{5}{4} = 2\frac{1}{4}$$

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

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

Answer   $1\frac{1}{4}$   miles

### 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 expression is written to determine the remaining distance that needs to be walked; however, the fraction  $\frac{1}{8}$  is incorrectly converted to  $\frac{2}{4}$  when adding the two numbers inside the parentheses. The rest of the work to determine the remaining distance is correct. This response contains an incorrect solution but applies a mathematically appropriate process.

## GUIDE PAPER 6

44

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

*Show your work.*

$$\begin{array}{r} 1\frac{1}{8} \\ + \\ \frac{3}{4} \\ \hline 1\frac{7}{8} \end{array}$$

*Answer*

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

miles

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

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task. The two distances that Sam walks are correctly added; however, the remaining distance that needs to be walked to reach the goal is not calculated. This response correctly addresses only some elements of the task.

## GUIDE PAPER 7

44

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

*Show your work.*

$$1\frac{1}{8} + \frac{3}{4} = 1\frac{4}{12} - 3\frac{1}{2} = 1\frac{7}{12}$$

*Answer*

$$1\frac{7}{12}$$

miles

### 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 addition and subtraction operations are shown, addition is performed incorrectly with numerators and denominators inappropriately added, and the subtraction is written in an incorrect order, and is incorrectly carried out. Holistically, this response shows no overall understanding of the task.

44

Sam has a goal of walking  $3\frac{1}{2}$  miles by the end of the day. He walks  $1\frac{1}{8}$  miles before lunch and  $\frac{3}{4}$  mile after resting. What is the remaining distance, in miles, that Sam needs to walk to reach his goal?

*Show your work.*

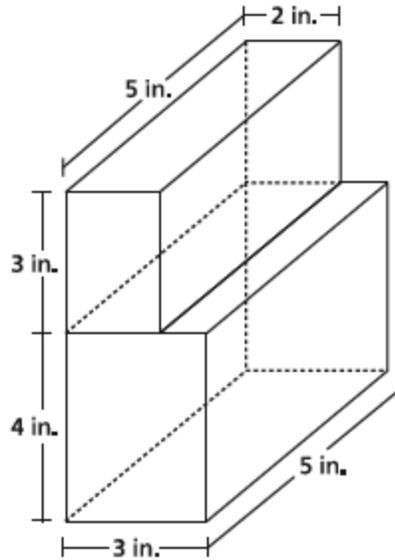
$$1\frac{1}{8} + \frac{3}{4} = 2\frac{4}{12}$$

*Answer* \_\_\_\_\_ miles

### 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 two distances that Sam walks are added incorrectly and the remaining distance that needs to be walked to reach the goal is not addressed.

A diagram of two rectangular prisms is shown below.



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

**Answer**

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If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

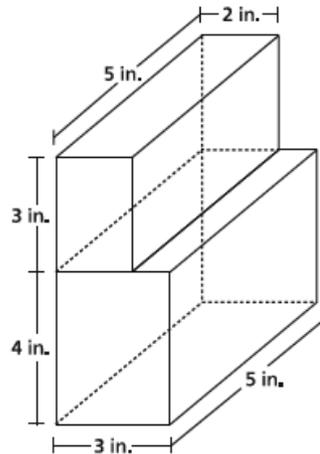
**Show your work.**

**Answer** \_\_\_\_\_ cubic inches

# EXEMPLARY RESPONSE

45

A diagram of two rectangular prisms is shown below.



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

**Answer**

First, I determine the volume of the top prism. Then, I determine the volume of the bottom prism. Finally, I add the products to determine the combined volume.

