New York State Testing Program

2025

Mathematics Test

Grade **6**

Scoring Leader Materials

Training Set

Note to Scorers

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

Example: Stem of the question. [2]

Grade 6 Mathematics Reference Sheet
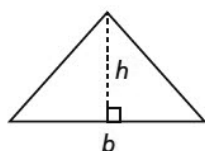
CONVERSIONS

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

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

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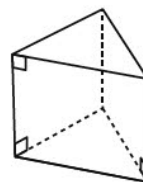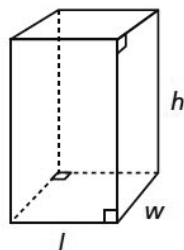1 kilogram = 1,000 grams

FORMULAS AND FIGURES

Triangle

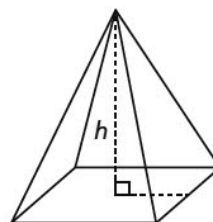$A = \frac{1}{2}bh$

Right Triangular Prism

Right Rectangular Prism

$V = lwh$
$V = Bh$

Right Rectangular Pyramid

1-Credit Constructed-Response Rubric

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

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

2-Credit Constructed-Response Holistic Rubric

2 Credits	A 2-credit response includes the correct solution to the question and demonstrates a thorough understanding of the mathematical concepts and/or procedures in the task. This response • indicates that the student has completed the task correctly, using mathematically sound procedures • contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures • may contain inconsequential errors that do not detract from the correct solution and the demonstration of a thorough understanding
1 Credit	A 1-credit response demonstrates only a partial understanding of the mathematical concepts and/or procedures in the task. This response • correctly addresses only some elements of the task • may contain an incorrect solution but applies a mathematically appropriate process • may contain the correct solution but required work is incomplete
0 Credits*	A 0-credit response is incorrect, irrelevant, incoherent, or contains a correct solution obtained using an obviously incorrect procedure. Although some elements may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

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

3-Credit Constructed-Response Holistic Rubric

3 Credits	A 3-credit response includes the correct solution(s) to the question and demonstrates a thorough understanding of the mathematical concepts and/or procedures in the task. This response • indicates that the student has completed the task correctly, using mathematically sound procedures • contains sufficient work to demonstrate a thorough understanding of the mathematical concepts and/or procedures • may contain inconsequential errors that do not detract from the correct solution(s) and the demonstration of a thorough understanding
2 Credits	A 2-credit response demonstrates a partial understanding of the mathematical concepts and/or procedures in the task. This response • appropriately addresses most but not all aspects of the task using mathematically sound procedures • may contain an incorrect solution but provides sound procedures, reasoning, and/or explanations • may reflect some minor misunderstanding of the underlying mathematical concepts and/or procedures
1 Credit	A 1-credit response demonstrates only a limited understanding of the mathematical concepts and/or procedures in the task. This response • may address some elements of the task correctly but reaches an inadequate solution and/or provides reasoning that is faulty or incomplete • exhibits multiple flaws related to misunderstanding of important aspects of the task, misuse of mathematical procedures, or faulty mathematical reasoning • reflects a lack of essential understanding of the underlying mathematical concepts • may contain the correct solution(s) but required work is limited
0 Credits*	A 0-credit response is incorrect, irrelevant, incoherent, or contains a correct solution obtained using an obviously incorrect procedure. Although some elements may contain correct mathematical procedures, holistically they are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

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

1-Credit Constructed-Response Mathematics Scoring Policies

1. The student is **not** required to show work for a 1-credit constructed-response question, therefore, any work shown will **not** be scored. A clearly identified correct response should still receive full credit.

2. If the student clearly identifies a correct answer but fails to write that answer in the answer space, the student should still receive full credit.

3. If the student provides one legible response (and one response only), the rater should score the response, even if it has been crossed out.

4. If the student has written more than one response but has crossed some out, the rater should score only the response that has **not** been crossed out.

5. If the student provides more than one response but does not indicate which response is to be considered the correct response and none have been crossed out, the student shall not receive credit.

6. If the student does not provide the answer in the form as directed in the question, the student will not receive credit.

7. In questions requiring number sentences, the number sentences must be written horizontally.

8. When measuring angles with a protractor, there is a +/- 5 degrees deviation allowed of the true measure.

9. Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted). This is not to be confused with a score of zero wherein the student does respond to part or all of the question, but that work results in a score of zero.

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

1. If a student shows the work in other than a designated "Show your work" or "Explain" area, that work should still be scored.

2. If the question requires students to show their work, and the student shows appropriate work and clearly identifies a correct answer but fails to write that answer in the answer space, the student should still receive full credit.

3. If students are directed to show work or provide an explanation, a correct answer with **no** work shown or **no** explanation provided, receives **no** credit.

4. If students are **not** directed to show work, any work shown will **not** be scored. This applies to questions that do **not** ask for any work and questions that ask for work for one part and do **not** ask for work in another part.

5. If the student provides one legible response (and one response only), the rater should score the response, even if it has been crossed out.

6. If the student has written more than one response but has crossed some out, the rater should score only the response that has **not** been crossed out.

7. If the student provides more than one response, but does not indicate which response is to be considered the correct response and none have been crossed out, the student shall not receive full credit.

8. Trial-and-error responses are **not** subject to Scoring Policy #6 above, since crossing out is part of the trial-and-error process.

9. If a response shows repeated occurrences of the same conceptual error within a question, the conceptual error should **not** be considered more than once in gauging the demonstrated level of understanding.

10. In questions requiring number sentences, the number sentences must be written horizontally.

11. When measuring angles with a protractor, there is a +/- 5 degrees deviation allowed of the true measure.

12. Condition Code A is applied whenever a student who is present for a test session leaves an entire constructed-response question in that session completely blank (no response attempted). This is not to be confused with a score of zero wherein the student does respond to part or all of the question but that work results in a score of zero.

37

Mr. Kamski has 6 students in his class who play an instrument. These students represent 24% of the total number of students in his class. What is the total number of students in his class?

Answer _____ students

37

Mr. Kamski has 6 students in his class who play an instrument. These students represent 24% of the total number of students in his class. What is the total number of students in his class?

Answer _____ 25 _____ students

37

Mr. Kamski has 6 students in his class who play an instrument. These students represent 24% of the total number of students in his class. What is the total number of students in his class?

$$24 \div 4 = 6$$
$$100 \div 4 = 25$$

Answer 25 students

Score Credit 1 (out of 1 credit)

A correct answer is provided.

37

Mr. Kamski has 6 students in his class who play an instrument. These students represent 24% of the total number of students in his class. What is the total number of students in his class?

25

Answer [   ] students

Score Credit 1 (out of 1 credit)

A correct answer is provided.

37

Mr. Kamski has 6 students in his class who play an instrument. These students represent 24% of the total number of students in his class. What is the total number of students in his class?

$$\frac{24}{100} \quad \frac{6.}{x}$$

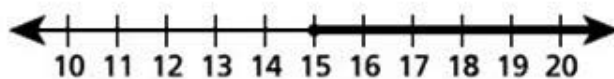$$\frac{24x}{24} \, x = \frac{60}{24} = \boxed{2\,2}$$

Answer _____ students

Score Credit 0 (out of 1 credit)

An incorrect answer is provided.

38

The solution set for an inequality is represented on the number line shown below.
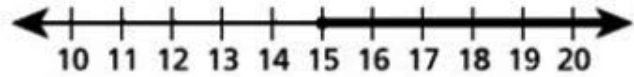

Using the variable *x*, write an inequality that describes the solution set represented on the number line.

Answer _____

38

The solution set for an inequality is represented on the number line shown below.

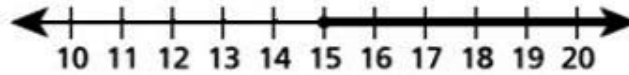Using the variable x, write an inequality that describes the solution set represented on the number line.

Answer $\underline{x \geq 15 \ OR \ 15 \leq x}$

38

The solution set for an inequality is represented on the number line shown below.

Using the variable *x*, write an inequality that describes the solution set represented on the number line.
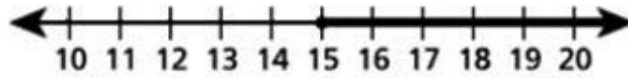
Answer $15 \leq x$

Score Credit 1 (out of 1 credit)

A correct answer is provided.

38

The solution set for an inequality is represented on the number line shown below.

Using the variable *x*, write an inequality that describes the solution set represented on the number line.
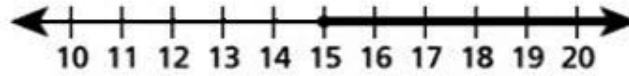
$$x \geq 15$$

Answer

Score Credit 1 (out of 1 credit)

A correct answer is provided.

