



NEVADA
**INSTRUCTIONAL
MATERIALS**

FOR THE
NEVADA ACADEMIC CONTENT STANDARDS FOR MATHEMATICS

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Grade 5
STUDENT WORKBOOK

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Introduction

This document represents the Phase III release of Nevada Instructional Materials. These released materials were developed in collaboration with Nevada educators, the Nevada Department of Education, and WestEd (a nonprofit research development and service agency).

These materials are intended for use in various guided instructional activities to support deep understanding of the Nevada Academic Content Standards (NVACS) for English Language Arts and mathematics based on Common Core. The Nevada Instructional Materials provide educators opportunities to investigate and explore the standards and tasks that are aligned to the standards. The Nevada educators involved in the development of these materials also developed “Teacher Tips” to assist in using these materials as an instructional resource. The Nevada Instructional Materials also provide educators opportunities to investigate and explore the standards and tasks that are aligned to the standards.

While these materials can provide students with practice in responding to a variety of assessment items, it is more important that they are used to help students deepen their understanding of the expectations embedded in the standards. If these instructional materials are used solely as an assessment practice activity, we highly recommend that educators go over each item with their students and evaluate each answer choice so that students can better understand the knowledge required to successfully complete each task.

Through rich classroom discussion around each item and the various answer choices or potential responses, educators can actively engage students in critical thinking, reasoning, and application of knowledge and skills, helping to ensure all students are ready for success in the 21st century.



Name: _____

Mathematics

Grade 5

This booklet contains mathematics questions for you to answer. There are four types of questions in this booklet: multiple-choice, selected-response (some of which are simulated technology-enhanced), short-answer, and written-response questions.

- For the multiple-choice questions you will be given four answer choices—A, B, C, and D. You are to select the correct answer from the four choices. Each question has only one correct answer.
- For simulated technology-enhanced questions, you will be required to perform the required task (e.g., filling in the blank(s), matching, graphing, completing tables).
- For other selected-response questions, you will be given different numbers of answer choices. You are to select ALL the correct answers from the choices. Each question has multiple correct answers.
- The short-answer questions and the written-response questions require you to give a written response to a question as indicated in the booklet.

You may use the rubrics below to help you do a good job when you are answering the short-answer questions and the written-response questions.

Two-Point Short-Answer

Score	Description
2	Response: <ul style="list-style-type: none">• Demonstrates an understanding of the standard• Answers the question clearly and correctly• Includes all work to show how the answer was found and/or a correct and complete explanation
1	Response: <ul style="list-style-type: none">• Demonstrates a limited understanding of the standard• Answers part of the question correctly• Includes some work to show how the answer was found and/or a partially correct explanation
0	Response: <ul style="list-style-type: none">• Is not correct• Includes no answer and/or an insufficient (or no) explanation

Three-Point Extended-Response

Score	Description
3	Response: <ul style="list-style-type: none">• Demonstrates a thorough understanding of the standard• Answers all parts of the question clearly and correctly• Includes all work to show how the answer was found and/or a correct and complete explanation
2	Response: <ul style="list-style-type: none">• Demonstrates a general understanding of the standard• Answers most parts of the question correctly• Includes some work to show how the answer was found and/or a partially correct explanation
1	Response: <ul style="list-style-type: none">• Demonstrates a minimal understanding of the standard• Answers some part of the question• Includes minimal (or no) work to show how the answer was found and/or a minimal (or no) explanation
0	Response: <ul style="list-style-type: none">• Is not correct• Includes no answer and/or an insufficient (or no) explanation

Four-Point Extended-Response

Score	Description
4	Response: <ul style="list-style-type: none">• Demonstrates a thorough understanding of the standard• Answers all parts of the question clearly and correctly• Includes all work to show how the answer was found and/or a correct and complete explanation
3	Response: <ul style="list-style-type: none">• Demonstrates a general understanding of the standard• Answers most parts of the question correctly• Includes some work to show how the answer was found and/or a partially correct explanation
2	Response: <ul style="list-style-type: none">• Demonstrates a limited understanding of the standard• Answers some parts of the question correctly• Includes minimal work to show how the answer was found and/or a minimal explanation
1	Response: <ul style="list-style-type: none">• Demonstrates a minimal understanding of the standard• Answers some part of the question• Includes insufficient (or no) work to show how the answer was found and/or an insufficient (or no) explanation
0	Response: <ul style="list-style-type: none">• Is not correct• Includes no answer and/or an insufficient (or no) explanation