$$5 \times 2 \times 3 = 30 \text{ cubic inches}$$

$$5 \times 3 \times 4 = 60 \text{ cubic inches}$$

$$30 + 60 = 90 \text{ cubic inches}$$

*or other valid explanation*

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

**Show your work.**

$$5 \times 2 \times 4 = 40 \text{ cubic inches}$$

$$40 - 30 = 10 \text{ cubic inches difference}$$

*or*

$$5 \times 2 \times 4 = 40 \text{ cubic inches}$$

$$40 + 60 = 100 \text{ cubic inches}$$

$$100 - 90 = 10 \text{ cubic inches difference}$$

*or*

$$4 - 3 = 1 \text{ inch difference in height between top prisms}$$

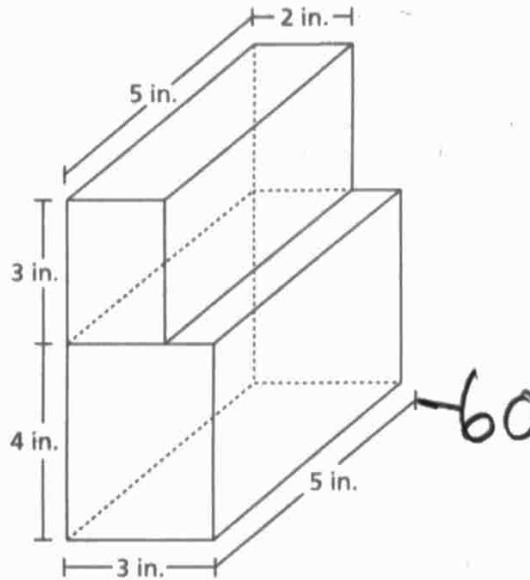
$$1 \times 2 \times 5 = 10 \text{ cubic inches difference in volume}$$

*or other valid process*

**Answer** 10 cubic inches

A diagram of two rectangular prisms is shown below.

$L \times W \times H$



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

Answer

the total volume combined is 90 because in the bottom I did  $3 \times 5 \times 4 = 60$  The in top  $2 \times 5 \times 3 = 30 = 30 + 60 = 90$

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

Show your work.

60

$$\begin{array}{r} 60 \\ + 40 \\ \hline 100 \end{array} \quad \begin{array}{r} 40 \\ - 30 \\ \hline 10 \end{array}$$

$$2 \times 5 \times 4 = 40$$

Answer 10 cubic inches

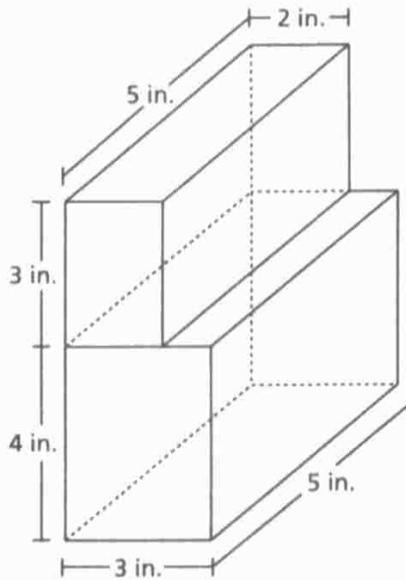
**Score Point 3 (out of 3 points)**

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The combined volume is correctly calculated, and a correct explanation of the process is provided. The difference in volume is correctly determined by subtracting the original prism volume from the new prism volume. This response is complete and correct.

# GUIDE PAPER 2

45

A diagram of two rectangular prisms is shown below.



$$\begin{array}{r} 2 \\ 15 \\ \times 4 \\ \hline 60 \end{array}$$

Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

*Answer*

First you do  $3 \times 5 \times 4$ , which is 60. Then you do  $5 \times 2 \times 3$  which is 30. Lastly you do  $60 + 30$  which is 90. 90 is your answer.

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

*Show your work.*

$$5 \times 2 \times 4 = 40$$

$$60 + 40 = 100$$

*Answer* 10 cubic inches

$$\begin{array}{r} 100 \\ - 90 \\ \hline 10 \end{array}$$

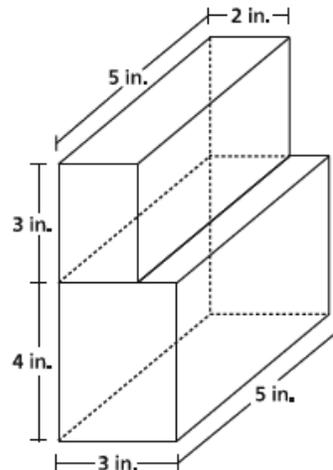
## Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The combined volume is correctly calculated, and a correct explanation of the process is provided. The difference in volume between the new and original prisms is correctly determined by comparing the new and original combined volumes. This response is complete and correct.

# GUIDE PAPER 3

45

A diagram of two rectangular prisms is shown below.



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

**Answer**

The process for determining the volume of the two prisms is finding the volume of the two prisms with the formula  $l \times w \times h$  and add them together. Like  $5 \times 2 \times 3 = 30$ ,  $5 \times 3 \times 4 = 60$  and then adding  $30 + 60$  to get 90 the total volume of the two shapes.

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

**Show your work.**

$$\begin{aligned} 5 \times 2 \times 4 &= 40 & 40 + 60 &= 100 \\ 5 \times 3 \times 4 &= 60 \end{aligned}$$

The answer would be 10 cubic inches more if the top prism was 4 inches taller instead of 3 inches tall.