38

The solution set for an inequality is represented on the number line shown below.

10 11 12 13 14 15 16 17 18 19 20

Using the variable x, write an inequality that describes the solution set represented on the number line.

Answer x > 15

Score Credit 0 (out of 1 credit)

An incorrect answer is provided.

39

What is the greatest common factor of 72 and 96 ?

Answer _____

39

What is the greatest common factor of 72 and 96 ?

Answer _____24_____

39

What is the greatest common factor of 72 and 96 ?

Answer

Score Credit 1 (out of 1 credit)

A correct answer is provided.

39

What is the greatest common factor of 72 and 96 ?

Answer 24

Score Credit 1 (out of 1 credit)

A correct answer is provided.

39

What is the greatest common factor of 72 and 96 ?

Answer:
the greatest common factor for 72 is 18.
the greagest common factor for 96 is 24

Score Credit 0 (out of 1 credit)

An incorrect answer is provided.

40

What is the value of the expression $4(3 + 5^2) - 6$?

Show your work.

Answer _____

40

What is the value of the expression $4(3 + 5^2) - 6$?

Show your work.

$4(3 + 5^2) - 6 = 4(3 + 25) - 6 = 4 \times 28 - 6 = 112 - 6 = 106$

OR

$4(3 + 5^2) - 6 = 4(3 + 25) - 6 = 12 + 100 - 6 = 112 - 6 = 106$

OR Other valid process

Answer _____106_____

40

What is the value of the expression $4(3 + 5^2) - 6$?

Show your work.

$$4(3+5^2)-6$$
$$4(3+25)-6$$
$$4(28)-6$$
$$112 - 6$$

Answer Answer = 106

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
- The value of the expression is correctly determined using sound procedures.

This response is complete and correct.

40

What is the value of the expression $4(3 + 5^2) - 6$?

Show your work.

$5 \times 5+3=28 \times 4 = 112 - 6=106$

Answer 106

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.

- The value of the expression is correctly determined using sound procedures.
- The run-on equation does not detract from the demonstration of a thorough understanding.

This response contains sufficient work to demonstrate a thorough understanding.

40

What is the value of the expression $4(3 + 5^2) - 6$?

Show your work.

$4(3 + 5^2) - 6$
$4(28) - 6$
$112 - 6$
106

Answer 106

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
- The value of the expression is correctly determined using sound procedures.

Although the step of evaluating the exponent is not explicitly shown, this response contains sufficient work to demonstrate a thorough understanding.

40

What is the value of the expression $4(3 + 5^2) - 6$?

Show your work.

P	$4(3+ 52)-6$
E	$4(3+10)-6$
M	$4(13)-6$
D	$52-6$
A	46
S	

Answer 46

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.

- An error occurs when 5^2 is incorrectly evaluated as equal to 10 instead of 25.
- The rest of the work evaluating the expression is carried out correctly using sound procedures.

This response correctly addresses only some elements of the task.

40

What is the value of the expression $4(3 + 5^2) - 6$?

Show your work.

PEMDAS
(perentisise,exspoinets,mutiplication,addition,subtractstion)
$3 + 5 \times 5 = 25$
$4 \times 25 = 100$
100-6= 94
X=94

Answer 94

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.
- Sound procedures are used when determining the value of the expression; however, a calculation error occurs when evaluating the expression in parentheses resulting in an incorrect solution.

This response contains an incorrect solution but applies a mathematically appropriate process.

40

What is the value of the expression $4(3 + 5^2) - 6$?

Show your work.

$$4(3+5^2)-6$$
$$8^2$$
$$4 \times 64 - 6$$
$$256 - 6 = \boxed{250}$$

Answer 250

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.
- An error in the order of operations occurs when addition is inappropriately applied before evaluating the exponent.
- The rest of the work evaluating the expression is carried out correctly using sound procedures.

This response correctly addresses only some elements of the task.

40

What is the value of the expression $4(3 + 5^2) - 6$?

Show your work.

$4(3 + 5^2) - 6 = 106$

Answer 106

Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

- The correct solution is provided with no work.

Per Scoring Policy #3 for 2- and 3- credit responses, this response receives no credit.

40

What is the value of the expression $4(3 + 5^2) - 6$?

Show your work.

$4(3 + 5^{\times 20})-6$

$4 + (3) - 6$

$17 - 6 = 11$

Answer 11

Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

- Although subtraction is correctly carried out, the exponent is incorrectly addressed, and the distributive property is incorrectly applied.

Holistically, this response is insufficient to show any understanding.

41

A restaurant buys cheese in large blocks. The table below shows the relationship between the number of blocks of cheese, *b*, that they buy, and the total amount paid, *t*, in dollars.

CHEESE PRICES

Amount of Cheese, *b* (blocks)	Total Price, *t* (dollars)
2	112
4	224
6	336
8	448

Based on the data in the table, write an equation to represent the total price, *t*, in terms of the number of blocks of cheese bought, *b*. Be sure to identify the independent and dependent variables in your explanation.

Explain your answer.

_____

_____

_____

41

A restaurant buys cheese in large blocks. The table below shows the relationship between the number of blocks of cheese, b, that they buy, and the total amount paid, t, in dollars.

CHEESE PRICES

Amount of Cheese, b (blocks)	Total Price, t (dollars)
2	112
4	224
6	336
8	448

Based on the data in the table, write an equation to represent the total price, t, in terms of the number of blocks of cheese bought, b. Be sure to identify the independent and dependent variables in your explanation.

Explain your answer.

$t = 56b$

Each block of cheese costs $112 \div 2 = 224 \div 4 = 336 \div 6 = 448 \div 8 = 56$ dollars. I have to multiply the number of blocks of cheese, b, by 56 to get the total price. The total price, t, depends on the number of blocks of cheese, b, so t is the dependent variable, and b is the independent variable.

OR Other valid explanation

41

A restaurant buys cheese in large blocks. The table below shows the relationship between the number of blocks of cheese, b, that they buy, and the total amount paid, t, in dollars.

CHEESE PRICES

Amount of Cheese, b (blocks)	Total Price, t (dollars)
2	112
4	224
6	336
8	448

Based on the data in the table, write an equation to represent the total price, t, in terms of the number of blocks of cheese bought, b. Be sure to identify the independent and dependent variables in your explanation.

Explain your answer.

> The equation to find the total price of the number of blocks of cheese the restaurant brought is
> $b \times 56 = t$. The equation is $b \times 56 = t$ because 56 is the price for one block of cheese and b means the number of blocks of cheese that is brought, so if the restaurant buys 12 blocks of cheese you can multiply 12×56 to get $672 as the total price the restaurant needs to pay. The independent variable is the Amount of Cheese (blocks) and the dependent variable is the Total Price (dollars).

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.

- A correct equation is written.
- The explanation correctly describes the relationship between total price and blocks of cheese, and the dependent and independent variables are correctly identified.

This response is complete and correct.

41

A restaurant buys cheese in large blocks. The table below shows the relationship between the number of blocks of cheese, b, that they buy, and the total amount paid, t, in dollars.

CHEESE PRICES

Amount of Cheese, b (blocks)	Total Price, t (dollars)
2	112
4	224
6	336
8	448

Based on the data in the table, write an equation to represent the total price, t, in terms of the number of blocks of cheese bought, b. Be sure to identify the independent and dependent variables in your explanation.

Explain your answer.

The equation is b × 56 = t. I figured this out by finding the unit price. To find that, i did 112 ÷ 2 which got me to my unit price of $56 a block of cheese. The independent variable is b, and the dependent variable is t.

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.

- A correct equation is written.
- The explanation correctly describes the relationship between total price and blocks of cheese, and the dependent and independent variables are correctly identified.

This response is complete and correct.

41

A restaurant buys cheese in large blocks. The table below shows the relationship between the number of blocks of cheese, *b*, that they buy, and the total amount paid, *t*, in dollars.

CHEESE PRICES

Amount of Cheese, *b* (blocks)	Total Price, *t* (dollars)
2	112
4	224
6	336
8	448

Based on the data in the table, write an equation to represent the total price, *t*, in terms of the number of blocks of cheese bought, *b*. Be sure to identify the independent and dependent variables in your explanation.

Explain your answer.

$56b = t$

$112 \div 2 = 56$, so 56 is the unit cost. To find the total price you must multiply the unit cost by the number of blocks of cheese bought. The independent variable is b and the dependent variable is t.

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.

- A correct equation is written.
- The explanation correctly describes the relationship between total price and blocks of cheese, and the dependent and independent variables are correctly identified.