Operations and Algebraic Thinking

Grade 5
Student Workbook

1 Which expressions are equivalent to $4 + 1 - (9 \div 3)$? Select **all** that apply.

- A $24 \div 3 - 6$
 B $7 \times 3 - 14 + 9$
 C $4 \times 4 + 4 \div 10$
 D $8 \times 2 \div (2 + 3 \times 2)$

2 Four descriptions of calculations are listed below.

- A six less than the product of three and twelve
 B twelve times the sum of six and three
 C three more than the quotient of twelve divided by six
 D twelve times the difference between six and three

Each description listed matches an expression below. Write the letter for each description in the box next to the expression it matches.

- $(12 \div 6) + 3$
 $(3 \times 12) - 6$
 $12 \times (6 - 3)$
 $(6 + 3) \times 12$

3 An expression is shown below.

$$9000 \div (12 + 3)$$

Which of these describes the expression?

- A divide 9,000 by 12, then add 3
 B divide 9,000 by 12, then subtract 3
 C divide 9,000 by the sum of 12 and 3
 D divide 9,000 by the product of 12 and 3

4 The x -values and the y -values shown in the table below follow different patterns.

x	0	2	4	6	8	10
y	0	4	8	12	16	20

Which ordered pairs represent corresponding x -values and y -values in the same patterns? Select **all** that apply.

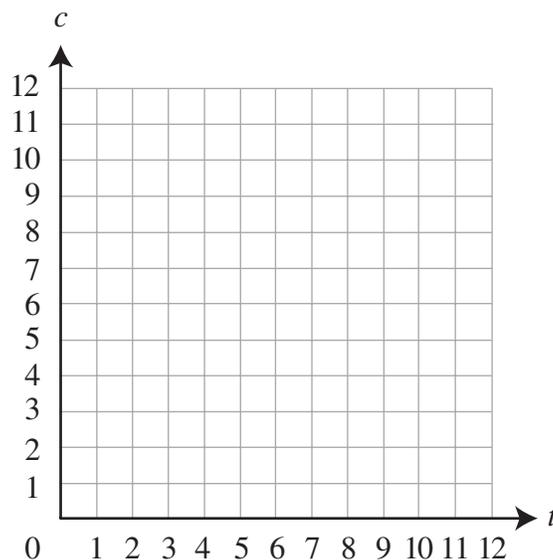
- A (1, 1)
 B (3, 5)
 C (5, 10)
 D (7, 15)
 E (9, 18)

5

When setting up a meeting room, the number of tables and the number of chairs that could be placed in the room each follow different patterns, as described below.

- The room could have no tables and no chairs.
- As the number of tables placed in the room increases by 1, the number of chairs placed in the room increases by 3 .

On the coordinate grid below, graph 5 ordered pairs to represent some of the numbers of tables (t) and some of the numbers of chairs (c) that could be placed in the room.



6

Two patterns are described below.

- A pattern of x -values starts with 1 and follows the rule “add 2 .”
- A pattern of y -values starts with 1 and follows the rule “add 1 .”

- A** Complete the table on the next page to show the first 5 terms in each pattern.
- B** Describe a relationship between the x -value and the y -value in each term. Explain why the relationship remains the same even as the x -values and y -values continue to increase.

Write your response on the grid on the next page.

A

Term	x	y
1		
2		
3		
4		
5		

B

STOP



Number and Operations in Base Ten

Grade 5
Student Workbook

7 Which statements about place value are true? Select **all** that apply.

- A** The value of the digit 5 in the number 6,526 is 10 times the value of the digit 5 in the number 5,241 .
- B** The value of the digit 8 in the number 8,641 is 10 times the value of the digit 8 in the number 4,803 .
- C** The value of the digit 1 in the number 105 is $\frac{1}{10}$ the value of the digit 1 in the number 1,267 .
- D** The value of the digit 3 in the number 36 is $\frac{1}{10}$ the value of the digit 3 in the number 63 .