**Answer** cubic inches

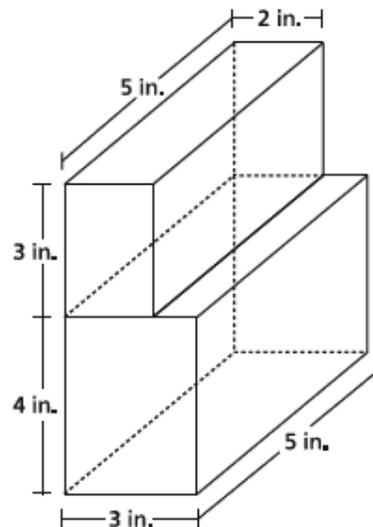
## Score Point 3 (out of 3 points)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task. The combined volume is correctly calculated, and a correct explanation of the process is provided. The volumes of the new prism and the new combined figure are correctly determined and the correct difference in volume is provided as the solution. Although the last step of calculating the difference is not shown, the response contains sufficient work to demonstrate a thorough understanding.

# GUIDE PAPER 4

45

A diagram of two rectangular prisms is shown below.



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

**Answer**

1. separate the rectangle into 2 rectangles
2. next multiply  $3 \times 4 \times 5$  for the first rectangle
3. then multiply  $3 \times 2 \times 5$  for the 2nd rectangle
4. lastly add all the products up

the answer is 90 cu in

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

**Show your work.**

$$4 \times 3 \times 5 = 60$$
$$4 \times 2 \times 5 = 40$$

**Answer**

the difference is  
10 cubic inches.

cubic inches

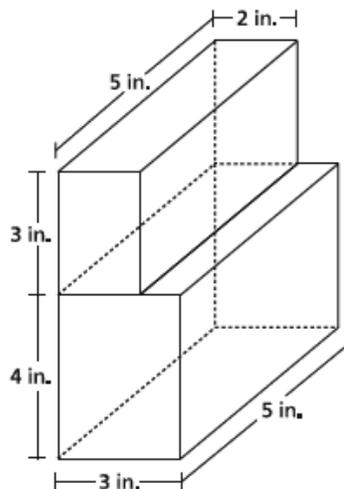
## Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. The original combined volume is correctly calculated, and a correct explanation of the process is provided. The volume of the new prism is correctly determined and the correct solution for the difference in volume is provided; however, it is not clear from the work which volumes are compared to arrive at the correct solution: the volumes of the original prism and the new combined figure are not calculated. This response appropriately addresses most but not all aspects of the task.

# GUIDE PAPER 5

45

A diagram of two rectangular prisms is shown below.



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

**Answer**

The formula to find the volume of a rectangular prism is  $l \times w \times h$ .  
There are two rectangular prisms.  
The formulas are:  $3 \times 5 \times 2 = a$   
And:  $4 \times 3 \times 5 = b$   
 $A = 30, B = 60$   
Now I have to add A and B.  
 $30 + 60 = 90$  cu in

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

**Show your work.**

Then the formulas would be:  $4 \times 5 \times 2 = A$   
And:  $4 \times 3 \times 5 = B$   
 $A = 40, B = 60$   
Now I have to subtract B and A.  
 $60 - 40 = 20$  cu in

**Answer**

20

cubic inches

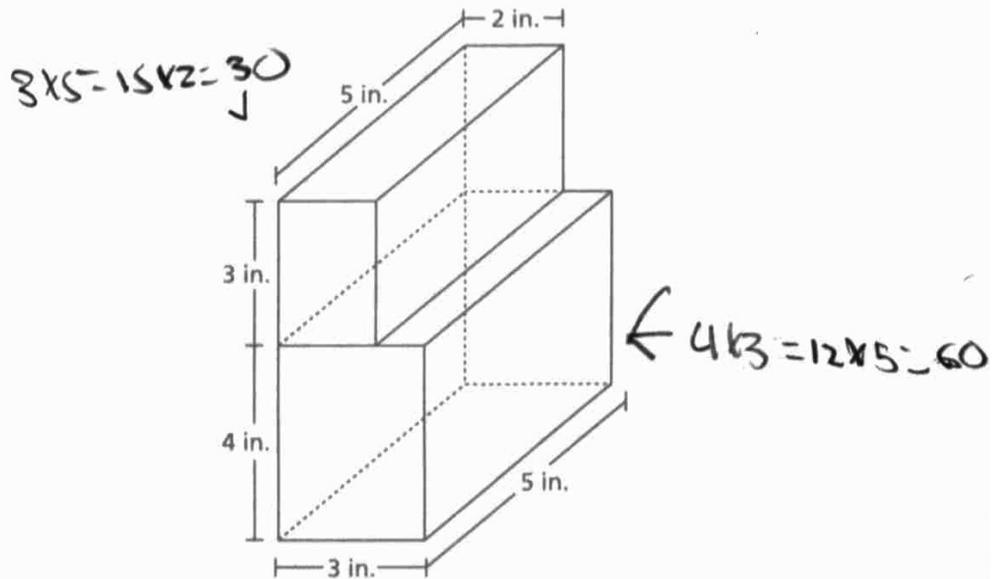
## Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. The original combined volume is correctly calculated, and a correct explanation of the process is provided. The volume of the new prism is correctly determined; however, it is compared with the volume of the bottom prism instead of the volume of the original top prism. This response reflects some minor misunderstanding of the task.