The response is complete and correct.

41

A restaurant buys cheese in large blocks. The table below shows the relationship between the number of blocks of cheese, b, that they buy, and the total amount paid, t, in dollars.

CHEESE PRICES

Amount of Cheese, b (blocks)	Total Price, t (dollars)
2	112
4	224
6	336
8	448

Based on the data in the table, write an equation to represent the total price, t, in terms of the number of blocks of cheese bought, b. Be sure to identify the independent and dependent variables in your explanation.

Explain your answer.

56b=t
b=independent variable
t=dependent variable

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.
- A correct equation is written, and the dependent and independent variables are correctly identified.
- However, the explanation is incomplete.

This response correctly addresses only some elements of the task.

GUIDE PAPER 5

41

A restaurant buys cheese in large blocks. The table below shows the relationship between the number of blocks of cheese, *b*, that they buy, and the total amount paid, *t*, in dollars.

CHEESE PRICES

Amount of Cheese, b (blocks)	Total Price, t (dollars)
2	112
4	224
6	336
8	448

Based on the data in the table, write an equation to represent the total price, *t*, in terms of the number of blocks of cheese bought, *b*. Be sure to identify the independent and dependent variables in your explanation.

Explain your answer.

1 block of cheese(b) = 56 dollars(t)
Equation: 56b=t

If, b , is the blocks of cheese, and 1 block of cheese is 56 dollars. Then 56xb should be t. For example, if you did 56x4, it'd be 224, like in the graph. So, if B=4, and it said 56b, then the equation would be 56x4, and you'd get 224. And if B=2, it'd be 56x2, since it said 56b. 56x2 is 112, like in the graph. Which is why the equation to represent the total price, would be 56b=t.

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.
- A correct equation is written; however, the dependent and independent variables are not identified.
- The relationship between total price and blocks of cheese is correctly explained.

This response correctly addresses only some elements of the task.

41

A restaurant buys cheese in large blocks. The table below shows the relationship between the number of blocks of cheese, b, that they buy, and the total amount paid, t, in dollars.

CHEESE PRICES

Amount of Cheese, b (blocks)	Total Price, t (dollars)
2	112
4	224
6	336
8	448

Based on the data in the table, write an equation to represent the total price, t, in terms of the number of blocks of cheese bought, b. Be sure to identify the independent and dependent variables in your explanation.

Explain your answer.

b is the independant variables and t is the dependant

1 block of cheese is worth 56 dollars

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.
- The dependent and independent variables are correctly identified.
- However, a correct equation is not written, and the relationship between total price and blocks of cheese is not fully explained.

This response correctly addresses only some elements of the task.

GUIDE PAPER 7

41

A restaurant buys cheese in large blocks. The table below shows the relationship between the number of blocks of cheese, b, that they buy, and the total amount paid, t, in dollars.

CHEESE PRICES

Amount of Cheese, b (blocks)	Total Price, t (dollars)
2	112
4	224
6	336
8	448

Based on the data in the table, write an equation to represent the total price, t, in terms of the number of blocks of cheese bought, b. Be sure to identify the independent and dependent variables in your explanation.

Explain your answer.

$112 \div 2 = 56.$ $224 \div 4 = 56.$ $336 \div 6 = 56$ $448 \div 8 = 56.$ Its mulitplying, every block of cheese is \$56


Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

- Although the unit rate is correctly calculated and explained, a correct equation is not written, and the explanation is insufficient to demonstrate understanding of the relationship between total price and blocks of cheese.

Holistically, this response is insufficient to show any understanding.

41

A restaurant buys cheese in large blocks. The table below shows the relationship between the number of blocks of cheese, b, that they buy, and the total amount paid, t, in dollars.

CHEESE PRICES

Amount of Cheese, b (blocks)	Total Price, t (dollars)
2	112
4	224
6	336
8	448

Based on the data in the table, write an equation to represent the total price, t, in terms of the number of blocks of cheese bought, b. Be sure to identify the independent and dependent variables in your explanation.

Explain your answer.

$t = b \times 56$

Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

• The correct solution is provided with no explanation.

Per Scoring Policy #3 for 2- and 3-credit responses, this response receives no credit.

The net of a right square pyramid is shown below.
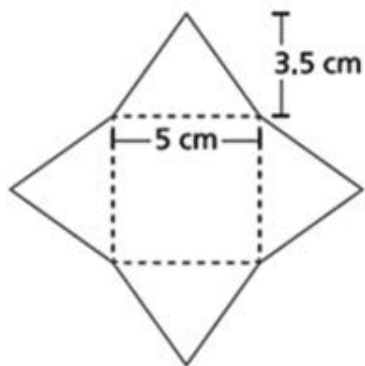
What is the surface area, in square centimeters, of the pyramid?

Show your work.

Answer _____ square centimeters

EXEMPLARY RESPONSE

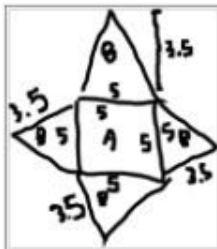**42**

The net of a right square pyramid is shown below.
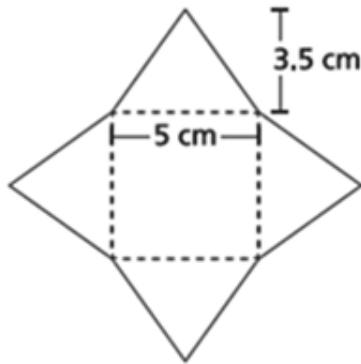
What is the surface area, in square centimeters, of the pyramid?

Show your work.

Area of one triangle: $\frac{1}{2} \times 3.5 \times 5 = 8.75$

Area of four triangles: $4 \times 8.75 = 35$

Area of square base: $5 \times 5 = 25$

Surface area: $25 + 35 = 60$

OR

Area of four triangles: $4 \times \frac{1}{2} \times 3.5 \times 5 = 2 \times 3.5 \times 5 = 35$

Area of square base: $5 \times 5 = 25$

Surface area: $25 + 35 = 60$

OR Other valid process

Answer _____60_____ square centimeters

42

The net of a right square pyramid is shown below.

What is the surface area, in square centimeters, of the pyramid?

Show your work.

SA = 5 x 3.5 ÷ 2 x 4 + 5 x 5
SA = 17.5 ÷ 2 x 4 + 5 x 5
SA = 8.75 x 4 + 5 x 5
SA = 35 + 5 x 5
SA = 35 + 25
SA = 60

Answer 60 square centimeters

Score Credit 2 (out of 2 credits)

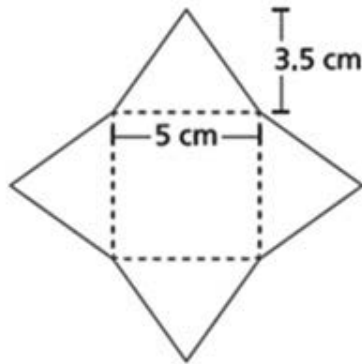This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
• The surface area of the pyramid is correctly determined using sound procedures.
This response is complete and correct.

42

The net of a right square pyramid is shown below.

3.5 cm

├─5 cm─┤

What is the surface area, in square centimeters, of the pyramid?

Show your work.

A
$A = l \times w$
$A = 5 \times 5$
$A = 25$

B
$A = \frac{b \cdot h}{2}$
$A = \frac{3.5 \cdot 5}{2} = \frac{17.5}{2} = 8.75$

$7.75 \times 4 = 35$
$25 + 35 = 60$

Answer 60 square centimeters

Score Credit 2 (out of 2 credits)

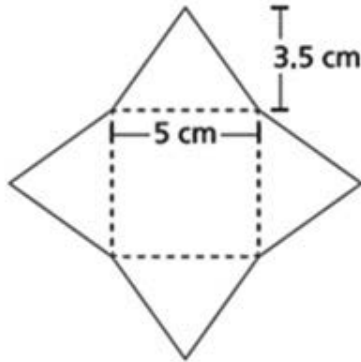This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.

• The surface area of the pyramid is correctly determined using sound procedures.

This response is complete and correct.

42

The net of a right square pyramid is shown below.

3.5 cm

|— 5 cm —|

What is the surface area, in square centimeters, of the pyramid?

Show your work.

$(5 \times 3.5 \times 2) + (5 \times 5)$

becuase the area of a triangle is base times height /2 bu there are four triangles so the anwer is multiplied by two and the area of a square is bas times height so yeah.

Answer $(5 \times 3.5 \times 2) + (5 \times 5) = 60$ square centimeters

---

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
- The surface area of the pyramid is correctly determined using sound procedures.