8 When the number 136.4 is divided by 10^2 , the decimal point moves

- A** one place to the right.
B one place to the left.
C two places to the right.
D two places to the left.

9 Which of these is equivalent to 956.208 ?

- A $(9 \times 100,000) + (5 \times 10,000) + (6 \times 1,000) + (2 \times 100) + (8 \times 1)$
- B nine hundred fifty-six and two hundred eight hundredths
- C $(9 \times 100) + (5 \times 10) + (6 \times 1) + (2 \times 0.1) + (8 \times 0.001)$
- D nine hundred fifty-six and two hundred eight

10 Five decimal numbers are listed below.

0.36 0.365 0.305 0.371 0.358

Using the blanks below, write the decimal numbers in order from **least** to **greatest**.

_____ < _____ < _____ < _____ < _____

11 Which number has the same value when it is rounded to the nearest tenth as when it is rounded to the nearest hundredth?

- A 3.888
- B 3.801
- C 3.567
- D 3.505

12 An incomplete multiplication problem is shown below.

$$\begin{array}{r}
 1, 5 \quad 0 \quad 7 \\
 \times \quad 3 \quad 9 \\
 \hline
 \square \quad \square \quad \square \quad \square \quad \square
 \end{array}$$

Write a digit (0 through 9) in each box to show the product of the multiplication problem. The same digit may be used in more than one box.

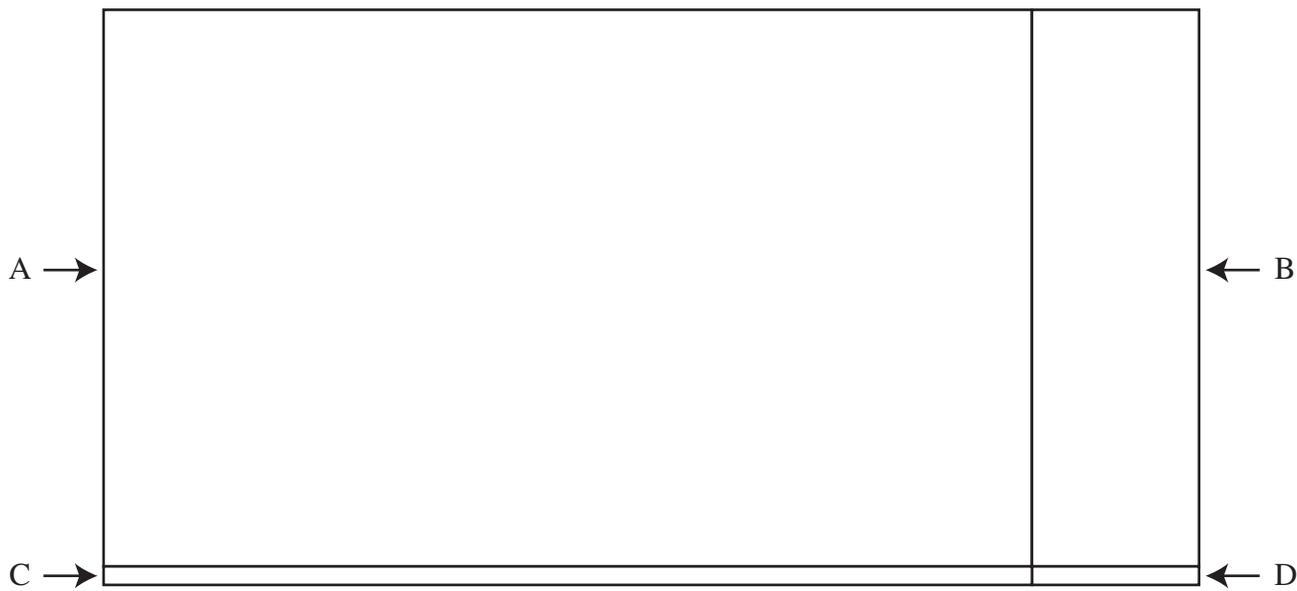
13 A team of workers is setting up 6,450 chairs for a concert. The workers will place the chairs in 86 rows, with an equal number of chairs in each row. Which expressions can be used to find the number of chairs in each row? Select **all** that apply.