# GUIDE PAPER 6

45

A diagram of two rectangular prisms is shown below.



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

*Answer*

The bottom rectangle has a volume of 60 and that top has 30 when combined the total volume is 90.

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

*Show your work.*

$$4 \times 5 = 20 \times 2 = 40$$

*Answer* 40 cubic inches

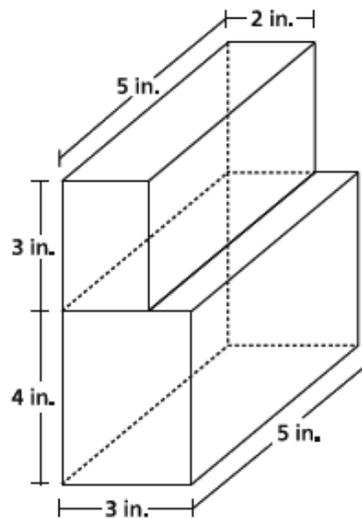
## Score Point 2 (out of 3 points)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task. The original combined volume is correctly calculated, and a correct explanation of the process is provided. The volume of the new prism is correctly determined; however, the difference in volume is not calculated. This response appropriately addresses most but not all aspects of the task.

# GUIDE PAPER 7

45

A diagram of two rectangular prisms is shown below.



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

**Answer**

first you have to split the prisms apart then you do prism A you do prism A by doing length (5) time with(2) time hight (3)and you would get 30 so 30 would be the volume of prisim A.Next you have tho find out the folume of prisim B you do that by doing length(5) times with(3) times hight(4) and you would get 60 so 60 would be the volume of prisim B. tast you add prismA and prism B together and you would get 90 so the combinded volume of both prism A and B would be 90.

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

**Show your work.**

$$\begin{aligned}5 \times 2 &= 10 \\10 \times 3 &= 30 \\5 \times 3 &= 15 \\15 \times 4 &= 60 \\30 + 60 &= 90\end{aligned}$$

**Answer**

90

cubic inches

## Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. The original combined volume is correctly calculated, and a correct explanation of the process is provided. The volume of the new prism and the difference in volume are not addressed. This response addresses some elements of the task correctly but is incomplete.

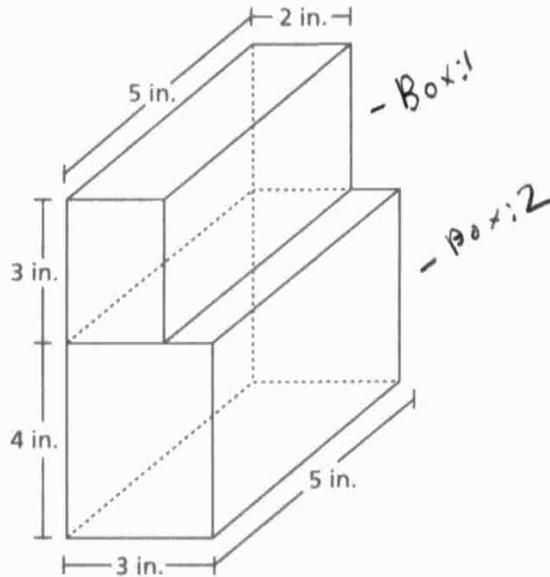
A diagram of two rectangular prisms is shown below.

Volume: 1

$$\begin{array}{r} 3 \times 5 \times 2 = 30 \\ \checkmark \\ 15 \times 2 \\ \hline 30 \end{array}$$

Volume: 2

$$\begin{array}{r} 4 \times 3 \times 5 = 60 \\ \checkmark \\ 12 \times 5 \\ \hline 60 \end{array}$$



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

Answer

They are not comiend because Volume 1 is 30 and Volume:2 is 60. So it is not comined.

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

Show your work.