This response contains sufficient work to demonstrate a thorough understanding.

42

The net of a right square pyramid is shown below.

What is the surface area, in square centimeters, of the pyramid?

Show your work.

Answer $\boxed{55}$ square centimeters

Score Credit 1 (out of 2 credits)

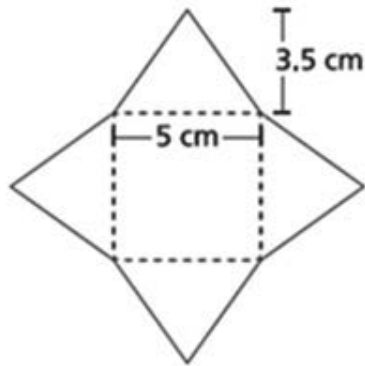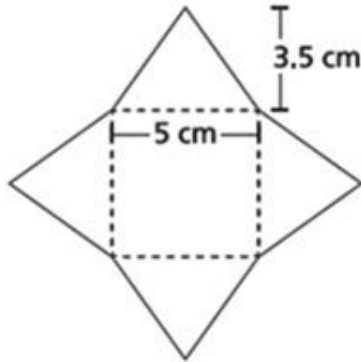This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.

- The area of four triangles is calculated using a sound procedure.
- An incorrect value is used for the area of the base when calculating the surface area of the pyramid, and it is unclear how this incorrect value is determined.

This response correctly addresses only some elements of the task.

42

The net of a right square pyramid is shown below.

What is the surface area, in square centimeters, of the pyramid?

Show your work.

$5 \times 5 = 25$

$3.5 \times 5 = 17.5 \times 4 = 70$

Answer 95 square centimeters

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.

- The area of the base is correctly calculated; however, division by 2 is ignored when calculating the area of four triangles.
- The calculated areas are correctly added to determine the surface area of the pyramid.
- The run-on equations do not detract from the demonstration of an understanding of the task.

This response correctly addresses only some elements of the task.

42

The net of a right square pyramid is shown below.

What is the surface area, in square centimeters, of the pyramid?

Show your work.

(3.5 X 5) X 2
17.5 X 2

Answer 35 square centimeters

Score Credit 1 (out of 2 credits)

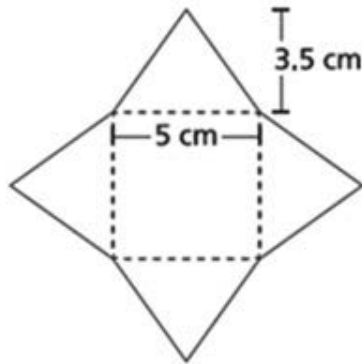This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.

- The area of four triangles is correctly determined using a sound procedure.
- The area of the base of the pyramid is not addressed when determining the surface area of the pyramid.

This response correctly addresses only some elements of the task.

42

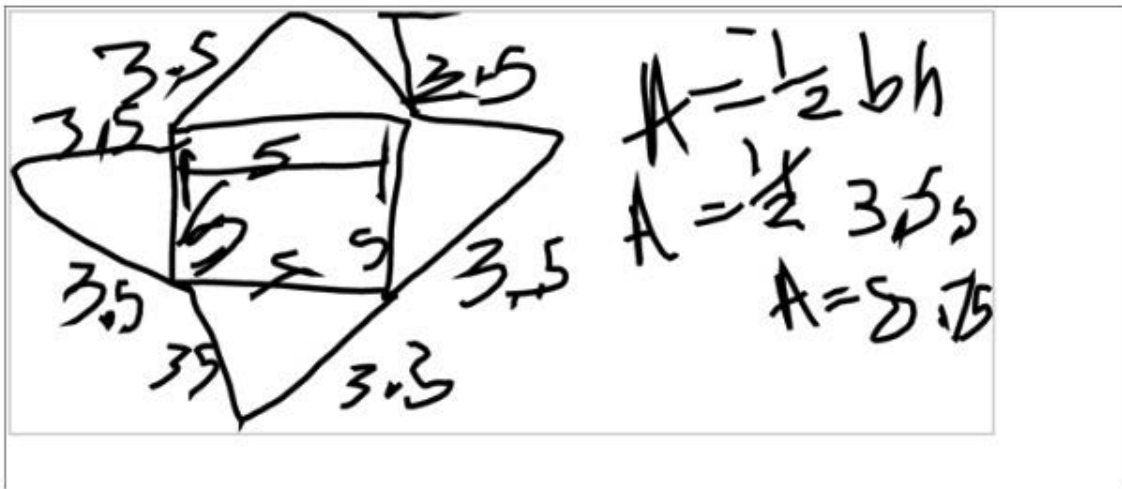The net of a right square pyramid is shown below.

3.5 cm

5 cm

What is the surface area, in square centimeters, of the pyramid?

Show your work.

$A = \frac{1}{2}bh$

$A = \frac{1}{2}\ 3.5\ 5$

$A = 8.75$
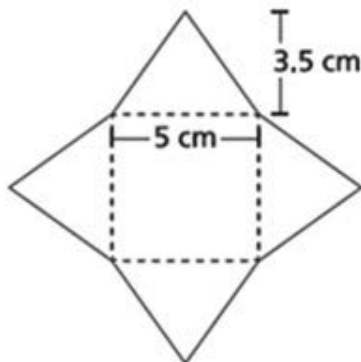
Answer 8.75   square centimeters

Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

- Although the area of one triangle is correctly determined, the surface area of the rest of the pyramid is not addressed.

Holistically, this response is insufficient to show any understanding.

42

The net of a right square pyramid is shown below.

What is the surface area, in square centimeters, of the pyramid?

Show your work.

```
3.5 × 5 = 17.5
17.5 × 4 = 70
```

Answer 70 square centimeters

Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

- The area of the base of the pyramid is not addressed.
- Division by 2 is ignored when calculating the area of one triangle, leading to an incorrect sum of the areas of the 4 triangles that is inappropriately provided as the solution.

Holistically, this response is insufficient to show any understanding.

43

The top of a rectangular table has a width of $3\frac{1}{3}$ feet and an area of $21\frac{2}{3}$ square feet.

What is the length, in feet, of the top of the table?

Show your work.

Answer _____ feet

43

The top of a rectangular table has a width of $3\frac{1}{3}$ feet and an area of $21\frac{2}{3}$ square feet.

What is the length, in feet, of the top of the table?

Show your work.

$$21\frac{2}{3} \div 3\frac{1}{3} = \frac{65}{3} \div \frac{10}{3} = \frac{65}{3} \times \frac{3}{10} = \frac{65}{10} = 6\frac{5}{10} = 6\frac{1}{2}$$

OR Other valid process

Answer $\dfrac{6\frac{1}{2}}{\textit{OR Equivalent}}$ feet

43

The top of a rectangular table has a width of $3\frac{1}{3}$ feet and an area of $21\frac{2}{3}$ square feet.

What is the length, in feet, of the top of the table?

Show your work.

Step 1:   K   C   F

$$21\frac{2}{3} \div 3\frac{1}{3} = \frac{65}{3} \times \frac{3}{10}$$

Step 2:

$$\frac{65}{1} \times \frac{1}{10} = \frac{65}{10}$$

Check:

$$\frac{65}{10} \times \frac{10}{3} = \frac{65}{1} \times \frac{1}{3} = \frac{65}{3} = 21\frac{2}{3}$$

Answer $\boxed{\dfrac{65}{10}}$ feet

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.

- The length of the top of the table is correctly determined using sound procedures.

This response is complete and correct.

43

The top of a rectangular table has a width of $3\frac{1}{3}$ feet and an area of $21\frac{2}{3}$ square feet.

What is the length, in feet, of the top of the table?

Show your work.

$$3\frac{1}{3} = \frac{10}{3} \qquad 21\frac{2}{3} = \frac{65}{3} \qquad \frac{65}{3} \div \frac{10}{3}$$

$$\frac{65}{3} \times \frac{3}{10} =$$

$$\frac{195}{30} = 6\frac{15}{30}$$

Answer $\boxed{6\frac{15}{30}}$ feet

Score Credit 2 (out of 2 credits)

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

GUIDE PAPER 3

43

The top of a rectangular table has a width of $3\frac{1}{3}$ feet and an area of $21\frac{2}{3}$ square feet.

What is the length, in feet, of the top of the table?

Show your work.

$$21\frac{2}{3} = \frac{65}{3}$$

$$3\frac{1}{3} = \frac{10}{3} \qquad \frac{65}{3} \div \frac{10}{3} \cdot \frac{6.5}{1}$$

$$6.5$$

.