- A $(6000 \div 86) + (450 \div 86)$
- B $(6000 \div 50) + (450 \div 36)$
- C $(6020 \div 86) + (430 \div 86)$
- D $(6450 \div 80) + (6450 \div 6)$
- E $(6450 \div 50) + (6450 \div 36)$
- F $(6450 \div 43) + (6450 \div 43)$

14

What is the quotient of the expression $1829 \div 31$? Write the answer in the blank below.

Using the quotient and the expression, complete the area model shown below with 4 expressions to model the product 1,829 .



A: _____ \times _____

B: _____ \times _____

C: _____ \times _____

D: _____ \times _____

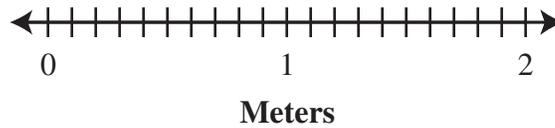
15

Jackson has 1.8 meters of rope. He cuts the rope into a number of pieces that are each 0.3 meter.

Into how many pieces does Jackson cut the rope? Write the answer in the blank below.

_____ pieces

Use the number line below to support your answer by modeling the calculation.



16

Part of a pizza menu is shown below.

PIZZA MENU		
	Medium	Large
Plain Cheese	\$10.10	\$15.50
Basic Toppings	\$1.40 per topping	
Premium Toppings	\$2.90 per topping	

Ricky orders the two pizzas described below.

- 1 large pizza with 2 basic toppings and 1 premium topping
- 1 medium pizza with 1 basic topping and 1 premium topping

A What is the total cost, in dollars, of the pizzas Ricky orders? Show your work or explain your thinking.

The large pizza is cut into 8 equal-sized slices. The medium pizza is cut into 6 equal-sized slices.

B What is the difference, in dollars, between the cost of each slice of the large pizza Ricky ordered and the cost of each slice of the medium pizza Ricky ordered? Use pictures and/or words to explain the **reasoning** behind the strategy you used to find the difference in costs.

Write your response on the grid on the next page.

A													
B													

STOP



Number and Operations— Fractions

**Grade 5
Student Workbook**

17 Which expression could be used to find the sum of $4\frac{2}{3} + \frac{1}{5}$?

A $4 + \left(\frac{2}{15} + \frac{1}{15}\right)$

B $4 + \left(\frac{2 \times 1}{3 + 5}\right)$

C $4 + \left(\frac{2 + 1}{3 + 5}\right)$

D $4 + \left(\frac{10}{15} + \frac{3}{15}\right)$

18 A farmer divides 15 pounds of grapes equally among 4 boxes. The farmer adds $8\frac{1}{2}$ pounds of apples to **each** box. How many pounds of fruit are in each box? Write the answer as a mixed number in the blank below.

_____ pounds

19

A statement and three tables are shown below. Place a check mark next to the number in each table that completes the statement and makes it true.

Anna made cups of trail mix by combining cup of peanuts, $1\frac{1}{8}$ cups of almonds, and

cup of raisins. Anna's trail mix includes fewer cups of raisins than peanuts.

	Option 1
$\frac{1}{4}$	
3	
$\frac{3}{8}$	
2	
$\frac{1}{2}$	
4	

	Option 2
$\frac{1}{4}$	
3	
$\frac{3}{8}$	
2	
$\frac{1}{2}$	
4	

	Option 3
$\frac{1}{4}$	
3	
$\frac{3}{8}$	
2	
$\frac{1}{2}$	
4	

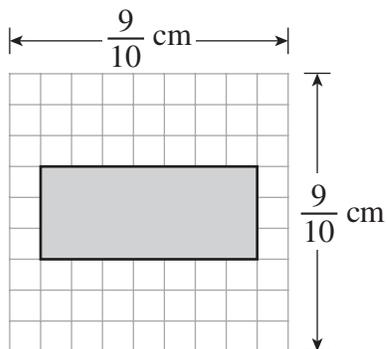
21

John plans to walk 10 miles in 3 hours. He plans to walk the same number of miles each hour.