0 ~~3 x 5 x 2~~ into  $\begin{array}{r} 4 \times 5 \times 2 \\ \checkmark \\ 20 \times 2 \\ \hline 40 \end{array}$

Answer 40 cubic inches

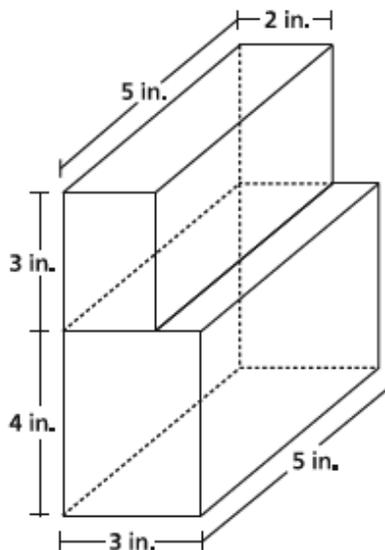
Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. The volumes of the original prisms and the new prism are correctly calculated; however, the combined volume and the difference in volume are not determined. This response addresses some elements of the task correctly but is incomplete.

# GUIDE PAPER 9

45

A diagram of two rectangular prisms is shown below.



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

**Answer**

$$4 \times 3 \times 5 = 100$$

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

**Show your work.**

$$3 \times 5 \times 2 = 30$$

**Answer**

130

cubic inches

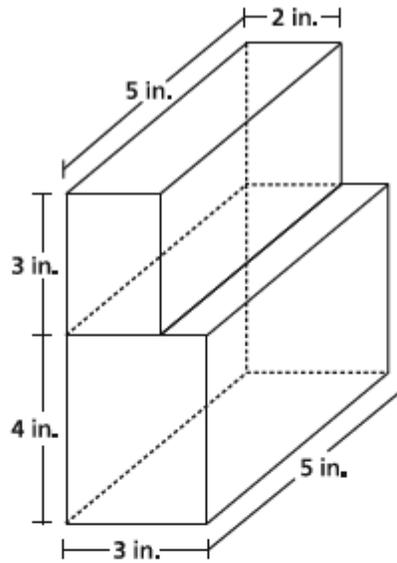
## Score Point 1 (out of 3 points)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task. A correct process is shown to calculate the volumes of the original top and bottom rectangular prisms; however, a calculation error occurs when determining the bottom prism volume. The obtained products are correctly added to determine the combined volume of the two prisms. The volume of the new prism and the difference in volume are not calculated. This response addresses some elements of the task correctly but reaches an inadequate solution and is incomplete. Per Scoring Policy #1, the work shown in other than a designated “Show your work” or “Explain” area should still be scored.

# GUIDE PAPER 10

45

A diagram of two rectangular prisms is shown below.



Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

**Answer**

The first cube is 30 because 5 times 3 eqles 15 times 3 eqles 30.

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

**Show your work.**

$$4 \times 3 = 12 \times 5 = 60$$

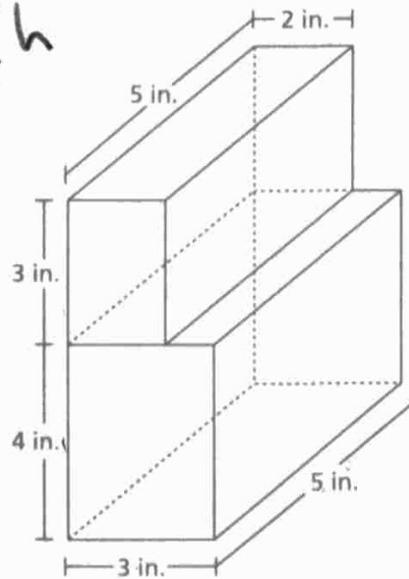
**Answer**  cubic inches

## 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. Incorrect dimensions are used to calculate the volume of the top prism. It is not clear if the work is addressing the volume of the bottom prism or the new prism. The combined volume and the difference in volume are not addressed. Holistically, the work shows no overall understanding.

A diagram of two rectangular prisms is shown below.

$V = l \times w \times h$



2  
360  
360  
360  
+ 360  
-----  
1440  
+ 360  
-----  
1800

Explain the process for determining the combined volume of the two prisms. Be sure to include the total volume in your answer.

Answer

I the volume combin. is 1,800<sup>cu in</sup> I think and the bottom prism is 60<sup>cu in</sup> and the top is 30 cubic inches

If the prism on top of the figure was 4 inches tall instead of 3 inches tall, what would be the difference between the volume of the original prism on top and the new prism on top?

Show your work.

The volume would change to 40 cubic inches

Answer 40 cubic inches

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 correct volumes of prisms are stated, the explanation of the process to determine the combined volume is incorrect, the calculated volumes are not supported with work or explanation and the difference in volume is not addressed.