Answer | 6 1/2 | feet

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.

- The length of the top of the table is correctly determined using sound procedures.

This response contains sufficient work to demonstrate a thorough understanding.

GUIDE PAPER 4

43

The top of a rectangular table has a width of $3\frac{1}{3}$ feet and an area of $21\frac{2}{3}$ square feet.

What is the length, in feet, of the top of the table?

Show your work.

21 2/3 ÷ 3 1/3=

Answer 6 1/2 feet

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.
- A correct expression is written to determine the length of the top of the table and a correct solution is provided; however, it is unclear how the correct solution is obtained.

This response contains the correct solution, but the required work is incomplete.

43

The top of a rectangular table has a width of $3\frac{1}{3}$ feet and an area of $21\frac{2}{3}$ square feet.

What is the length, in feet, of the top of the table?

Show your work.

$$21\frac{2}{3} \div 3\frac{1}{3} = $$

$$\frac{66}{3} \times \frac{3}{10} = \frac{198}{30}$$

66×3

Answer $\dfrac{198}{30}$ feet

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.

- A correct division expression is written to represent the value of the length of the table. However, a conversion error occurs when writing the mixed number for the area as an improper fraction, resulting in an incorrect solution.
- The calculated area is correctly divided by width to determine the length of the top of the table.

This response contains an incorrect solution but applies a mathematically appropriate process.

43

The top of a rectangular table has a width of $3\frac{1}{3}$ feet and an area of $21\frac{2}{3}$ square feet.

What is the length, in feet, of the top of the table?

Show your work.

$$21\frac{2}{3} \div 3\frac{1}{3} \text{ and you have to do kcf(keep change flip) so}$$

$$\frac{23}{3} \times \frac{3}{10}$$

$$\frac{69}{30}$$

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

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.

- A correct division expression is written to represent the value of the length of the table. However, a conversion error occurs when writing the mixed number as an improper fraction.
- An additional conversion error occurs when writing the determined solution as a mixed number.

This response correctly addresses only some elements of the task.

GUIDE PAPER 7

43

The top of a rectangular table has a width of $3\frac{1}{3}$ feet and an area of $21\frac{2}{3}$ square feet.

What is the length, in feet, of the top of the table?

Show your work.

$$3\frac{1}{3} \div 21\frac{2}{3} = 7\frac{2}{3}$$

Answer $7\frac{2}{3}$ feet

Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

- The division is written in an incorrect order, and the numbers are incorrectly divided.
- It is unclear how the incorrect solution is obtained.

Holistically, this response is insufficient to show any understanding.

43

The top of a rectangular table has a width of $3\frac{1}{3}$ feet and an area of $21\frac{2}{3}$ square feet.

What is the length, in feet, of the top of the table?

Show your work.

Answer $6\frac{1}{2}$ in feet

## Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

• The correct solution is provided with no work.

Per Scoring Policy #3 for 2- and 3-credit responses, this response receives no credit.

Paige uses the coordinate plane shown below to represent the locations of the vegetable patches in her garden. Each unit on the coordinate plane represents 1 foot.
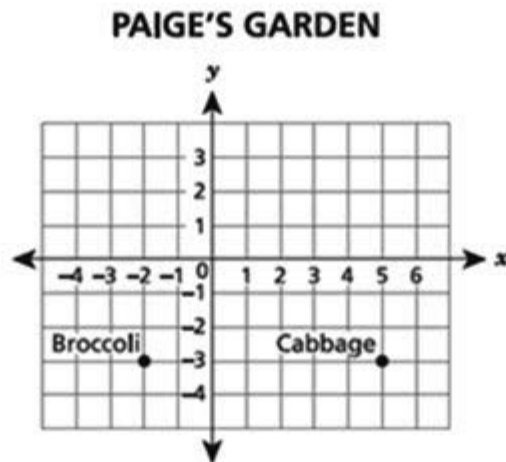
PAIGE'S GARDEN
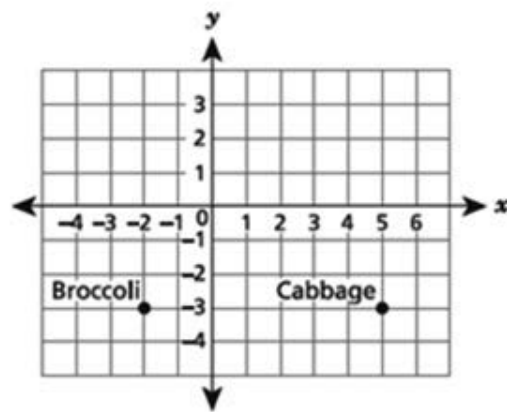
What is the shortest distance, in feet, from the cabbage patch to the broccoli patch? Be sure to include the coordinates that represent the locations of both vegetable patches in your answer.

Explain how you determined your answer.

_____

_____

_____

EXEMPLARY RESPONSE

Paige uses the coordinate plane shown below to represent the locations of the vegetable patches in her garden. Each unit on the coordinate plane represents 1 foot.

PAIGE'S GARDEN

What is the shortest distance, in feet, from the cabbage patch to the broccoli patch? Be sure to include the coordinates that represent the locations of both vegetable patches in your answer.
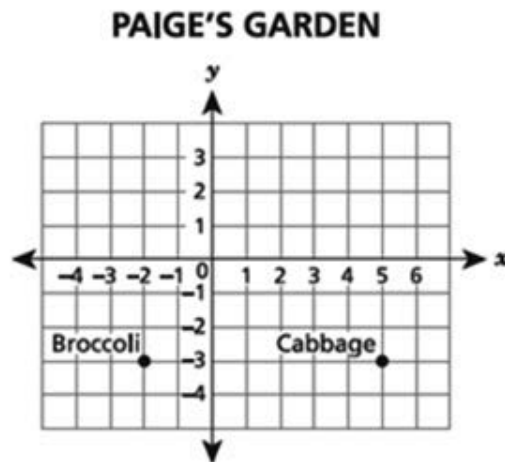
Explain how you determined your answer.

7 feet because $|5| + |-2| = 7$

AND

The cabbage patch is located at (5, -3) and the broccoli patch is located at (-2, -3).

OR Other valid explanation

44

Paige uses the coordinate plane shown below to represent the locations of the vegetable patches in her garden. Each unit on the coordinate plane represents 1 foot.

PAIGE'S GARDEN

What is the shortest distance, in feet, from the cabbage patch to the broccoli patch? Be sure to include the coordinates that represent the locations of both vegetable patches in your answer.

Explain how you determined your answer.

> The shortest distance is 7 ft. The cabbage patch's coordinates are (5, -3) while the brocoli's are (-2,-3). So if I add 5 and 2 it will equal 7.

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
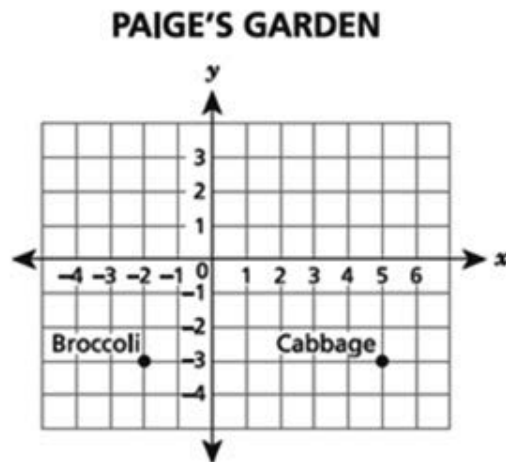
- The distance between the two locations is correctly calculated and explained, and the coordinates of both locations are correctly stated.

This response is complete and correct.

GUIDE PAPER 2

44

Paige uses the coordinate plane shown below to represent the locations of the vegetable patches in her garden. Each unit on the coordinate plane represents 1 foot.

PAIGE'S GARDEN

What is the shortest distance, in feet, from the cabbage patch to the broccoli patch? Be sure to include the coordinates that represent the locations of both vegetable patches in your answer.

Explain how you determined your answer.

broccoli = (-2, -3) cabbage (5,-3)
 solve by x - x
5- -2 =7

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
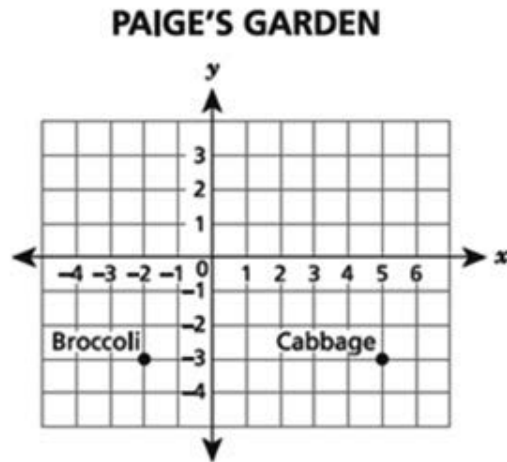
- The distance between the two locations is correctly calculated and explained, and the coordinates of both locations are correctly stated.