- A** Write and solve an equation to find the number (n) of miles that John plans to walk each hour. Write your answer as a mixed number. Explain why your answer is correct.
- B** John actually walks $2\frac{1}{2}$ miles in the first hour of the walk. He multiplies $2\frac{1}{2} \times 3$ and comes to the conclusion that it may take longer than he originally planned to finish his walk. Explain why John is correct, and find how much longer, in hours, it will take him to finish his walk.

Write your response on the grid on the next page.

- 22** A rectangle is shown on the grid below.



Which equation is true and could be used to find the area, in square centimeters, of the rectangle?

- A $\frac{7}{10} \times \frac{3}{10} = \frac{21}{100}$
 B $\frac{7}{10} \times \frac{3}{10} = \frac{21}{10}$
 C $\frac{7}{10} + \frac{3}{10} = \frac{10}{10}$
 D $\frac{3}{7} + \frac{9}{10} = \frac{93}{70}$

- 23** The product of which expression is **less** than the product of $225 \times \frac{3}{5}$?

- A 225×1
 B $225 \times \frac{2}{5}$
 C $225 \times \frac{3}{4}$
 D $225 \times \frac{4}{5}$

- 25** Sheri used $\frac{2}{3}$ of the amount of butter that was called for in a recipe. The recipe called for $2\frac{1}{2}$ cups of butter. The equation below can be used to find the number (n) of cups of butter that Sheri used.

$$n = \frac{2}{3} \times 2\frac{1}{2}$$

What is the value of n ? Write the answer as a mixed number in the blank below.

- 26** A fraction is missing from the equations below.

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

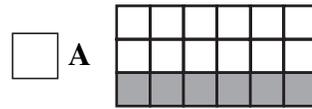
$$\frac{\square}{\square} \times 4 = \frac{1}{2}$$

Use the bar below to write the fraction that completes the equations and makes them true.

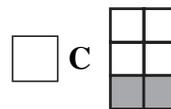
- 27** Harley uses 8 gallons of water to water all his plants. He uses $\frac{1}{4}$ gallon of water for each plant. How many plants does Harley water? Write the answer in the blank below.

_____ plants

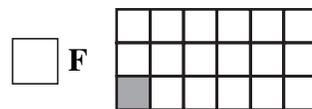
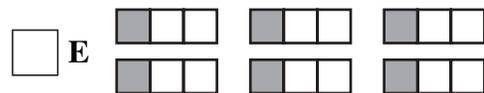
- 28** Devon has a bag of popcorn that is $\frac{1}{3}$ full. She puts all the popcorn into 6 cups, with an equal amount of popcorn in each cup. Which of these represent the fraction of the bag of popcorn that Devon puts into each cup? Select **all** that apply.



B 18



D $\frac{1}{18}$



STOP



Measurement and Data

Grade 5
Student Workbook

29

A fish tank holds 50 **gallons** of water. Maria removes 16 **cups** of water from the fish tank. How many **quarts** of water remain in the fish tank?

- A 34 quarts
- B 46 quarts
- C 184 quarts
- D 196 quarts

30

Heather and Anya are making bookmarks with pieces of yarn.

- Heather has 72 inches of yarn.
- Anya has 5 feet of yarn.
- It takes 6 inches of yarn to make one bookmark.

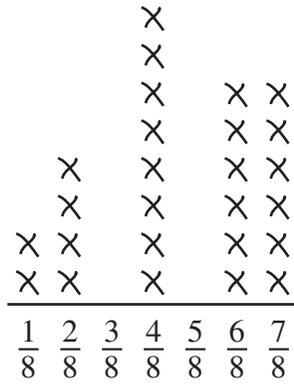
Which of these statements are true? Select **all** that apply.

- A Heather and Anya have the same amount of yarn.
- B Anya can make 10 bookmarks.
- C Heather has 1 more foot of yarn than Anya has.
- D Heather can make 14 bookmarks.
- E Together, Heather and Anya can make 22 bookmarks.

32

Each of 26 lamps held 1 liter of oil before an event. Miguel checked the oil level in each lamp after the event. He made the line plot below to show the amount of oil remaining in each lamp.