This response is sufficient to show a thorough understanding.

44

Paige uses the coordinate plane shown below to represent the locations of the vegetable patches in her garden. Each unit on the coordinate plane represents 1 foot.

PAIGE'S GARDEN

What is the shortest distance, in feet, from the cabbage patch to the broccoli patch? Be sure to include the coordinates that represent the locations of both vegetable patches in your answer.

Explain how you determined your answer.

> The shortest distance is 7 feet. I determind that answer by going left 7 units from (5,-3) to (-2,-3)

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
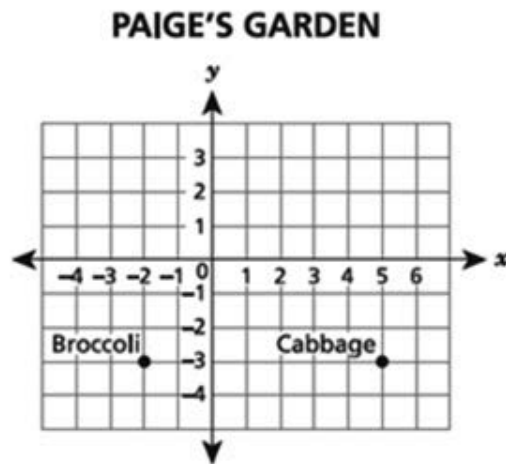- The distance between the two locations is correctly calculated and explained, and the coordinates of both locations are correctly stated.

This response is sufficient to show a thorough understanding.

44

Paige uses the coordinate plane shown below to represent the locations of the vegetable patches in her garden. Each unit on the coordinate plane represents 1 foot.

PAIGE'S GARDEN

What is the shortest distance, in feet, from the cabbage patch to the broccoli patch? Be sure to include the coordinates that represent the locations of both vegetable patches in your answer.

Explain how you determined your answer.

broccoli is -2
cabbage is 5
5 is 7 spaces from -2
7 feet

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.

- The distance between the two locations is correctly calculated and explained; however, the coordinates of the two locations are incorrectly stated.

This response correctly addresses only some elements of the task.

44

Paige uses the coordinate plane shown below to represent the locations of the vegetable patches in her garden. Each unit on the coordinate plane represents 1 foot.

PAIGE'S GARDEN
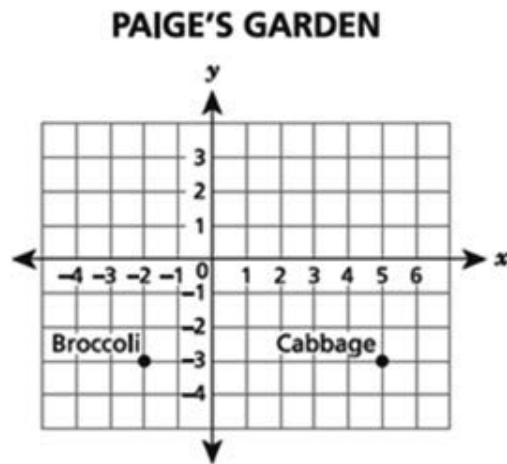
What is the shortest distance, in feet, from the cabbage patch to the broccoli patch? Be sure to include the coordinates that represent the locations of both vegetable patches in your answer.

Explain how you determined your answer.

> I found the distance from the brocoli patch with coordinates (-2,-3), and the cabbage patch with coordinates (5,-3) by going up the the coordinate plane abd counting the spaces on the x-axis in between both patches.

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.

- The coordinates of both locations are correctly stated, and the distance between the two locations is correctly explained by counting units between x-coordinates; however, the distance is not calculated.

This response correctly addresses only some elements of the task.

44

Paige uses the coordinate plane shown below to represent the locations of the vegetable patches in her garden. Each unit on the coordinate plane represents 1 foot.

PAIGE'S GARDEN
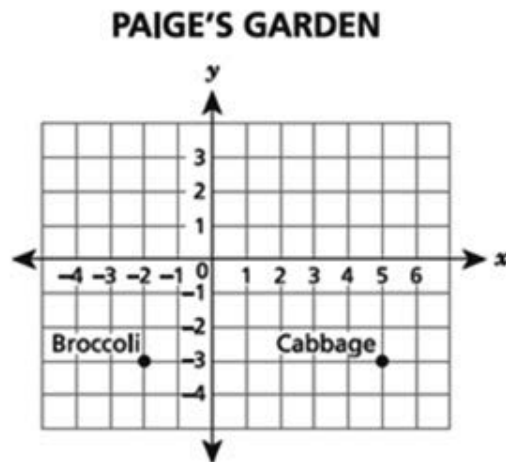
What is the shortest distance, in feet, from the cabbage patch to the broccoli patch? Be sure to include the coordinates that represent the locations of both vegetable patches in your answer.

Explain how you determined your answer.

> 7 feeta nd I determined the distance by adding their x axia absoulute values.

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.

- The distance between the two locations is correctly calculated; however, the coordinates of the two locations are not stated.

This response correctly addresses only some elements of the task.

GUIDE PAPER 7

44

Paige uses the coordinate plane shown below to represent the locations of the vegetable patches in her garden. Each unit on the coordinate plane represents 1 foot.

PAIGE'S GARDEN
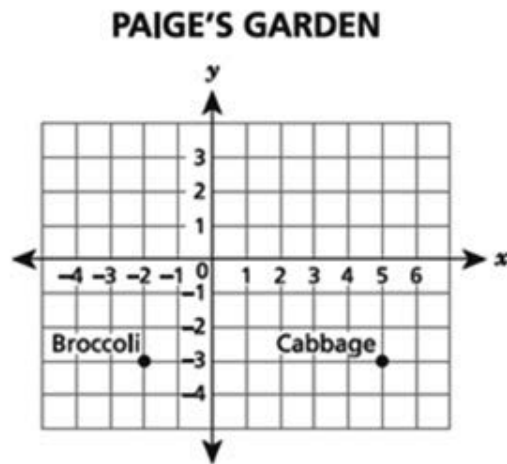
What is the shortest distance, in feet, from the cabbage patch to the broccoli patch? Be sure to include the coordinates that represent the locations of both vegetable patches in your answer.

Explain how you determined your answer.

Cabbage 5, -3
Broccoli -3 -2
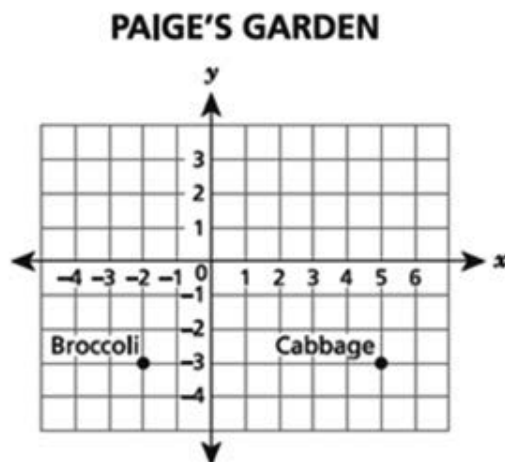They dictance is 7 feet

---

Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

- Although the distance between the two locations is correctly stated, it is unclear how it is obtained, and the coordinates for the broccoli patch are transposed.

Holistically, this response is insufficient to show any understanding.

44

Paige uses the coordinate plane shown below to represent the locations of the vegetable patches in her garden. Each unit on the coordinate plane represents 1 foot.

PAIGE'S GARDEN

What is the shortest distance, in feet, from the cabbage patch to the broccoli patch? Be sure to include the coordinates that represent the locations of both vegetable patches in your answer.

Explain how you determined your answer.

> 8 because broccoli is 2 away from zero and cabbage is 5 away from zero.

Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

- Although this response contains some correct elements, an incorrect distance is provided, and the coordinates of the two locations are not stated.

Holistically, this response is insufficient to show any understanding.

45

A recipe requires a ratio of 2 cups of sesame seeds to 5 cups of pretzels. Using this ratio, how many cups of pretzels are needed when 3 cups of sesame seeds are used?

Show your work.

Answer _____ cups of pretzels

45

A recipe requires a ratio of 2 cups of sesame seeds to 5 cups of pretzels. Using this ratio, how many cups of pretzels are needed when 3 cups of sesame seeds are used?

Show your work.

The recipe requires 5 cups of pretzels for every 2 cups of sesame seeds, or 2.5 cups of pretzels for each cup of sesame seeds.

So, if we use 3 cups of sesame seeds then we need to use $2.5 \times 3 = 7.5$ cups of pretzels.

OR

$3 \div 2 = 1.5$ is the ratio of sesame seeds between the two batches.

So, $1.5 \times 5 = 7.5$ cups of pretzels are needed.

OR Other valid process

Answer _____7.5_____ cups of pretzels

45

A recipe requires a ratio of 2 cups of sesame seeds to 5 cups of pretzels. Using this ratio, how many cups of pretzels are needed when 3 cups of sesame seeds are used?

Show your work.

$3 \div 2 = 1.5$
$1.5 \times 5 = 7.5$

Answer 7.5 cups of pretzels

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
- The number of cups of pretzels needed for the new batch is correctly determined using sound procedures.

This response is complete and correct.

45

A recipe requires a ratio of 2 cups of sesame seeds to 5 cups of pretzels. Using this ratio, how many cups of pretzels are needed when 3 cups of sesame seeds are used?

Show your work.

> $2 \div 2 = 1$ $5 \div 2 = 2.5$ $1 \times 3 = 3$ $2.5 \times 3 = 7.5$

Answer | 7.5 | cups of pretzels

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.

- The number of cups of pretzels needed for the new batch is correctly determined using sound procedures.

This response is complete and correct.

GUIDE PAPER 3

45

A recipe requires a ratio of 2 cups of sesame seeds to 5 cups of pretzels. Using this ratio, how many cups of pretzels are needed when 3 cups of sesame seeds are used?

Show your work.

> if one cup of sesame is used, then 2.5 cups of pretzel is also used. 2 to 5 we already know, so 5 + 2.5 = 7.5

Answer 7.5 cups of pretzel | cups of pretzels

Score Credit 2 (out of 2 credits)

This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
- The number of cups of pretzels per cup of sesame seeds is correctly identified, and the number of cups of pretzels needed for the new batch is correctly determined using sound procedures.

This response contains sufficient work to demonstrate a thorough understanding.

45

A recipe requires a ratio of 2 cups of sesame seeds to 5 cups of pretzels. Using this ratio, how many cups of pretzels are needed when 3 cups of sesame seeds are used?

Show your work.

5+2.5=7.5

Answer 7.5 cups of pretzels

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.
- Although the number of cups of pretzels needed for the new batch is correctly determined, no additional work is provided to support the quantity of 2.5 in the addition equation used to represent the situation.

This response contains the correct solution, but the required work is incomplete.

45

A recipe requires a ratio of 2 cups of sesame seeds to 5 cups of pretzels. Using this ratio, how many cups of pretzels are needed when 3 cups of sesame seeds are used?

Show your work.

$5 \div 2 = 3.5$
$3.5 \times 3 = 10.5$

Answer 10.5 cups of pretzels

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.
- The number of cups of pretzels needed for the new batch is determined using sound procedures; however, a division error results in an incorrect solution.

This response contains an incorrect solution but applies a mathematically appropriate process.

45

A recipe requires a ratio of 2 cups of sesame seeds to 5 cups of pretzels. Using this ratio, how many cups of pretzels are needed when 3 cups of sesame seeds are used?

Show your work.

1 = 2.5 2=5   3=7.5

Answer 7.5 cups of pretzels

Score Credit 1 (out of 2 credits)

This response demonstrates only a partial understanding of the mathematical concepts and procedures in the task.
- The number of cups of pretzels per cup of sesame seeds is correctly identified.
- However, the work is insufficient.

This response contains the correct solution, but the required work is incomplete.

45

A recipe requires a ratio of 2 cups of sesame seeds to 5 cups of pretzels. Using this ratio, how many cups of pretzels are needed when 3 cups of sesame seeds are used?

Show your work.

*Answer* 7.5 cups of pretzels

---

Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

• The correct solution is provided with no work.

Per Scoring Policy #3 for 2- and 3-credit responses, this response receives no credit.

45

A recipe requires a ratio of 2 cups of sesame seeds to 5 cups of pretzels. Using this ratio, how many cups of pretzels are needed when 3 cups of sesame seeds are used?

Show your work.

$$2 \times 3 = 6 \quad 5 \times 3 = 15$$

Answer 15 cups of pretzels

Score Credit 0 (out of 2 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

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

This response is incorrect and is insufficient to show any understanding.

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

9 feet
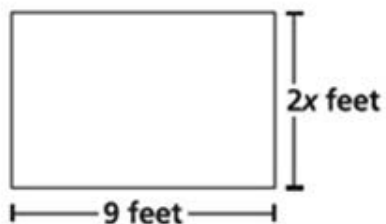
The area of the rug is 54 square feet. Write and solve an equation to determine the value of x. Be sure to use the unknown, x, in your equation.

Show your work.

Answer x = _____

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, p, of each rug. Be sure to use the unknown, p, in your equation.
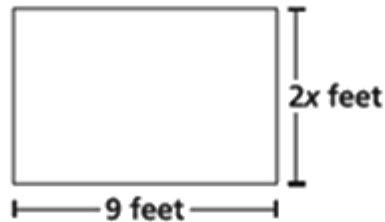
Show your work.

Answer $ _____
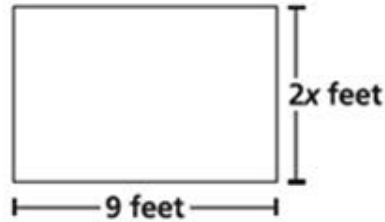
46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

9 feet

The area of the rug is 54 square feet. Write and solve an equation to determine the value of x. Be sure to use the unknown, x, in your equation.

Show your work.

$9(2x) = 54$
$18x = 54$
$x = 54 \div 18$
$x = 3$

OR Other valid process

Answer $x =$ _____3_____

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, p, of each rug. Be sure to use the unknown, p, in your equation.

Show your work.

$7p = 784$
$p = 784 \div 7$
$p = 112$

OR Other valid process

Answer $ _____112_____

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

—— 9 feet ——

The area of the rug is 54 square feet. Write and solve an equation to determine the value of *x*. Be sure to use the unknown, *x*, in your equation.

Show your work.

$54 = 9 \times 2x$
$54 \div 9 = 6$
$6 \div 2 = 3$
$54 = 9 \times 2x$
$54 = 9 \times 6$

Answer *x* = 3

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, *p*, of each rug. Be sure to use the unknown, *p*, in your equation.

Show your work.

$784 = 7p$
$784 \div 7 = 112$

Answer $ 112

Score Credit 3 (out of 3 credits)

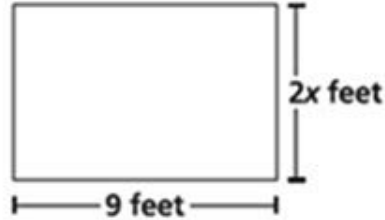This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
- Two correct equations are written to solve for *x* and *p*.
- The values of *x* and *p* are correctly determined using sound procedures.

This response is complete and correct.

GUIDE PAPER 2

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

├──── 9 feet ────┤

The area of the rug is 54 square feet. Write and solve an equation to determine the value of x. Be sure to use the unknown, x, in your equation.

Show your work.

> 54=9 x 2x
> 54= 9 x 2(3)
> 54=9x6
> 54=54

Answer $x =$ 3

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, p, of each rug. Be sure to use the unknown, p, in your equation.

Show your work.

> 784 ÷ 7 = p
> 784 ÷ 7 = 112

Answer $ 112

Score Credit 3 (out of 3 credits)

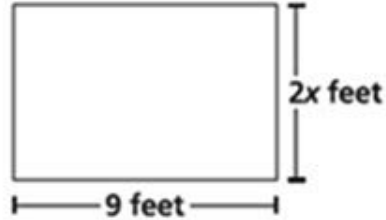This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
- Two correct equations are written to solve for x and p.
- The values of x and p are correctly determined using sound procedures.

This response is complete and correct.

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

9 feet

The area of the rug is 54 square feet. Write and solve an equation to determine the value of *x*. Be sure to use the unknown, *x*, in your equation.

Show your work.

> $9 \times 2x = 54$ (We can make that equasion from the formula for a rectangle.
> $2x = 6$
> $x = 3$

Answer *x* = 3

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, *p*, of each rug. Be sure to use the unknown, *p*, in your equation.

Show your work.