Oil Level in Lamps



Key
X = 1 lamp

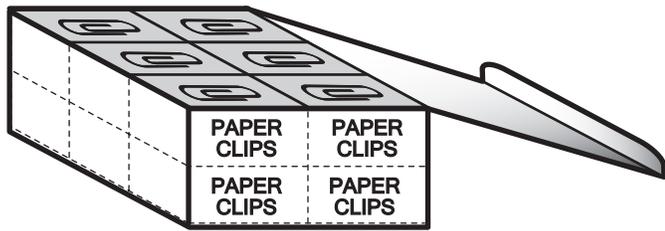
Fraction of 1 Liter of Oil Remaining

How much oil does Miguel need to completely fill all 26 of the lamps before the next event? Show your work or explain your thinking.

Write your response on the grid below.



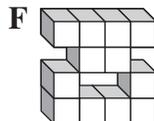
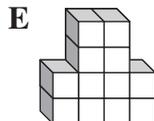
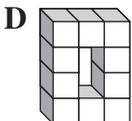
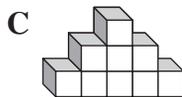
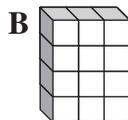
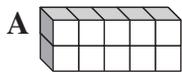
- 33** The picture below shows a box that is shaped like a rectangular prism and packed, with no gaps or overlaps, with smaller boxes of paper clips.



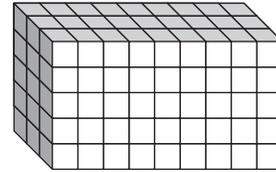
Each box of paper clips is also shaped like a rectangular prism and has a volume of 6 cubic inches. What is the volume of the box holding all the boxes of paper clips?

- A 60 cubic inches
- B 66 cubic inches
- C 72 cubic inches
- D 96 cubic inches

- 34** Circle **each** figure below that has a volume of 12 cubic units.



- 35** Julio packed the greatest number of unit cubes possible into a box shaped like a rectangular prism, as pictured below.



Could Julio use each expression below to find the volume, in cubic units, of the box? Select yes or no for **each** expression.

- A $9 + (3 + 5)$ Yes No
- B $(9 \times 3) \times 5$ Yes No
- C $(9 + 3) \times (9 + 5)$ Yes No
- D $9 \times (5 \times 3)$ Yes No
- E $(9 \times 5) \times 3$ Yes No
- F $(9 \times 5) + (9 \times 3)$ Yes No

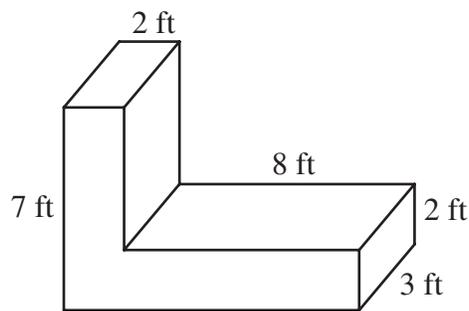
- 36** A container is shaped like a right rectangular prism. The volume of the container is 450 cubic inches. The length of the container is 15 inches. Write a possible width and height of the container in the blanks below. Write the answers as whole numbers only.

Width: _____ inches

Height: _____ inches

38

The figure shown below is made up of two non-overlapping right rectangular prisms.

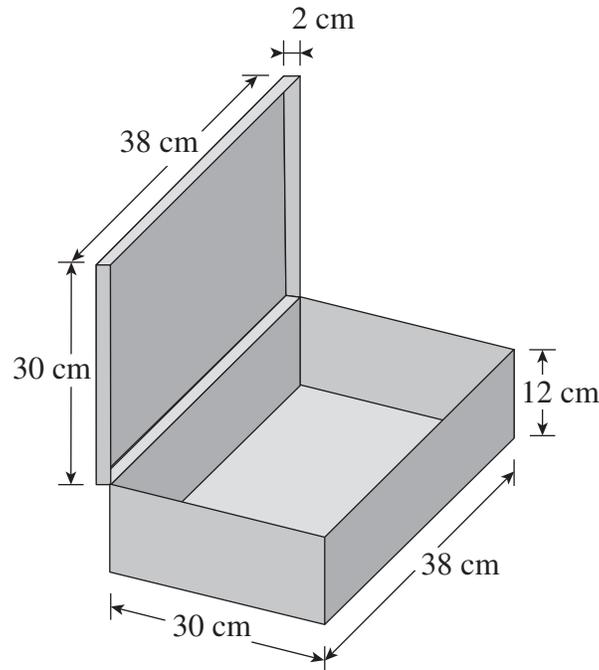


What is the volume of the figure? Write the answer in the blank below.

_____ cubic feet (ft³)

39

Brandon purchased a storage box shaped like a rectangular prism to hold some CDs. A diagram of the box is shown below, along with the inside measurements of the top and the bottom of the box. The top and the bottom of the box do **not** overlap when the box is closed.



- A** What is the total volume, in cubic centimeters (cm^3), of the box when it is closed? Show your work or explain your thinking.

Brandon hopes the box will hold 100 CD cases. Each CD case that Brandon wants to put in the box is shaped like a rectangular prism and measures 12 cm by 12 cm by 1 cm.

- B** Based on the given measurements, explain why the storage box is **not** large enough to hold 100 CD cases. As part of your explanation, include a greatest number of CD cases that the box could **most** likely hold. Show all your work.

Write your response on the grid on the next page.

A													
B													

STOP

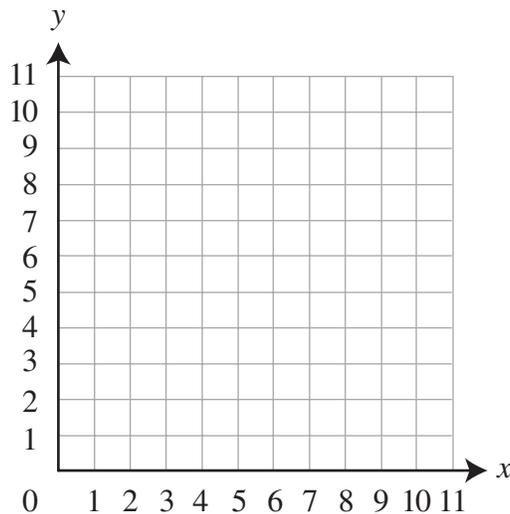


Geometry

Grade 5 Student Workbook

40

A coordinate grid is shown below.



On the coordinate grid, graph and label the four points described below.

- Point N is located at the origin.
- Point P is located on the x -axis, 5 units away from the origin.
- Point Q is located on the y -axis, 3 units away from the origin.
- Point R has an x -coordinate of 4 and a y -coordinate of 7 .

41

Kerri hiked near a lake in the mountains. The table below shows the total distance she had traveled after each hour of the hike.

Kerri's Hike

Time (hours)	1	2	3	4
Distance (miles)	2	4	6	8

A On the graph on the next page, graph the pairs of values in the table as ordered pairs. Be sure to include a label and scale on each axis.

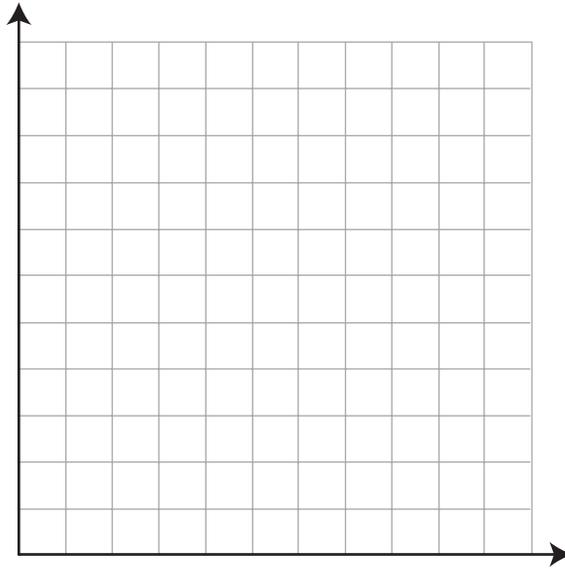
The pairs of values in the table form a pattern.

B What rule explains the relationship between the values in each ordered pair?

Write your response on the grid on the next page.