> $7p = 784$
> $p = 112$

Answer $ 112

Score Credit 3 (out of 3 credits)

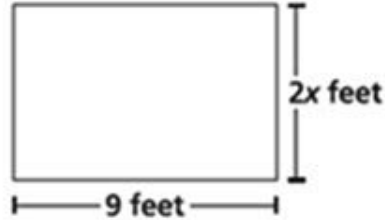This response demonstrates a thorough understanding of the mathematical concepts and procedures in the task.
- Two correct equations are written to solve for *x* and *p*.
- The values of *x* and *p* are correctly determined using sound procedures.

This response contains sufficient work to demonstrate a thorough understanding.

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

⊢——9 feet——⊣

The area of the rug is 54 square feet. Write and solve an equation to determine the value of *x*. Be sure to use the unknown, *x*, in your equation.

Show your work.

$$2x \times 9 = 54$$
$$2 \times 3 = 6$$
$$9 \times 6 = 54$$

Answer *x =* 6

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, *p*, of each rug. Be sure to use the unknown, *p*, in your equation.

Show your work.

$$7 \times p = 784$$
$$784 \div 7 = p$$
$$p = 112$$

Answer $ 112

Score Credit 2 (out of 3 credits)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task.

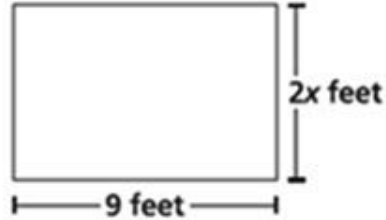- Two correct equations are written to solve for *x* and *p*.
- The value of *p* is correctly determined; however, the width of the rectangle is inappropriately provided as a solution for the first equation.

This response contains an incorrect solution but provides sound procedures.

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

⊢———9 feet———⊣

The area of the rug is 54 square feet. Write and solve an equation to determine the value of x. Be sure to use the unknown, x, in your equation.

Show your work.

9 x 2=18 9 x 6=54 2x3=6

Answer $x =$ 3

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, p, of each rug. Be sure to use the unknown, p, in your equation.

Show your work.

784 ÷ 7=p
784 ÷ 7=112

Answer $ 112

Score Credit 2 (out of 3 credits)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task.
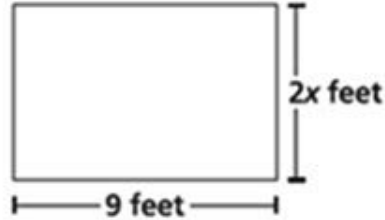
- A correct equation is written to solve for p; however, an equation to represent the situation using the given variable to stand for the unknown quantity is not written.

This response appropriately addresses most, but not all, aspects of the task.

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

9 feet

The area of the rug is 54 square feet. Write and solve an equation to determine the value of x. Be sure to use the unknown, x, in your equation.

Show your work.

$54 \div 9 = 6$
$6 \div 2 = 3$
$X=3$

Answer $x = \boxed{3}$

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, p, of each rug. Be sure to use the unknown, p, in your equation.

Show your work.

$784 \div 7 = 112$
$P=\$112$

Answer $\boxed{112}$

Score Credit 2 (out of 3 credits)

This response demonstrates a partial understanding of the mathematical concepts and procedures in the task.
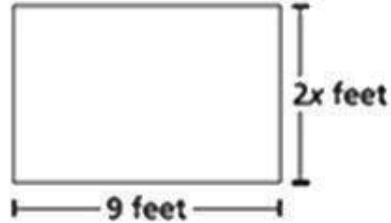- The values of x and p are correctly determined using sound procedures; however, the equations are not written to represent the situation using the given variables to stand for the unknown quantities.

This response reflects some minor misunderstanding of the underlying mathematical concepts and procedures.

GUIDE PAPER 7

The figure below shows the dimensions of a rug shaped like a rectangle.

The area of the rug is 54 square feet. Write and solve an equation to determine the value of x. Be sure to use the unknown, x, in your equation.

Show your work.

$9 \times 2x = 54$

Answer $x = 1$

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, p, of each rug. Be sure to use the unknown, p, in your equation.

Show your work.

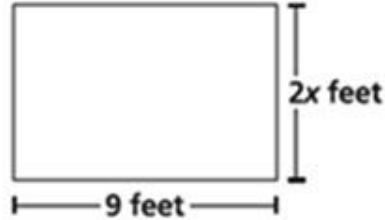price per 1:112 $784 \div 7 = 112$per

Answer $112

Score Credit 1 (out of 3 credits)

This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task.

- A correct equation is written to solve for x; however, an incorrect solution is provided, and it is unclear how it is obtained.
- The price of one rug is correctly determined; however, an equation to represent the situation using the given variable to stand for the unknown quantity is not written.

This response addresses some elements of the task correctly but exhibits multiple flaws related to misunderstanding of important aspects of the task.

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

├──── 9 feet ────┤

The area of the rug is 54 square feet. Write and solve an equation to determine the value of x. Be sure to use the unknown, x, in your equation.

Show your work.

9 = 2x
4.5 = x

Answer $x =$ 4.5

A company buys 7 of these rugs for \$784. Write and solve an equation to determine the price, p, of each rug. Be sure to use the unknown, p, in your equation.

Show your work.

7p = 784
p = 112

Answer \$ 112

Score Credit 1 (out of 3 credits)

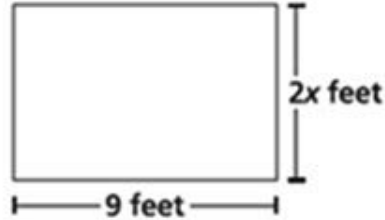This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task.

- An irrelevant equation is written and solved for x.
- A correct equation is written to solve for p, and the value of p is correctly determined.

This response addresses some elements of the task correctly but reflects a lack of essential understanding of the mathematical concepts and procedures.

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

9 feet

The area of the rug is 54 square feet. Write and solve an equation to determine the value of *x*. Be sure to use the unknown, *x*, in your equation.

Show your work.

> 3 because two times 3 is 6 and 6 times 9 is 54

Answer $x = \boxed{3}$

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, *p*, of each rug. Be sure to use the unknown, *p*, in your equation.

Show your work.

> 2 times 3 times 9 times 7 that equals 784

Answer $ \boxed{784}

Score Credit 1 (out of 3 credits)

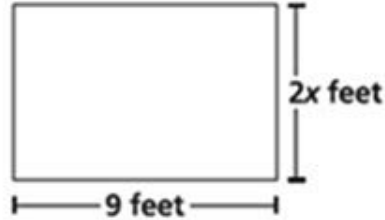This response demonstrates only a limited understanding of the mathematical concepts and procedures in the task.

- The value of *x* is correctly determined; however, an incorrect procedure is used to determine the value of *p*, and equations are not written to represent the situation using the given variables to stand for the unknown quantities.

This response addresses some elements of the task correctly but provides reasoning that is faulty or incomplete.

GUIDE PAPER 10

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

9 feet

The area of the rug is 54 square feet. Write and solve an equation to determine the value of *x*. Be sure to use the unknown, *x*, in your equation.

Show your work.

$54 = 9 \div 2x$
$54 \div 9$
6

Answer $x = \boxed{6}$

A company buys 7 of these rugs for \$784. Write and solve an equation to determine the price, *p*, of each rug. Be sure to use the unknown, *p*, in your equation.

Show your work.

$784 \times 7 = p = 5488$

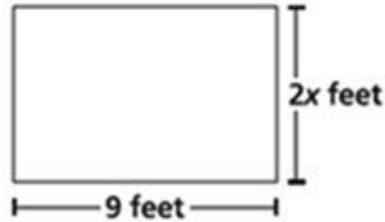**Answer** \$ $\boxed{5488}$

Score Credit 0 (out of 3 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.

- An incorrect equation is written to solve for *x*, and it is incorrectly solved.
- An irrelevant equation is written and solved for *p*.

Holistically, this response is insufficient to show any understanding.

46

The figure below shows the dimensions of a rug shaped like a rectangle.

2x feet

├── 9 feet ──┤

The area of the rug is 54 square feet. Write and solve an equation to determine the value of *x*. Be sure to use the unknown, *x*, in your equation.

Show your work.

$A = l \times w$
$54 = 9w$

$\dfrac{}{9} \quad \dfrac{}{9}$

$w = 6$

Answer *x* = 6

A company buys 7 of these rugs for $784. Write and solve an equation to determine the price, *p*, of each rug. Be sure to use the unknown, *p*, in your equation.

Show your work.

Answer $

Score Credit 0 (out of 3 credits)

This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts and procedures in the task.
- An equation solving for the width of the rectangle is inappropriately written, and the rest of the task is not addressed.

Holistically, this response is insufficient to show any understanding.

Grade 6

Mathematics

Scoring Leader Materials
2025 Training Set