A

Kerri's Hike



B



- 42** All squares are trapezoids because **all** squares and **all** trapezoids have
- A** at least one pair of parallel sides.
 - B** four sides of equal length.
 - C** two pairs of opposite angles with equal measures.
 - D** at least one right angle.

- 43** An incomplete sentence comparing the properties of squares and rhombi is shown below.

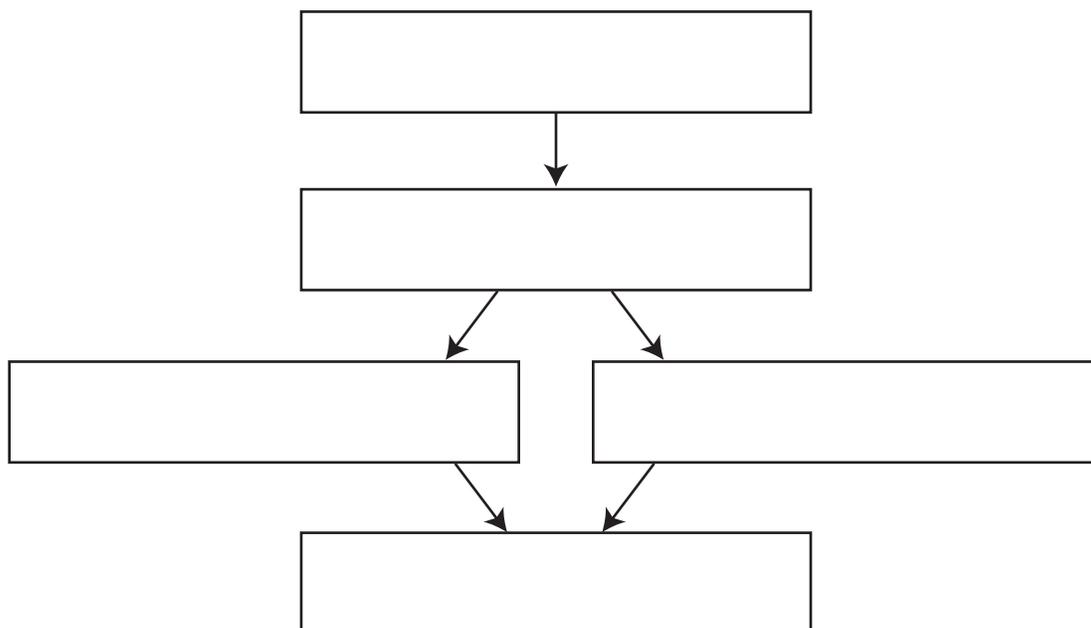
Because all squares are rhombi, all squares have _____ .

Which of these could complete the sentence and make it true? Select **all** that apply.

- A** 4 sides of equal length
- B** 4 angles of equal measure
- C** 4 right angles
- D** opposite angles of equal measure
- E** opposite sides of equal length

44

An empty hierarchy and a list of 2-dimensional figures are shown below.

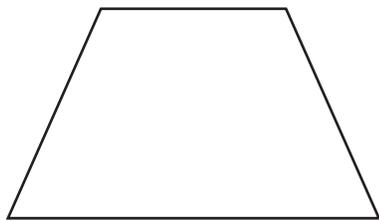


- rectangle
- triangle
- quadrilateral
- circle
- square
- parallelogram
- rhombus

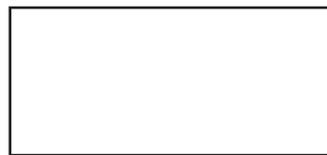
Write the name of one 2-dimensional figure from the list in each empty box to make a correct hierarchy, based on the properties of each figure. Some figures in the list may not belong in the hierarchy.

45

Jim and Keira were each asked to draw an example of a quadrilateral. The shapes they drew are pictured below.



Jim's shape



Keira's shape

What type of quadrilateral **best** describes each student's shape? Write the answers in the blanks below.

Jim's shape: _____ Keira's shape: _____

Explain why both of the shapes are quadrilaterals but only one of the shapes is a parallelogram.

Write your response on the grid below.

STOP



Dale A.R. Erquiaga

Superintendent of Public Instruction

Office of Assessment, Program Accountability, and Curriculum

775-687-9188

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